



Appendix 8B

Non Breeding Bird Surveys October 17 - March 18



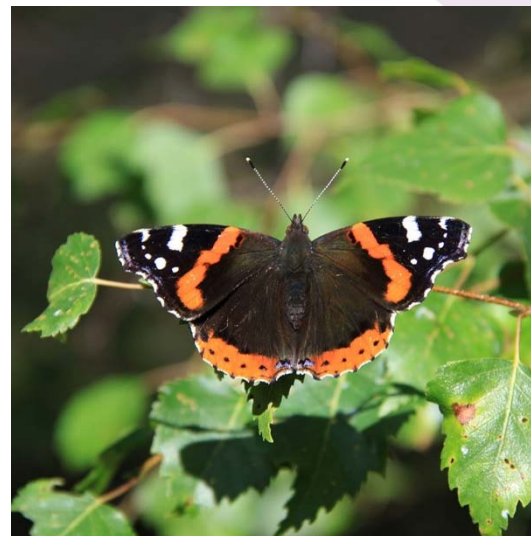
Stornoway Wind Farm Ltd

Stornoway Wind Farm

Chapter 8 Ornithology

Appendix 8B. Bird Surveys

October 2017 – March 2018



Report for

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Doc Ref. 40001 GOS0351r

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Document revisions

No.	Details	Date
1	Draft Report	17 th August 2018
2	Final Report	25 September 2018
3	For EIA Report	20 th February 2019

Executive summary

Purpose of this Report

Stornoway Wind Farm Limited is proposing to construct and operate a wind farm currently anticipated to comprise up to 35 turbines with a generating capacity in excess of 50MW on the site of the existing Consented (but not yet built) Stornoway Wind Farm. The Consented Stornoway Wind Farm gained section 36 consent and planning permission in September 2012 and in May 2015 an application was made to amend this consent with regard to the layout, output and size of the wind turbines, this being granted in spring 2016. The site of the Consented Stornoway Wind Farm (hereafter referred to as the 'Site') is located to the south west of the town of Stornoway on the Isle of Lewis and centred on National Grid Reference (NGR) E137149, N933373. The Proposed Development would comprise a revised layout, with turbine tip heights of approximately 156 m and 180 m and turbine rotor diameters of 136 m and 150 m respectively. Changes to the consented wind farm layout and / or turbine specifications will have implications on the existing assessed ornithological impacts of the wind farm. Furthermore, the status of the baseline bird populations and flight activity patterns will have potentially changed since the original application. Therefore a comprehensive suite of survey work was initiated in October 2017 and continued through to September 2018.

This report has been produced for the purpose of presenting the methods used for collecting winter bird data from October 2017 – March 2018 in support of the Ecological Impact Assessment (EcIA) for the Proposed Development and presents the results collected during this period.

Summary Findings

An extensive survey programme was carried out covering the period October 2017 – March 2018. In summary, the following was undertaken:

- ▶ 54 hours VP survey effort at each VP location (a total of 8);
- ▶ 30 hours of additional hen harrier roost monitoring from November 2017 – March 2018.

Flights were recorded from a total of 11 species during VP surveys. The six most frequently recorded species were hen harrier, greylag goose, golden eagle, white-tailed eagle, whooper swan and golden plover.

Hen harrier appear to have colonised the area as a breeding bird species, first being recorded in 2015 and with 4 pairs breeding in 2016 and it is apparent that they are present during the winter period, with evidence of up to six individuals utilising the area for foraging and roosting.

Flights were recorded from four of the seven qualifying species from the Lewis Peatlands SPA. Two species are on the BoCC red list (hen harrier, white-tailed eagle) whilst five are amber listed. Seven species are on Schedule 1 of the Wildlife and Countryside Act, as amended, with three of those (golden eagle, white-tailed eagle and hen harrier) receiving additional protection from disturbance outside of the breeding season.

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1. Introduction

1.1 Introduction

- 1.1.1 Stornoway Wind Farm Limited is proposing to submit an application under section 36 of the Electricity Act (1989) (as amended) to construct and operate a wind farm currently anticipated to comprise up to 33 turbines with a generating capacity in excess of 50MW on the site of the Consented Stornoway Wind Farm. The application for the proposed wind farm scheme is hereafter referred to as the 'Proposed Development'.
- 1.1.2 The Consented Stornoway Wind Farm gained section 36 consent and deemed planning permission in September 2012 to construct and operate 36 wind turbines. In May 2015, an application was made under the Electricity Act 1989 to amend this consent with regard to the layout, output and size of the wind turbines, with this being granted in spring 2016. Stornoway Wind Farm currently has a consented maximum generating capacity of 180MW, with each turbine having an output of up to 5MW. A further direction to extend the commencement of development date to 06 September 2020 was granted in June 2017.
- 1.1.3 The site of the Consented Stornoway Wind Farm (hereafter referred to as the 'Site') is located to the south west of the town of Stornoway on the Isle of Lewis and centred on National Grid Reference (NGR) E 137149, N 933373.
- 1.1.4 The Proposed Development would comprise a revised layout, with turbine tip heights of approximately 156 m and 180 m and turbine rotor diameters of potentially 136 m and 150 m respectively. The proposed blade tip heights and rotor diameters would maximise potential renewable energy generation at the Site.
- 1.1.5 Changes to the consented wind farm layout and / or turbine specifications will have implications on the existing assessed ornithological impacts of the wind farm. Furthermore, the status of the baseline bird populations and flight activity patterns will have potentially changed since the original application. Therefore a comprehensive suite of survey work was initiated in October 2017 and is continuing until September 2019 to provide up to date baseline information.
- 1.1.6 This report sets out the methods for collecting bird data from October 2017 – March 2018 in support of the Ecological Impact Assessment (EcIA) for the Proposed Development and presents the results of bird surveys during this period.
- 1.1.7 **Annex A** presents figures of flight activity of non-sensitive species, whilst figures for sensitive species are contained within the **Appendix 8D: Confidential Appendix**. **Annex B** contains scientific names of all species referred to in this report, whilst **Annex C**, **Annex D** and **Annex E** presents raw survey data, raw flight data and incidental records respectively.

1.2 Site Description

- 1.2.1 The Site is located approximately 1.5km west of the town of Stornoway, Isle of Lewis. It is centred at National Grid Reference (NGR) E 137149 N 933373. The Site area extends to approximately 1,700ha, although the wind farm infrastructure would occupy only a small part of the overall Site.
- 1.2.2 The topography of the Site ranges between 50 – 150 m Above Ordnance Datum (AOD), with three hillocks within its northern, central and southern areas. The Site is dominated by blanket bog and associated mosses and heather, though there are some areas of woodland present. There are also

a large number of water bodies on Site, both standing and flowing, none of which have any conservation designations.

- 1.2.3 Access to the Site is via the A859. The A858 runs through the northern part of the Site, and partly along the western boundary.
- 1.2.4 Other than the residential area of Stornoway to the east, the area surrounding the Site consists predominantly of boggy, undeveloped peatland. The Site is not subject to any environmental designations.
- 1.2.5 To the west of the Development Site is the Lewis Peatlands, which is designated as a Ramsar Site, Special Protection Area (SPA) and Special Area of Conservation (SAC) primarily on the basis of its blanket bog habitats and breeding bird populations.

2. October 2017 - March 2018 Bird Survey Methods

2.1 Vantage Point Surveys

2.1.1 Vantage Point (VP) watches were undertaken following the standard practices outlined in SNH guidance (2014) covering the period October 2017 to March 2018 inclusive. All VP locations were the same as VP's 1 – 8 used during the 2009 breeding bird surveys in support of the original 2012 application (**Figure 8B.2.1**). The grid references for these locations are as follows:

- | | |
|--------------------------|--------------------------|
| ▶ VP 1 – NB 39378 36606; | ▶ VP 5 – NB 35054 32180; |
| ▶ VP 2 – NB 36132 35739; | ▶ VP 6 – NB 33489 30929; |
| ▶ VP 3 – NB 38260 33600; | ▶ VP 7 – NB 34674 29501; |
| ▶ VP 4 – NB 39860 33719; | ▶ VP 8 – NB 37516 30748. |

Following the recommended methodology, the altitude of the birds were recorded at 15 second intervals, and flights were split across four height bands, with Potential Collision Height (PCH) covering bands B and C:

- | | |
|----------------|-----------------|
| ▶ A: <20 m; | ▶ C: 100-200 m; |
| ▶ B: 20-100 m; | ▶ D: 200 m > |

2.1.2 As per surveys carried out in 2009-2010 surveys, target species were identified as:

- | | |
|----------------------|--------------------|
| ▶ Geese and swans | ▶ Peregrine; |
| ▶ Golden eagle; | ▶ Short-eared owl; |
| ▶ White-tailed eagle | ▶ Waders; |
| ▶ Merlin; | ▶ Skuas. |
| ▶ Hen harrier; | |

2.1.3 Given the proximity of the Lewis Peatlands SPA / Ramsar sites and the large range of target species identified in the area the time spent watching from each vantage point totalled 54 hours at each location, thus providing a robust baseline for assessment of these key sensitive receptors. Effort was made to ensure that the data was representative and therefore dusk, dawn and daytime watches were all undertaken. Survey effort, including a summary of weather conditions, is presented in **Table C.1, Annex C**.

2.2 Hen Harrier Roost Monitoring

2.2.1 In November 2017, activity recorded during standard VP surveys and incidental observations whilst accessing the Site indicated that there appeared to be a number of hen harriers utilising parts of the Site as a night time roosting areas (see **Appendix 8D: Confidential Appendix**). The northernmost area is centred along a line of Juncus rushes running roughly west-east, whilst the second roost area comprises a larger Juncus area a little further south before the moor drops off.

- 2.2.2 Hen harriers have only recently started to breed on Lewis, with the first confirmed breeding attempt in 2015. The national hen harrier survey in 2016 identified four breeding attempts on Lewis (Challis *et al*, 2018), and it is probable that establishment of a breeding population may have precipitated the development of this roost site. Historically, individuals have been regularly recorded wintering or on passage on Lewis during the winter periods.
- 2.2.3 Although the roost locations fell wholly within the viewshed of the standard VP 3 location, and thus were covered by 9 hours survey effort a month, an additional 2x three hour surveys per month from November onwards were established at the same location in order to determine the status of these roost locations. These covered the dawn and dusk periods, either starting c.45 minutes before scheduled sunrise times, or finishing c.30 minutes after scheduled sunset times.
- 2.2.4 A total of 30 hours survey effort was carried out between November and March, and details are summarised in **Table C.2, ANNEX C**.

3. Results

3.1 Vantage Point Surveys

3.1.1 A summary of all flight activity recorded from VP surveys is shown in **Table 8B.3.1**. Note this accounts for multiple birds recorded on a single flight line (e.g. four birds recorded for 30 seconds = 120 seconds). The table indicates whether the bird is a qualifying feature of the Lewis and Peatlands SPA, is listed on Annex 1 of the Birds Directive, Schedule 1 of the Wildlife and Countryside Act (as amended) (W.C.A.) or is a species of principal importance on the Scottish Biodiversity list (SBL). The species status on the Birds of Conservation Concern List is displayed as green, amber or red (BoCC) (Eaton et al. 2015). Species have been arranged alphabetically as opposed to taxonomically for convenience.

Table 8B.3.1 Seconds Activity by Height Band from VP Flight Data October 2017-March 2018

	Number of flights	Status	Band A (0-20 m)	Band B and C (20-100 m)	Band D (200 m+)	Proportion of time at PCH %
Barnacle goose	1	Annex 1 Birds Directive Scottish Biodiversity List (SBL) Amber List	-	675	-	100
Golden eagle*	29	Lewis Peatlands SPA / Ramsar W.C.A Schedule 1,1A and A1 ¹ SBL. BoCC Green List	204	4,174	45	94
Golden plover	8	Lewis Peatlands SPA / Ramsar SBL BoCC Green List	1,495	855	-	36
Greenshank	1	Lewis Peatlands SPA / Ramsar BoCC Amber List	-	45	-	100
Greylag goose	40		10,731	9,553	576	46
Hen harrier*	54	Annex 1 Birds Directive Schedule 1A SBL, BoCC Red List	4,540	1,086	-	31
Merlin	4	Annex 1 Birds Directive SBL BoCC Red List	112	30	-	21
Peregrine	1	Annex 1 Birds Directive W.C.A. Schedule 1 BoCC Green List	15	15	-	50
Short-eared owl	1	Annex 1 Birds Directive BoCC Amber List	195	-	-	-

¹ Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) makes it an offence to recklessly or intentionally disturb any Schedule 1 species while they are nest building, or at a nest containing eggs or young, or to disturb the dependant young of such birds. Further protection is given to birds listed on Schedule 1A (it is an offence **at any time** to harass a white-tailed eagle, golden eagle, hen harrier or red kite) and Schedule A1 (it is an offence to damage a nest of a white-tailed eagle or golden eagle)

	Number of flights	Status	Band A (0-20 m)	Band B and C (20-100 m)	Band D (200 m+)	Proportion of time at PCH %
White-tailed eagle	24	Annex 1 Birds Directive W.C.A. Schedule 1, 1A and A1 SBL BoCC Red List	348	1,719	180	77
Whooper swan	9	Annex 1 Birds Directive SBL	-	4,931	-	100

The defined breeding season for golden eagle, golden plover, greenshank, peregrine and white tailed eagle all fall inside the reporting period of this document and so the correct breeding season status has been identified for these species.

- 3.1.2 Flights were recorded from a total of 11 species during VP surveys. The six most frequently recorded species were golden eagle, golden plover, greylag goose, hen harrier, white-tailed eagle and whooper swan.
- ▶ Twenty nine golden eagle flights were recorded during VP surveys, with 94 % occurring at PCH;
 - ▶ Eight golden plover flights were recorded, with 36% at PCH;
 - ▶ Greylag goose was recorded in flight 40 times, and 45 % of those flights were recorded at PCH;
 - ▶ Hen harrier was recorded in flight on 54 occasions. Time at PCH amounted to 31 % of all flight activity;
 - ▶ White-tailed eagle were recorded on 24 occasions, with 77 % of those flights at PCH;
 - ▶ Whooper swan was recorded in flight on 9 occasions. Time at PCH amounted to 100% of all flight activity; and
- 3.1.3 Due to the low levels of flight activity recorded, the following species are not discussed further (barnacle goose, greenshank, merlin, peregrine and short-eared owl).
- 3.1.4 Figures showing the distribution of flight activity for sensitive species (golden eagle and hen harrier) associated with winter roosting or breeding season nest locations (marked * in **Table 8B.3.1**) are presented within **Appendix 8D: Confidential Appendix**. Full details of all flight data are provided in **Table D.1, Annex D**. The majority of golden eagle activity took place outside of the 500m buffer and is likely attributable to a territory located to the south of the site - observations indicated that the majority of activity in this area were of adult birds, either singly or in pairs. Activity recorded to the north was probably associated with a second territory, although an immature bird was recorded twice in the areas. All golden eagle flights recorded in the north-west were to the north of the Pentland Road Wind Farm, with no birds spending time in close proximity to operational turbines. Hen harrier activity was recorded across the Site and observations indicated that the survey area was being used by at least five different birds, comprising an adult female, two adult males and at least two different ringtails. Note that ringtails refer to either adult female and immature hen harriers.
- 3.1.5 **Figures 8B.3.1a-d** shows the distribution of flights for golden plover, greylag goose, white-tailed eagle and whooper swan.
- 3.1.6 Golden plover activity was focussed along the southern edge of the Site boundary and the north-west areas of the Site boundary (**Figure 8B.3.1a**). The majority of the greylag goose flights were primarily orientated in an east-west direction following the route of the A858 (Pentland Road) across the Site (**Figure 8B.3.1b**). White-tailed eagle activity was focussed along the southern edge

of the Site boundary and the north-west areas of the Site boundary (**Figure 8B.3.1c**). There was no discernible spatial pattern to whooper swan flight activity, although the majority of flights were observed in October 2017 (**Figure 8.3.1d**).

3.1.7 Final species maps prepared for presentation within this report and confidential annex followed the following conventions:

- ▶ Flight lines split by height band:
 - Green = below 20 m;
 - Red = 20-200 m;
 - Blue = 200 m +.

3.2 Hen Harrier Roost Monitoring

3.2.1 Fourteen hen harrier flights were recorded (see **Appendix 8D: Confidential Appendix**). **Table D.2, Annex D** provides a summary of all flight lines recorded during the survey period. Flights within the Site and 500m Site boundary buffer at PCH accounted for 4% of recorded flight time (**Table 8B.3.2**).

3.2.2 Observations indicated that the roosts were being used by at least six different birds, comprising an adult female, two adult males and at least three ringtails.

Table 8B.3.2 Flight Line of Target Species Recorded during Hen Harrier Roost Monitoring Surveys

	Total number of flights recorded	Time (seconds) at height band A (0-20 m)	Time (seconds) at height Band B (20-100 m)	Time (seconds) at height Band C (100-200 m)	Time (seconds) at height band D (200 m+)	Proportion of time at risk height % (Bands B and C)
Golden plover	1	15	-	-	-	0
Greylag goose	1	-	360	-	-	100
Hen harrier*	14	1350	60	-	-	4
Merlin	2	60	-	-	-	0
Short-eared owl	1	105	-	-	-	0
White-tailed eagle	1	-	90	-	-	100

4. Conclusion

- 4.1.1 Survey results show that 11 species were recorded during VP surveys. The six most frequently recorded species were hen harrier, greylag goose, golden eagle, white-tailed eagle and golden plover. All species excluding greylag goose are listed on Annex 1 of the Birds Directive, whilst three species are on Schedule 1a or A1 of the Wildlife and Countryside Act (as amended), receiving special protection outside of the breeding season (golden eagle, white-tailed eagle and hen harrier).
- 4.1.2 Hen harrier appear to have colonised the area as a breeding bird species, first being recorded in 2015 and with 4 pairs breeding in 2016 and it is apparent that they are present during the winter period, with evidence of up to six individuals utilising the area for foraging and roosting.

Bibliography

Challis, A., Wilson, M.W., Holling, M., Roos, S., Stevenson, A. & Stirling-Aird, P. (2018). Scottish Raptor Monitoring Scheme Report 2016. BTO Scotland, Stirling.

Lewis Wind Power (2016a). Stornoway Wind Farm – Ornithology Desk-study and Survey Scope. TUV SUD PMSS.

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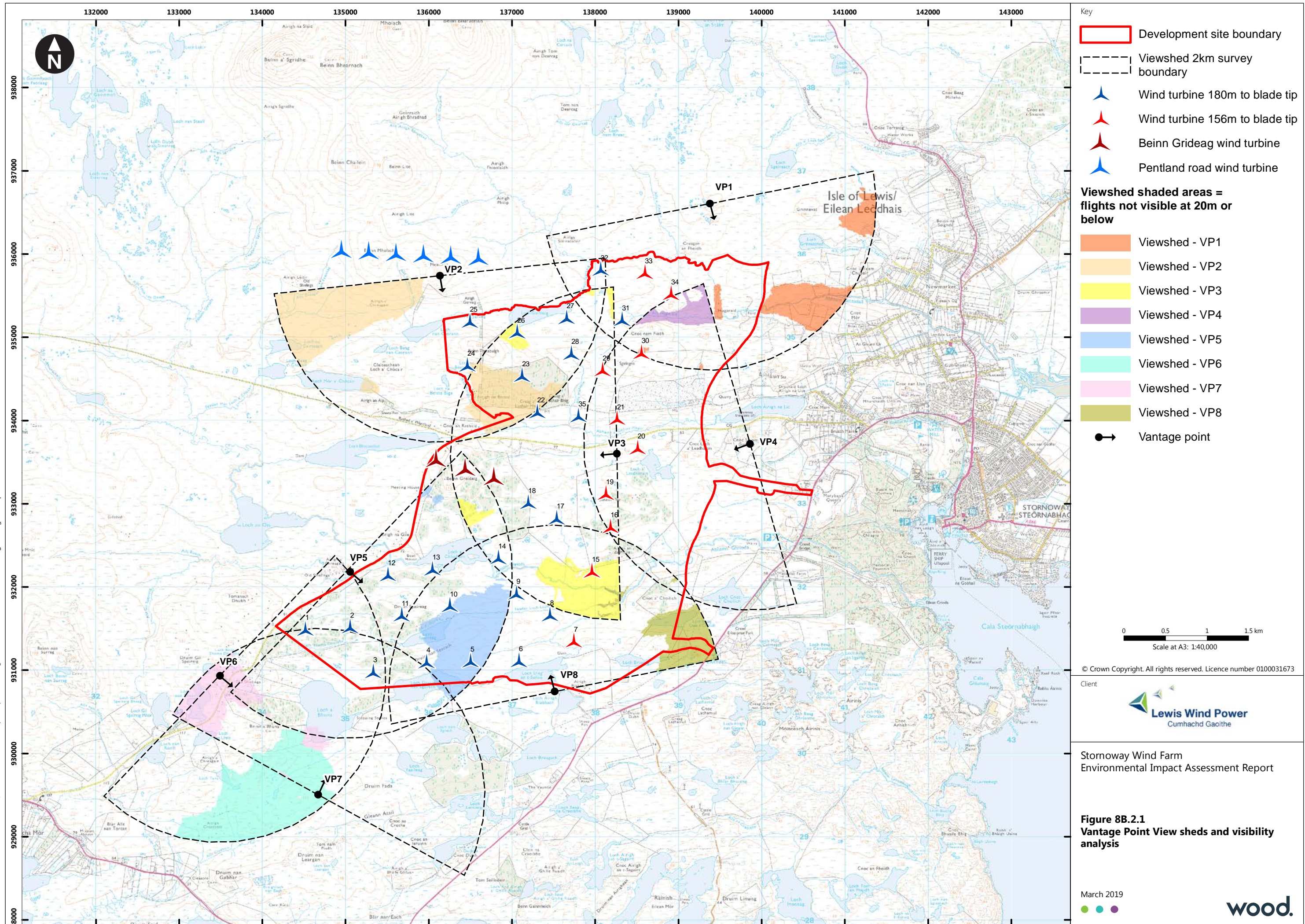
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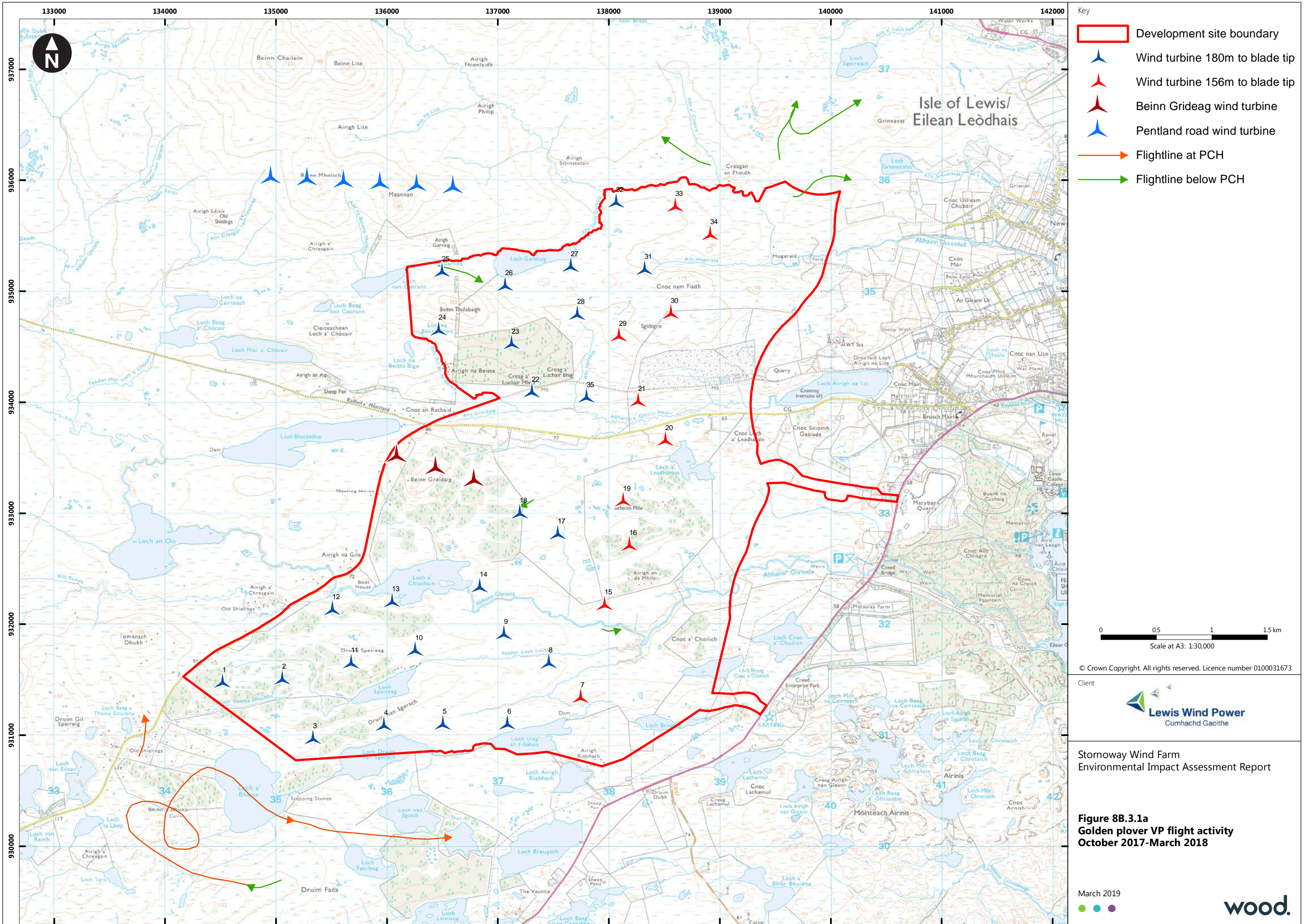


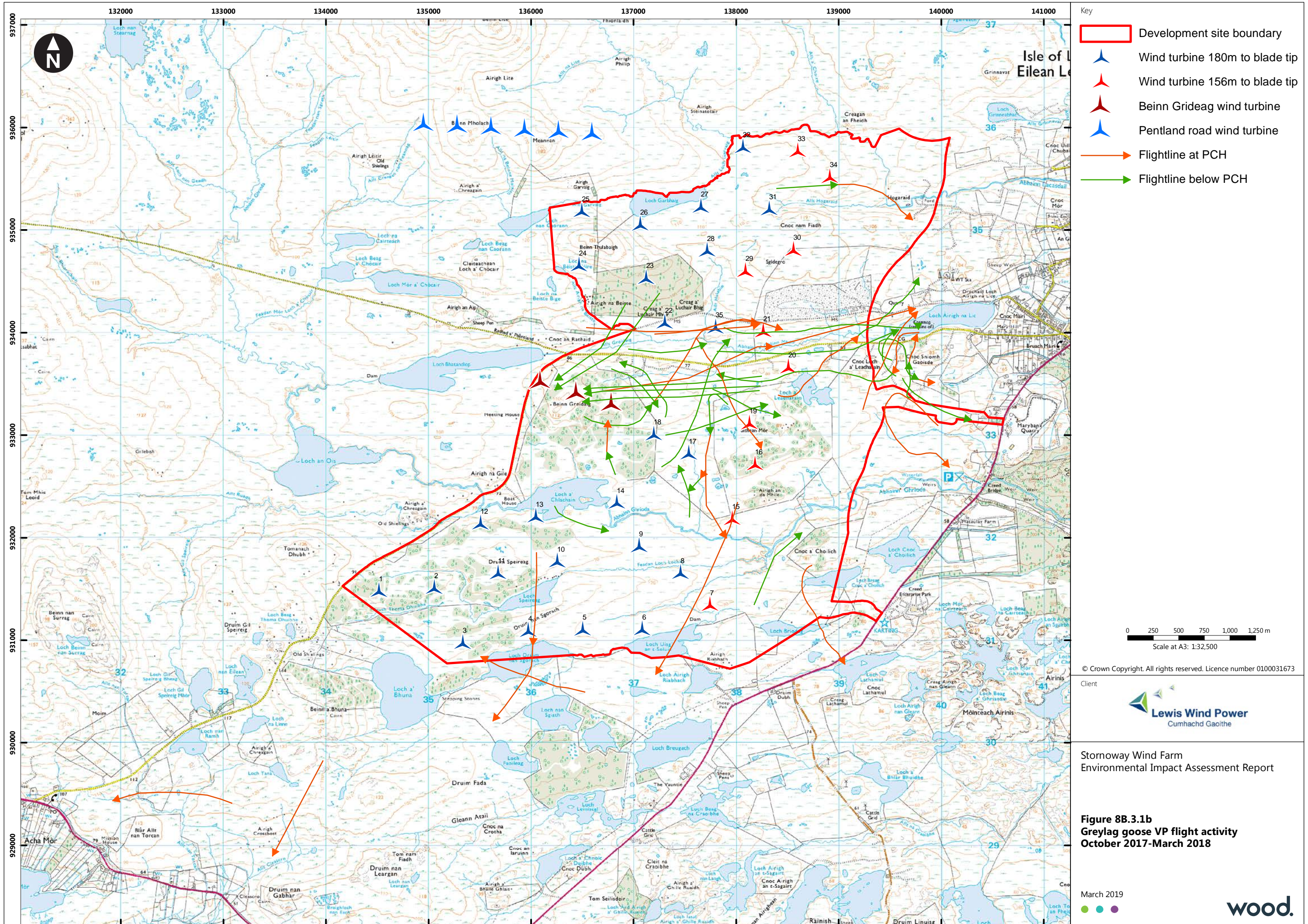
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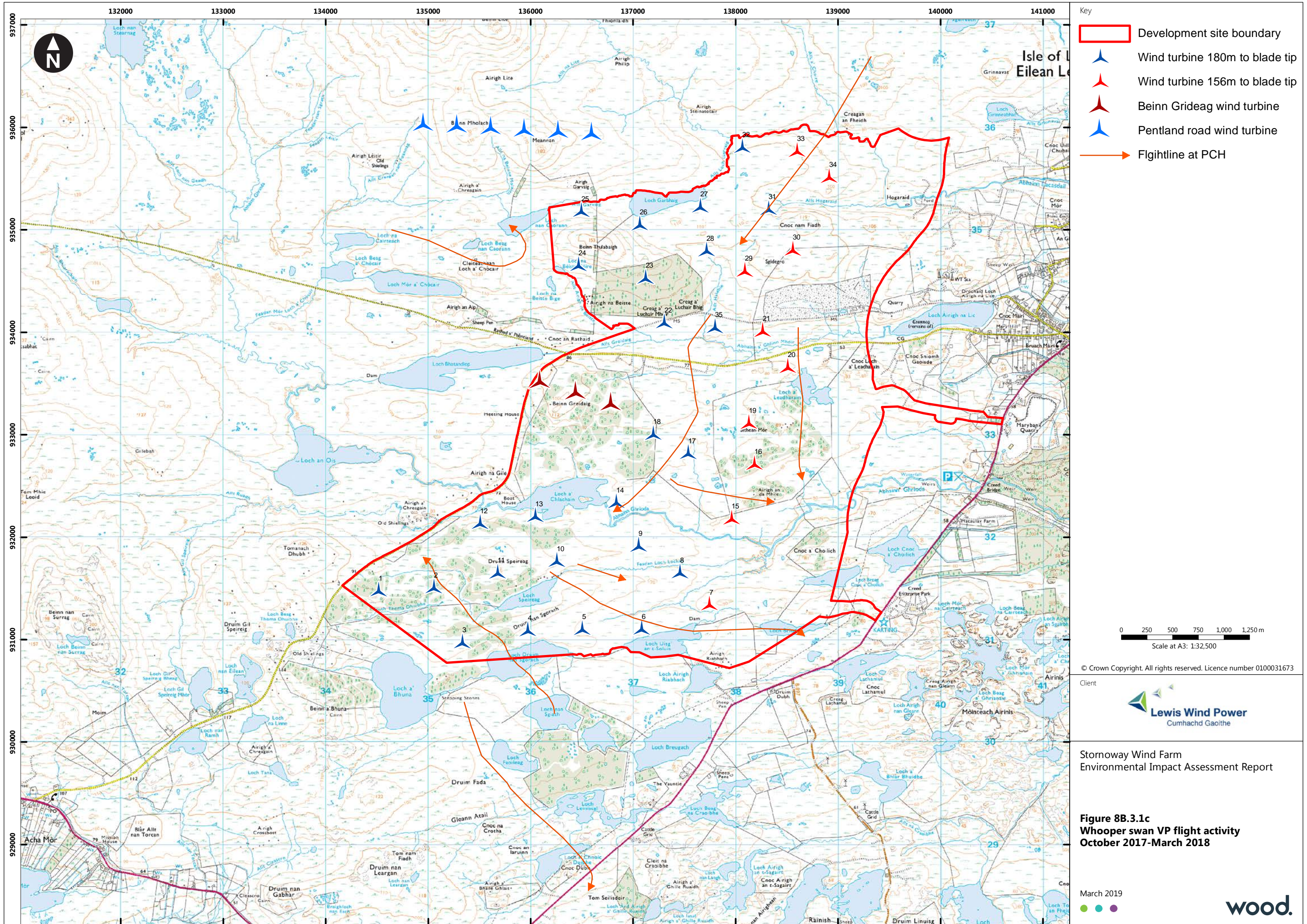
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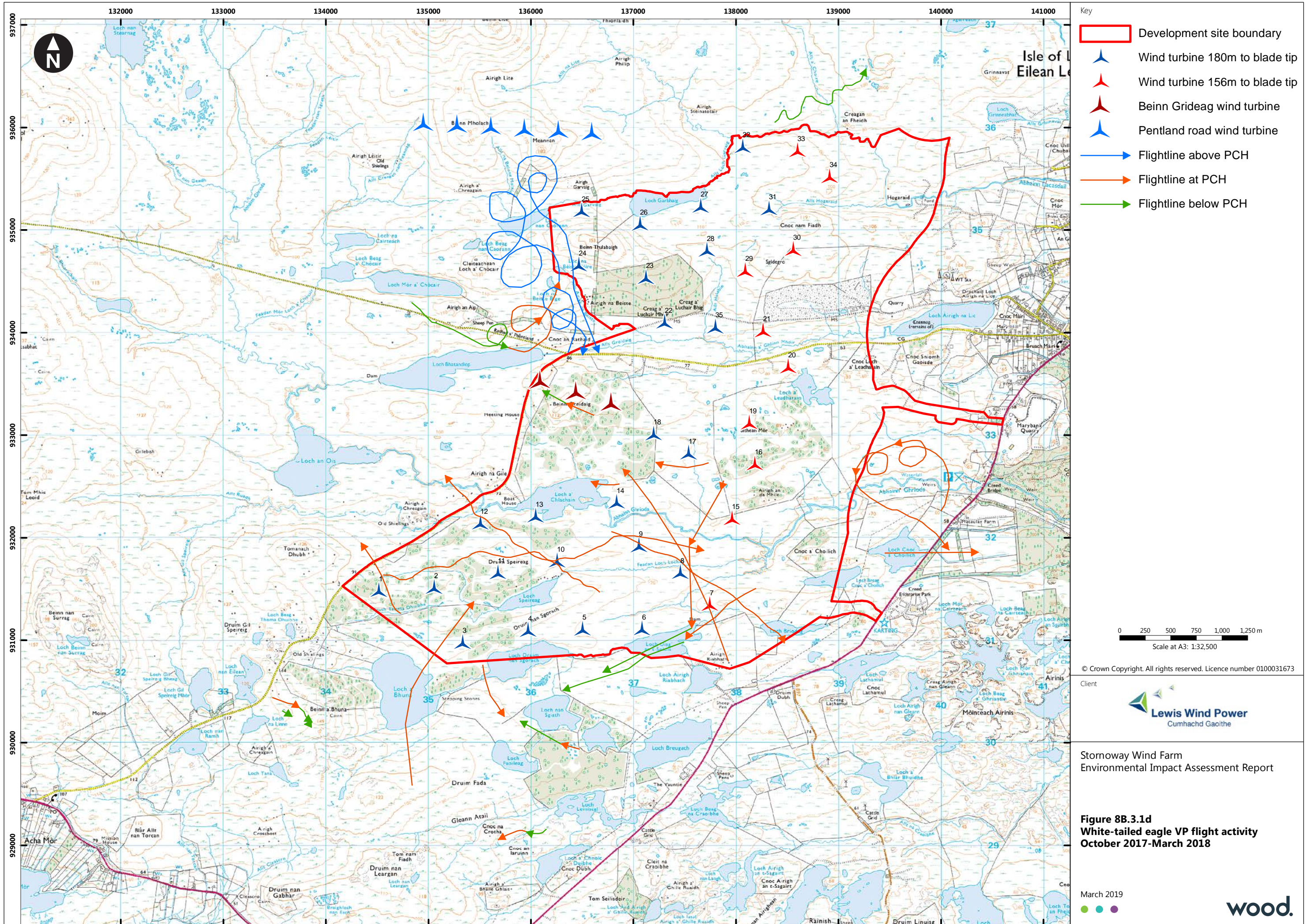












Annex B

Scientific Names



Species have been arranged alphabetically as opposed to taxonomically for convenience.

Species	Scientific name
Barnacle goose	Branta leucopsis
Golden eagle	Aquila chrysaetos
Golden plover	Pluvialis apricaria
Greenshank	Tringa nebularia
Greylag goose	Anser anser
Hen harrier	Circus cyaneus
Merlin	Falco columbarius
Peregrine	Falco peregrinus
Short-eared owl	Asio flammeus
White tailed eagle	Haliaeetus albicilla
Whooper swan*	Cygnus cygnus





Annex C

Survey Effort



Table C.1 Vantage Point Survey Effort

Date	VP	Observer	Start	Finish	Total time (hrs:mm)	Weather summary
11/10/2017	4	ATY	09:35	12:35	03:00	Dry, Wind F4 W, Cloud Cover 3-4/8, Visibility >3km, Temp 11c.
11/10/2017	6	ATY	13:30	16:30	03:00	Drizzle, Wind F4-5 W, Cloud Cover 3-4/8, Visibility >3km, Temp 10-11c.
14/10/2017	3	ATY	10:10	13:10	03:00	Dry, Wind F5 SW, Cloud Cover 8/8, Visibility >3km, Temp 12c.
14/10/2017	5	ATY	14:10	17:10	03:00	Dry, Wind F4-5 SW, Cloud Cover 8/8, Visibility >3km, Temp 11-12c.
16/10/2017	2	ATY	11:05	14:05	03:00	Light showers, Wind F3-5 E-NE, Cloud Cover 7-8/8, Visibility >3km, Temp 9-10c.
16/10/2017	7	ATY	15:50	18:50	03:00	Light to heavy showers, Wind F6-7 NE-E, Cloud Cover 8/8, Visibility >3km, Temp 9c.
20/10/2017	4	ATY	16:00	19:00	03:00	Light showers, Wind F3-4 NE-E, Cloud Cover 7-8/8, Visibility >3km, Temp 9-10c.
20/10/2017	8	ATY	12:20	15:20	03:00	Dry, Wind F1-2 NW-N, Cloud Cover 5-8/8, Visibility >3km, Temp 10-11c.
21/10/2017	1	ATY	07:55	10:55	03:00	Light showers, Wind F3-4 SE-E, Cloud Cover 6-8/8, Visibility >3km, Temp 11-12c.
21/10/2017	1	ATY	11:30	14:30	03:00	Light showers, Wind F2-3 SE-NE, Cloud Cover 6-7/8, Visibility >3km, Temp 11-12c.
23/10/2017	2	ATY	11:40	14:40	03:00	Light showers, Wind F4-5 SW, Cloud Cover 4-6/8, Visibility >3km, Temp 11c.
23/10/2017	6	ATY	07:30	10:30	03:00	Light showers, Wind F4-6 S-SW, Cloud Cover 6-8/8, Visibility >3km, Temp 10-11c.
24/10/2017	3	ATY	07:45	10:45	03:00	Light showers, Wind F4-5 S-SW, Cloud Cover 5-8/8, Visibility >3km, Temp 9c.
24/10/2017	6	ATY	15:50	18:50	03:00	Light showers, Wind F5 SW, Cloud Cover 3-4/8, Visibility >3km, Temp 11c.
26/10/2017	2	ATY	08:15	11:15	03:00	Dry, Wind F4 NW, Cloud Cover 3-4/8, Visibility >3km, Temp 11c.
26/10/2017	3	ATY	14:25	17:25	03:00	Light showers, Wind F4 NW, Cloud Cover 3-4/8, Visibility >3km, Temp 9-10c.

Date	VP	Observer	Start	Finish	Total time (hrs:mm)	Weather summary
28/10/2017	7	ATY	08:15	11:15	03:00	Light showers, Wind F6 W-NW, Cloud Cover 8/8, Visibility >3km, Temp 11c.
28/10/2017	5	ATY	12:30	15:30	03:00	Light showers, Wind F6 W-NW, Cloud Cover 8/8, Visibility >3km, Temp 11c.
29/10/2017	8	ATY	07:25	10:25	03:00	Dry, Wind F3-4 N, Cloud Cover 5-7/8, Visibility >3km, Temp 7-8c.
29/10/2017	4	ATY	11:40	14:40	03:00	Dry, Wind F3 N, Cloud Cover 5-7/8, Visibility >3km, Temp 8c.
30/10/2017	5	PCL	09:50	12:50	03:00	Light showers, Wind F1-4 SW-S, Cloud Cover 7-8/8, Visibility >3km, Temp 5-8c.
30/10/2017	8	PCL	13:45	16:45	03:00	Dry, Wind F3-4 SW, Cloud Cover 6-8/8, Visibility >3km, Temp 9c.
31/10/2017	1	ATY	13:40	16:40	03:00	Drizzle, Wind F4-5 SW, Cloud Cover 8/8, Visibility >3km, Temp 12-13c.
31/10/2017	5	PCL	08:05	11:05	03:00	Light to heavy showers, Wind F2-4 SW, Cloud Cover 8/8, Visibility c.3km, Temp 11-12c.
31/10/2017	7	PCL	12:30	15:30	03:00	Dry, Wind F3 SW, Cloud Cover 7-8/8, Visibility c.3km, Temp 12c.
01/11/2017	4	PCL	07:50	10:50	03:00	Light showers, Wind F4-5 W, Cloud Cover 8/8, Visibility >3km, Temp 10-11c.
01/11/2017	6	PCL	13:25	16:25	03:00	Light to heavy showers, Wind F4-5 NW, Cloud Cover 7-8/8, Visibility c.3km, Temp 9-11c.
02/11/2017	8	PCL	08:35	11:35	03:00	Dry, Wind F1-3 W-NW, Cloud Cover 5-7/8, Visibility >3km, Temp 5-7c.
02/11/2017	2	PCL	13:05	16:05	03:00	Dry, Wind F3 SW, Cloud Cover 7/8, Visibility >3km, Temp 7-8c.
03/11/2017	3	PCL	11:10	14:10	03:00	Dry, Wind F3-4 SW, Cloud Cover 6-8/8, Visibility >3km, Temp 9c.
04/11/2017	6	ATY	07:40	10:40	03:00	Light showers, Wind F4 SW, Cloud Cover 6-7/8, Visibility >3km, Temp 7-8c.
04/11/2017	4	ATY	14:25	17:25	03:00	Light showers, Wind F4 SW-W, Cloud Cover 6-8/8, Visibility >3km/1-3km, Temp 7c.
07/11/2017	3	ATY	07:35	10:35	03:00	Dry, Wind F4 SW, Cloud Cover 4-5/8, Visibility >3km, Temp 7-8c.

Date	VP	Observer	Start	Finish	Total time (hrs:mm)	Weather summary
07/11/2017	7	ATY	14:10	17:10	03:00	Dry, Wind F4 SW, Cloud Cover 4-2/8, Visibility >3km, Temp 7c.
12/11/2017	8	ATY	07:55	10:55	03:00	Dry, Wind F5-4 N, Cloud Cover 5-7/8, Visibility >3km, Temp 6c.
12/11/2017	5	ATY	14:05	17:05	03:00	Light showers, Wind F4-3 N, Cloud Cover 3-4/8, Visibility >3km, Temp 6-5c.
14/11/2017	5	PRO	08:10	11:10	03:00	Light showers, Wind F2-3 SW, Cloud Cover 3-6/8, Visibility >3km, Temp 8c.
14/11/2017	8	PRO	12:30	15:30	03:00	Light showers, Wind F4 SW, Cloud Cover 4-6/8, Visibility >3km, Temp 9c.
15/11/2017	6	PRO	12:30	15:30	03:00	Light to heavy showers, Wind F4-6 S, Cloud Cover 7-8/8, Visibility >3km/1-3km, Temp 5c.
15/11/2017	7	PRO	08:40	11:40	03:00	Dry, Wind F2 S, Cloud Cover 3-4/8, Visibility >3km, Temp 4-5c.
16/11/2017	3	PRO	13:05	16:05	03:00	Light showers, Wind F6 (gusting 7) W, Cloud Cover 4-6/8, Visibility >3km/1-3km, Temp 2c.
16/11/2017	4	PRO	09:30	12:30	03:00	Light showers, Wind F6 (gusting 7) W, Cloud Cover 5-6/8, Visibility >3km/1-3km, Temp 1-3c.
22/11/2017	1	ATY	08:15	11:15	03:00	Light showers, Wind F5-4, Cloud Cover 3-8/8, Visibility >3km, Temp 4-5c.
22/11/2017	1	ATY	13:10	16:10	03:00	Dry, Wind F3-2 SW-SE, Cloud Cover 6-3/8, Visibility >3km, Temp 5-4c.
23/11/2017	7	ATY	11:15	14:15	03:00	Light showers, Wind F4-5 NW, Cloud Cover 7-8/8, Visibility >3km, Temp 4c, Snow lying on site.
25/11/2017	2	ATY	08:00	11:00	03:00	Light hail/snow showers, Wind F6 NW, Cloud Cover 8/8, Visibility >3km/1-3km, Temp 3-4c, Ground Frost.
25/11/2017	2	ATY	11:40	14:40	03:00	Light showers, Wind F6-7 NW, Cloud Cover 8-6/8, Visibility >3km, Temp 4-5c, Ground Frost.
26/11/2017	1	ATY	10:20	13:20	03:00	Light showers, Wind F3-4 NW-SW, Cloud Cover 8/8, Visibility >3km, Temp 4-5c.
18/12/2017	2	PRO	11:50	14:50	03:00	Light showers at end of VP, Wind F5-6 SW, Cloud Cover 4-8/8, Visibility >3km/1-3km, Temp 4-5c.
19/12/2017	6	PRO	09:10	12:10	03:00	Light showers at end of VP, Wind F6 SW, Cloud Cover 8/8, Visibility >3km, Temp 4c.

Date	VP	Observer	Start	Finish	Total time (hrs:mm)	Weather summary
20/12/2017	8	PRO	08:55	11:55	03:00	Dry, Wind F2-3 SW, Cloud Cover 3-6/8, Visibility >3km, Temp 3-5c.
21/12/2017	7	PRO	09:00	12:00	03:00	Dry, Wind F1-2 SW, Cloud Cover 3-6/8, Visibility >3km, Temp 4-6c.
21/12/2017	7	PRO	12:30	15:30	03:00	Dry, Wind F3 SW, Cloud Cover 2/8, Visibility >3km, Temp 5-6c.
22/12/2017	4	PRO	09:00	12:00	03:00	Dry, Wind F5-6 SW, Cloud Cover 6-8/8, Visibility >3km/1-3km, Temp 4c.
22/12/2017	6	PRO	12:45	15:45	03:00	Dry, Wind F6 SW, Cloud Cover 6-8/8, Visibility >3km/1-3km, Temp 5c.
11/12/2017	7	ATY	13:10	16:10	03:00	Dry, Wind F4-5 N, Cloud Cover 3-4/8, Visibility >3km, Temp 3-4c, ground frost.
13/12/2017	5	ATY	09:05	12:05	03:00	Hail showers during hour 1, Wind F4-5 W, Cloud Cover 6-7/8, Visibility >3km, Temp 4c, ground frost.
13/12/2017	4	ATY	13:15	16:15	03:00	Snow showers from start into hour 1, Wind F4-5 W, Cloud Cover 6/8, Visibility >3km, ground frost.
15/12/2017	8	ATY	11:15	14:15	03:00	Rain showers during hours 1 & 3, Wind F5-6 NW, Cloud Cover 5-8/8, Visibility >3km, Temp 2-4c, ground frost.
23/12/2017	5	ATY	13:20	16:20	03:00	Rain showers during hour 2, Wind F4-6 SW, Cloud Cover 8/8, Visibility >3km, Temp 10-11c.
15/01/2018	6	PCL	09:10	12:10	03:00	Light to heavy sleet showers, Wind F4 W, Cloud Cover 4-7/8, Visibility >3km, Temp 3-2c.
15/01/2018	5	PCL	12:40	15:40	03:00	Light to heavy hail showers, Wind F4-6 W, Cloud Cover 6/8, Temp 2-1c.
16/01/2018	8	PCL	09:05	12:05	03:00	Light to heavy hail and snow showers, Wind F3-4 W, Cloud Cover 5-8/8, Visibility 1-3km, Temp 0c, all day frost and snow on site.
16/01/2018	8	PCL	12:35	15:35	03:00	Light hail and snow showers, Wind F2-3 W, Cloud Cover 4-7/8, Visibility 1-3km, Temp 1c to -1c, all day frost and snow on site.
17/01/2018	2	PCL	09:45	12:45	03:00	Heavy sleet and snow showers, Wind F3-5 W, Cloud Cover 3-7/8, Visibility >3km, Temp 1-2c, all day frost and snow on site.
17/01/2018	2	PCL	13:15	16:15	03:00	Light sleet showers, Wind F3 W, Cloud Cover 4-7/8, Visibility >3km, Temp 1-2c, all day frost and snow on site.

Date	VP	Observer	Start	Finish	Total time (hrs:mm)	Weather summary
18/01/2018	7	PCL	09:45	12:45	03:00	Light sleet and snow showers, Wind F2 W, Cloud Cover 5-7/8, Visibility >3km, Temp 0-1c, all day frost and snow on site.
18/01/2018	7	PCL	13:15	16:15	03:00	Light hail showers, Wind F1-2 SW-W, Cloud Cover 3-4/8, Visibility >3km, Temp 0c to -1c, all day frost and snow on site.
19/01/2018	3	PCL	09:05	12:05	03:00	Light snow showers, Wind F1-2 SW, Cloud Cover 7-8/8, Visibility >3km, Temp 0c, all day frost and snow on site.
09/01/2018	4	ATY	10:15	13:15	03:00	Dry, Wind F4 SE, Cloud Cover 3-5/8, Visibility >3km, Temp 5-6c.
09/01/2018	3	ATY	13:45	16:45	03:00	Dry, Wind F4-5 SE, Cloud Cover 5-8/8, Visibility >3km, Temp 6c.
10/01/2018	1	ATY	10:10	13:10	03:00	Dry, Wind F3 W, Cloud Cover 7-8/8, Visibility >3km, Temp 6-7c.
10/01/2018	1	ATY	13:40	16:40	03:00	Dry, Wind F2-3 W, Cloud Cover 7-8/8, Visibility >3km, Temp 6-5c.
11/01/2018	6	ATY	10:20	13:20	03:00	Dry, Wind F2 SE, Cloud Cover 6-3/8, Visibility >3km, Temp 5c.
11/01/2018	8	ATY	13:55	16:55	03:00	Dry, Wind F3 SE, Cloud Cover 6-8/8, Visibility >3km, Temp 6-5c.
12/01/2018	2	ATY	08:30	11:30	03:00	Dry, Wind F5 S, Cloud Cover 8/8, Visibility >3km, Temp 6c.
12/01/2018	3	ATY	12:00	15:00	03:00	Dry, Wind F6 S, Cloud Cover 8/8, Visibility >3km, Temp 7c.
13/01/2018	1	ATY	08:35	11:35	03:00	Light showers, Wind F5 S, Cloud Cover 8/8, Visibility >3km, Temp 6c.
13/01/2018	2	ATY	13:20	16:20	03:00	Light showers, Wind F5 S, Cloud Cover 8/8, Visibility >3km, Temp 7c.
14/01/2018	5	ATY	10:25	13:25	03:00	Light to heavy showers, Wind F6-7 SW, Cloud Cover 8/8, Visibility c.3km, Temp 8c.
15/01/2018	3	ATY	09:10	12:10	03:00	Light showers, Wind F5 W, Cloud Cover 7-4/8, Visibility >3km, Temp 4c.
23/01/2018	4	ATY	09:00	12:00	03:00	Light showers, Wind F4 SW, Cloud Cover 6-8/8, Visibility >3km, Temp 7c.

Date	VP	Observer	Start	Finish	Total time (hrs:mm)	Weather summary
23/01/2018	4	ATY	12:30	15:30	03:00	Light showers, Wind F4 SW, Cloud Cover 7-8/8, Visibility >3km, Temp 7c.
24/01/2018	8	ATY	13:15	16:15	03:00	Light showers, Wind F4-5 W, Cloud Cover 5-7/8, Visibility >3km, Temp 6c.
25/01/2018	7	ATY	08:55	11:55	03:00	Light showers, Wind F4 SW, Cloud Cover 8/8, Visibility >3km, Temp 6c.
25/01/2018	5	ATY	13:45	16:45	03:00	Light showers, Wind F1-4 SW, Cloud Cover 8/8, Visibility >3km, Temp 6c.
26/01/2018	1	ATY	10:25	13:25	03:00	Dry, Wind F2-4 NW, Cloud Cover 3-4/8, Visibility >3km, Temp 4c.
26/01/2018	1	ATY	13:55	16:55	03:00	Dry, Wind F1-3 NW, Cloud Cover 3-5/8, Visibility >3km, Temp 3-4c.
29/01/2018	4	ATY	14:15	17:15	03:00	Drizzle, Wind F5 W, Cloud Cover 5-8/8, Visibility >3km, Temp 5c.
30/01/2018	6	ATY	12:15	15:15	03:00	Light to heavy showers, Wind F6 SW, Cloud Cover 8/8, Visibility >3km, Temp 7c.
31/01/2018	5	ATY	08:50	11:50	03:00	Light showers, Wind F5-6 NW, Cloud Cover 7-8/8, Visibility >3km, Temp 4-5c.
31/01/2018	3	ATY	14:25	17:25	03:00	Dry, Wind F5-6 NW, Cloud Cover 7-8/8, Visibility >3km, Temp 4c.
02/02/2018	1	ATY	08:25	11:25	03:00	Dry, Wind F2 NW, Cloud Cover 1-2/8, Visibility >3km, Temp?c.
02/02/2018	3	ATY	12:35	15:35	03:00	Dry, Wind F2-3 SW, Cloud Cover 4-6/8, Visibility >3km, Temp 5c.
04/02/2018	2	ATY	08:55	11:55	03:00	Dry, Wind F1-2 NE, Cloud Cover 1/8, Visibility >3km, Temp 6c.
04/02/2018	6	ATY	14:35	17:35	03:00	Dry, Wind F1-2 SW, Cloud Cover 0-1/8, Visibility >3km, Temp 6c.
05/02/2018	5	ATY	11:05	14:05	03:00	Dry to heavy showers, Wind F6 SW, Cloud Cover 8/8, Visibility >3km, Temp 6c.
05/02/2018	3	ATY	14:35	17:35	03:00	Dry to heavy showers, Wind F6 SW, Cloud Cover 8/8, Visibility >3km, Temp 6c.
12/02/2018	6	PCL	09:15	12:15	03:00	Mainly dry with one heavy shower, Wind F3-4 DE, Cloud Cover 2-4/8, Visibility >3km, Temp 2-4c, all day frost and snow on site.

Date	VP	Observer	Start	Finish	Total time (hrs:mm)	Weather summary
12/02/2018	7	PCL	13:15	16:15	03:00	Dry, Wind F2-4 S, Cloud Cover 3-6/8, Visibility >3km, Temp 1-2c, all day frost and snow on site.
13/02/2018	1	PCL	10:00	13:00	03:00	Dry, Wind F2-4 W-SW, Cloud Cover 2-6/8, Visibility >3km, Temp 1-2c, all day frost and snow on site.
15/02/2018	5	PCL	08:55	11:55	03:00	Light to heavy showers, Wind F6-8 SW, Cloud Cover 8-7/8, Visibility >3km, Temp 4-5c.
15/02/2018	2	PCL	12:40	15:40	03:00	Light to heavy showers, Wind F5-6 W, Cloud Cover 8-6/8, Visibility c.3km, Temp 5c.
16/02/2018	8	PCL	08:50	11:50	03:00	Dry, Wind F2-3 SW-S, Cloud Cover 1-5/8, Visibility >3km, Temp 2-4c, ground frost.
16/02/2018	8	PCL	12:20	15:20	03:00	Mainly dry with one light shower, Wind F2-4 S-SW, Cloud Cover 6-8/8, Visibility >3km, Temp 4c.
16/02/2018	6	ATY	14:40	17:40	03:00	Light showers, Wind F5 S, Cloud Cover 8/8, Visibility >3km, Temp 3-4c.
17/02/2018	3	ATY	07:50	10:50	03:00	Light showers, Wind F4-5 SW, Cloud Cover 8/8, Visibility >3km, Temp 4c.
17/02/2018	2	ATY	14:40	17:40	03:00	Light drizzle, Wind F3-4 W, Cloud Cover 7-8/8, Visibility >3km, Temp 4-5c.
18/02/2018	4	ATY	07:45	10:45	03:00	Light drizzle, Wind F4 S, Cloud Cover 8/8, Visibility >3km, Temp 5-6c.
18/02/2018	1	ATY	14:30	17:30	03:00	Light showers, Wind F4 S, Cloud Cover 8/8, Visibility >3km, Temp 5-6c.
19/02/2018	8	ATY	14:40	17:40	03:00	Light DRIZZLE, Wind F3 SW, Cloud Cover 8/8, Visibility >3km, Temp 7-9c.
20/02/2018	2	ATY	07:55	10:55	03:00	Dry, Wind F3-4 NW, Cloud Cover 2-4/8, Visibility >3km, Temp 4-5c.
20/02/2018	3	ATY	12:35	15:35	03:00	Dry, Wind F3 NW, Cloud Cover 3-5/8, Visibility >3km, Temp 7c.
21/02/2018	1	ATY	08:20	11:20	03:00	Dry, Wind F2 S, Cloud Cover 2-7/8, Visibility >3km, Temp 4-5c.
21/02/2018	6	ATY	13:20	16:20	03:00	Dry, Wind F3 S, Cloud Cover 3-7/8, Visibility >3km, Temp 4-5c.
22/02/2018	7	ATY	08:25	11:25	03:00	Dry to light drizzle, Wind F4-5 S, Cloud Cover 6-8/8, Visibility >3km, Temp 5c.

Date	VP	Observer	Start	Finish	Total time (hrs:mm)	Weather summary
22/02/2018	7	ATY	14:15	17:15	03:00	Dry, Wind F4-5 S, Cloud Cover 7-8/8, Visibility >3km, Temp 5-6c.
26/02/2018	4	ATY	11:20	14:20	03:00	Dry to light drizzle, Wind F3-4 SE, Cloud Cover 1-2/8, Visibility >3km, Temp 3-4c.
26/02/2018	4	ATY	14:50	17:50	03:00	Dry, Wind F3 SE, Cloud Cover 1-2/8, Visibility >3km, Temp 2-3c.
27/02/2018	5	ATY	15:05	18:05	03:00	Dry to light drizzle, Wind F4-5 E, Cloud Cover 3-6/8, Visibility >3km, Temp 4-5c.
12/03/2018	6	PRO	08:55	11:55	03:00	Dry, Wind F1-4 E, Cloud Cover 3-4/8, Visibility >3km, Temp 6c.
12/03/2018	8	PRO	14:35	17:35	03:00	Dry, Wind F3 E, Cloud Cover 4/8, Visibility >3km, Temp 6-4c.
13/03/2018	3	PRO	07:35	10:35	03:00	Dry, Wind F2-3 SE, Cloud Cover 4/8, Visibility >3km, Temp 4-5c.
13/03/2018	2	PRO	12:30	15:30	03:00	Dry, Wind F4-5 S, Cloud Cover 4-6/8, Visibility >3km, Temp 5c.
14/03/2018	1	PRO	09:10	12:10	03:00	Light showers, Wind F6 SE, Cloud Cover 7/8, Visibility >3km, Temp 4-5c.
14/03/2018	5	PRO	14:15	17:15	03:00	Light showers, Wind F6 SE-E, Cloud Cover 7/8, Visibility 1-3km, Temp 5c.
15/03/2018	8	PRO	07:20	10:20	03:00	Dry, Wind F6-7 SE, Cloud Cover 8/8, Visibility >3km, Temp 4c.
16/03/2018	7	PRO	07:10	10:10	03:00	Dry, Wind F7 SE, Cloud Cover 4/8, Visibility >3km, Temp 4c.
16/03/2018	7	PRO	10:40	13:40	03:00	Dry, Wind F7 SE, Cloud Cover 4-5/8, Visibility >3km, Temp 5c.
17/03/2018	6	ATY	12:30	15:30	03:00	Dry, Wind F5-4 SE, Cloud Cover 2/8, Visibility >3km, Temp 3-4c.
17/03/2018	6	ATY	16:00	19:00	03:00	Dry, Wind F4 SE, Cloud Cover 1-2/8, Visibility >3km, Temp 3c.
18/03/2018	1	ATY	12:25	15:25	03:00	Dry, Wind F4 E, Cloud Cover 6-4/8, Visibility >3km, Temp 5c.
18/03/2018	1	ATY	15:55	18:55	03:00	Dry, Wind F4 E, Cloud Cover 4-1/8, Visibility >3km, Temp 5-4c.

Date	VP	Observer	Start	Finish	Total time (hrs:mm)	Weather summary
19/03/2018	4	ATY	11:35	14:35	03:00	Dry, Wind F1-2 NE-N, Cloud Cover 3/8, Visibility >3km, Temp 5c.
19/03/2018	4	ATY	15:05	18:05	03:00	Light showers to dry, Wind F3 N, Cloud Cover 3-6/8, Visibility >3km, Temp 5-4c.
20/03/2018	2	ATY	15:40	18:40	03:00	Dry, Wind F3 W, Cloud Cover 7/8, Visibility >3km, Temp 4-5c.
25/03/2018	4	ATY	07:35	10:35	03:00	Light showers, Wind F4 NW, Cloud Cover 5-6/8, Visibility >3km, Temp 7c.
25/03/2018	7	ATY	16:20	19:20	03:00	Light showers, Wind F4-3 NW, Cloud Cover 4-3/8, Visibility >3km, Temp 7c.
26/03/2018	2	ATY	07:15	10:15	03:00	Dry, Wind F2 SW, Cloud Cover 3-2/8, Visibility >3km, Temp 6-7c.
26/03/2018	5	ATY	17:00	20:00	03:00	Light showers, Wind F3 SE, Cloud Cover 5-8/8, Visibility >3km, Temp 6c.
28/03/2018	3	ATY	12:35	15:35	03:00	Light showers, Wind F2 W, Cloud Cover 7-8/8, Visibility >3km, Temp 6c.
28/03/2018	3	ATY	16:45	19:45	03:00	Light showers, Wind F2 SW, Cloud Cover 6-7/8, Visibility >3km, Temp 5-4c.
29/03/2018	5	ATY	07:00	10:00	03:00	Dry, Wind F2 SW-S, Cloud Cover 2/8, Visibility >3km, Temp 2-5c.
29/03/2018	8	ATY	17:10	20:10	03:00	Dry, Wind F3-5 E, Cloud Cover 6-4/8, Visibility >3km, Temp 7-6c.

Table C.2 Hen Harrier Roost Monitoring Effort

Date	VP	Observer	Start	Finish	Total time (hrs:mm)	Weather summary
24/11/2017	3	ATY	07:30	10:30	03:00	Light hail showers, Wind F4-5 W, Cloud Cover 3-4/8, Visibility >3km/1-3km, Temp 2-3c, Snow Lying on Site, Ground Frost.
28/11/2017	3	ATY	13:25	16:25	03:00	Dry, Wind F5-6 N, Cloud Cover 3-6/8, Visibility >3km, Temp 4-5c.
20/12/2017	3	PRO	13:00	16:00	03:00	Dry, Wind F5 SW, Cloud Cover 7-8/8, Visibility >3km, Temp 5c.
12/12/2017	3	ATY	07:55	10:55	03:00	Hail showers during hour 2, Wind F3-4 SW, Cloud Cover 6-8/8, Visibility >3km, Temp 2-4c, ground frost.
22/01/2018	3	ATY	14:25	17:25	03:00	Dry, Wind F4-5 W, Cloud Cover 8/8, Visibility >3km, Temp 6c.
30/01/2018	3	ATY	07:35	10:35	03:00	Light showers, Wind F4-5 SW, Cloud Cover 8/8, Visibility >3km, Temp 5-6c.
13/02/2018	3	PCL	14:50	17:50	03:00	Mainly dry with a few heavy snow showers, Wind F3-5 SW, Cloud Cover 3-6/8, Visibility 1km to >3km, Temp 4-0c, snow on site.
14/02/2018	3	PCL	15:00	18:00	03:00	Dry, Wind F5-8 SW, Cloud Cover 3-7/8, Visibility >3km, Temp 5-4c.
15/03/2018	3	PRO	15:55	18:55	03:00	Dry, Wind F7 SE, Cloud Cover 3/8, Visibility >3km, Temp 4c.
20/03/2018	3	ATY	05:55	08:55	03:00	Dry, Wind F4 SW, Cloud Cover 8-7/8, Visibility >3km, Temp 5-4c.

Annex D

Survey Results



Table D.1 Recorded Flight Activity

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_001	30/10/2017	11:18	5	EA	1	B	36	36	Immature lost from view behind trees in valley. Perched on Beinn a' Bhuna cairn from 09:56-11:17.
SW_002	30/10/2017	11:28	5	WS	12	C	15	180	Left viewshed. Eight immatures & four adults.
SW_003	30/10/2017	11:38	5	HH	1	B	50	50	Ringtail (probable young male) mobbed by RN then lost from view behind trees.
SW_004_a	30/10/2017	15:19	8	HH	1	A	30	30	Ringtail. Possibly young male from 11:38. Mobbed by RN then left viewshed.
SW_004_b	30/10/2017	15:19	8	HH	1	B	61	61	
SW_005_a	31/10/2017	14:05	7	GP	5	A	15		Calling. Left viewshed.
SW_005_b	31/10/2017	14:05	7	GP	5	B	75		
SW_005_c	31/10/2017	14:05	7	GP	5	C	60		
SW_006	31/10/2017	14:22	7	HH	1	A	65	65	Adult male, lost from view in dip.
SW_007	31/10/2017	14:23	7	EA	1	A	15	15	Immature. First winter.
SW_008	31/10/2017	15:05	7	EA	1	A	15	15	Same bird as SW_007 lost from view, presumed landed.
SW_009_a	01/11/2017	08:17	4	GJ	9	A	30	270	Calling. Left viewshed.
SW_009_b	01/11/2017	08:17	4	GJ	9	B	12	108	
SW_010_a	01/11/2017	08:18	4	GJ	7	B	30	210	Calling. Left viewshed.
SW_010_b	01/11/2017	08:18	4	GJ	7	A	63	441	

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_011	01/11/2017	09:01	4	HH	1	A	213	213	Ringtail quartering, then landed. Mobbed by RN & HG briefly.
SW_012	01/11/2017	15:18	6	HH	1	A	32	32	Second winter male, lost from view behind hill.
SW_013	01/11/2017	15:22	6	HH	1	A	7	7	Same bird as SW_012, lost from view in dip.
SW_014	02/11/2017	08:40	8	GJ	6	D	96	576	Migrating? Flying high, calling.
SW_015	02/11/2017	08:48	8	WS	6	B	180	1080	Left viewshed. Four immatures and two adults. Calling.
SW_016	02/11/2017	10:04	8	WE	1	B	30	30	Adult, left viewshed.
SW_017_a	02/11/2017	10:05	8	HH	1	B	45	45	Adult male mobbed by HG & then lost from view behind hillock.
SW_017_b	02/11/2017	10:05	8	HH	1	A	5	5	
SW_018	02/11/2017	10:07	8	HH	1	A	68	68	Same bird as SW_017. Unsuccessfully chased an RG, then lost from view in dip.
SW_019	02/11/2017	10:51	8	GJ	1	B	46	46	Left viewshed.
SW_020	02/11/2017	11:32	8	WE	1	B	36	36	Adult mobbed by RN left viewshed.
SW_021_a	02/11/2017	13:22	2	EA	1	A	15	15	Immature. First winter. Mobbed by 4xRN until out of viewshed.
SW_021_b	02/11/2017	13:22	2	EA	1	B	225	225	
SW_022	02/11/2017	14:00	2	HH	1	B	75	75	Ringtail mobbed by RN then lost from view.
SW_023_a	03/11/2017	11:23	3	GJ	39	A	15	585	Calling, left viewshed.
SW_023_b	03/11/2017	11:23	3	GJ	39	B	54	2106	

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_024	03/11/2017	11:29	3	WS	6	C	46	276	Two adults & four immatures, left viewshed, calling.
SW_025	03/11/2017	13:34	3	HH	1	A	16	16	Ringtail hunting CR, left viewshed.
SW_026_a	03/11/2017	14:03	3	HH	1	B	75	75	Second winter male, hunting. Mobbed by RN & left viewshed.
SW_026_b	03/11/2017	14:03	3	HH	1	A	79	79	
SW_027_a	14/11/2017	08:45	5	WE	1	B	15	15	Juv. mobbed by 3xRN.
SW_027_b	14/11/2017	08:45	5	WE	1	A	15		
SW_028_a	14/11/2017	08:46	5	GJ	62	A	15	930	From area north of Loch a Chlachain (possibly disturbed by WE).
SW_028_b	14/11/2017	08:46	5	GJ	62	B	14	868	
SW_029_a	14/11/2017	14:20	8	GJ	8	B	10	80	
SW_029_b	14/11/2017	14:20	8	GJ	8	A	25	200	Landed out of sight behind a mound.
SW_030_a	14/11/2017	15:05	8	WE	1	B	10	10	Adult, mobbed by HG heading from north towards VP.
SW_030_b	14/11/2017	15:05	8	WE	1	C	55	55	
SW_030_c	14/11/2017	15:05	8	WE	1	B	60	60	
SW_030_d	14/11/2017	15:05	8	WE	1	A	62		
SW_031_a	15/11/2017	08:45	7	WE	1	B	30	30	Low descending flight, lost behind mound.
SW_031_b	15/11/2017	08:45	7	WE	1	A	8		

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_032	16/11/2017	09:50	4	WE	1	C	40	40	Direct flight towards sun on southern edge of viewshed (unaged).
SW_033	16/11/2017	10:30	4	GJ	2	B	45	90	Direct flight at approx 90m.
SW_034	16/11/2017	13:55	3	GJ	3	B	85	255	Riding wind west to east.
SW_035	16/11/2017	14:10	3	GJ	3	A	90	270	Low and into wind <10m off ground.
SW_036	16/11/2017	14:11	3	GJ	9	A	90	810	Low and into wind.
SW_037	16/11/2017	14:30	3	GJ	14	A	90	1260	Low into the wind <10m off ground.
SW_038	16/11/2017	14:35	3	GJ	15	A	60	900	
SW_039	16/11/2017	15:50	3	HH	1	A	60	60	Adult male HH in to roost in Juncus line.
SW_040	16/11/2017	16:00	3	GJ	8	A	50	400	Low direct flight <10m high into the wind.
SW_041	16/11/2017	16:05	3	HH	1	A	180	180	Ringtail into roost in same Juncus area as earlier male HH.
SW_042_a	11/10/2017	10:26	4	HH	1	B	60	60	Ringtail mobbed by HC. Dropped lower to hunt over moor near coniferous plantation.
SW_042_b	11/10/2017	10:26	4	HH	1	A	45	45	
SW_043_a	11/10/2017	12:19	4	WE	1	C	210	210	Adult. Lost from view.
SW_043_b	11/10/2017	12:19	4	WE	1	B	75	75	
SW_043_c	11/10/2017	12:19	4	WE	1	C	90	90	
SW_044	11/10/2017	14:32	6	BY	15	C	45		Small group near VP turned slowly to southwest. Lost from view.

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_045	11/10/2017	15:20	6	GP	6	B	30		Lost from view.
SW_046	11/10/2017	16:18	6	GJ	5	C	75	375	
SW_047	14/10/2017	11:51	3	EA	1	A	30	30	Landed. Driven to ground by RNs.
SW_048	14/10/2017	12:04	3	EA	1	B	90	90	Same bird as SW_047. Mobbed by RN & lost to sight. Poss landed.
SW_049_a	14/10/2017	16:55	5	GJ	8	C	60	480	
SW_049_b	14/10/2017	16:55	5	GJ	8	B	45	360	
SW_050	16/10/2017	12:15	2	EA	1	B	210	210	Adult.
SW_051	16/10/2017	13:56	2	WS	2	B	90		Flew in around 100m height then landed on Loch nan Caorann.
SW_052	16/10/2017	16:29	7	HH	1	A	165	165	Male hunting. Lost from view.
SW_053	16/10/2017	17:11	7	WS	4	C	120		
SW_054_a	20/10/2017	12:47	8	ML	1	A	30		Female. Lost from view.
SW_054_b	20/10/2017	12:47	8	ML	1	B	30		
SW_055	20/10/2017	16:36	4	WS	3	C	120	360	Lost from view.
SW_056	21/10/2017	09:04	1	GP	7	A	45		
SW_057	21/10/2017	09:21	1	WS	4	C	120	480	
SW_058	21/10/2017	09:38	1	GP	10	A	30		Poss same flock as SW_056. Between 5-10 birds.

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_059	21/10/2017	13:10	1	EA	1	C	375	375	Adult. Drifting high through viewshed then lost from view.
SW_060_a	23/10/2017	08:54	6	EA	1	B	210	210	Adult mobbed by 2xRN. Soared for some time over cnoc then flew purposefully NW.
SW_060_b	23/10/2017	08:54	6	EA	1	C	75	75	
SW_061	24/10/2017	17:21	6	HH	1	A	30	30	Male seen briefly before it was lost to view near plantation.
SW_062	24/10/2017	17:50	6	GJ	12	C	75	900	
SW_063	26/10/2017	09:33	2	GP	10	A	30		Lost from view (also seen on walk to VP2).
SW_064	26/10/2017	15:37	3	GJ	8	B	90	720	Flying at 50-100m height.
SW_065	26/10/2017	16:10	3	WS	7	C	165	1155	
SW_066	26/10/2017	16:43	3	GJ	3	C	105	315	Lost to view.
SW_067_a	26/10/2017	17:06	3	HH	1	A	60	60	Ringtail flying low, mobbed by HC, then gained height before lost to view.
SW_067_b	26/10/2017	17:06	3	HH	1	B	45	45	
SW_068_a	28/10/2017	11:02	7	EA	1	B	30	30	Adult circling. Almost stationary for 30s before dropping in height, resuming circling & flying W.
SW_068_b	28/10/2017	11:02	7	EA	1	A	15	15	As above. Lost from view.
SW_068_c	28/10/2017	11:02	7	EA	1	B	15	15	
SW_068_d	28/10/2017	11:02	7	EA	1	C	75	75	

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_069	12/11/2017	14:13	5	WE	1	C	225	225	Adult mobbed by RN. Lost height when flying out of viewshed but remained in Band C.
SW_070	22/11/2017	09:26	1	GP	7	A	45		Lost to view where ground drops towards Loch Grinnavat (also seen on walk to VP1).
SW_071_a	23/11/2017	12:44	7	EA	1	B	135	135	
SW_071_b	23/11/2017	12:44	7	EA	1	C	90	90	
SW_072	24/11/2017	08:27	3	SE	1	A	195		Flew out of plantation to hunt over moor and then lost from view behind trees.
SW_073_a	24/11/2017	08:46	HH ROOST	HH	1	A	30	30	Ringtail hunting; was mobbed as it gained height, then lost from view on lower ground by loch.
SW_073_b	24/11/2017	08:46	HH ROOST	HH	1	B	30	30	
SW_073_c	24/11/2017	08:46	HH ROOST	HH	1	A	45	45	
SW_074	25/11/2017	13:45	2	EA	1	B	45	45	Adult. Landed.
SW_075_a	25/11/2017	13:52	2	EA	1	B	165	165	
SW_075_b	25/11/2017	13:52	2	EA	1	A	15	15	Adult. Flew off east when mobbed by RN. Lost to sight - possibly landed again?
SW_076	28/11/2017	16:08	HH ROOST	HH	1	A	105	105	Flew close to roost location but returned into plantation.
SW_077	28/11/2017	16:21	HH ROOST	HH	1	A	225	225	Same bird as SW_076? Seen flying near roost location. Mobbed by HC. Not seen to roost.
SW_078	20/12/2017	09:15	8	GJ	5	A	30	150	Low into view and then quickly lost to view.

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_079	20/12/2017	10:10	8	HH	1	A	30	30	Adult male, low flight interacting with ringtail HH then lost to view towards west.
SW_080_a	20/12/2017	10:10	8	HH	1	A	75	75	Ringtail, interacting with adult male HH before heading north and moving higher.
SW_080_b	20/12/2017	10:10	8	HH	1	B	40	40	Soaring over ridgeline before changing height and moving north-west.
SW_080_c	20/12/2017	10:10	8	HH	1	A	95	95	Hunting flight low over young plantation then lost to the north-west at edge of viewshed.
SW_081_a	20/12/2017	11:40	8	HH	1	A	45	45	Ringtail, low over plantation heading east.
SW_082_b	20/12/2017	11:40	8	HH	1	B	30	30	Brief soaring flight over ridgeline from ringtail.
SW_082_c	20/12/2017	11:40	8	HH	1	A	30	30	Low and out of view to north-east.
SW_083	20/12/2017	15:40	HH ROOST	HH	1	A	90	90	Ringtail low over Juncus patches on moor then dropped into roost.
SW_084	21/12/2017	09:35	7	HH	1	A	45	45	Adult male from fencepost flew east to interact with 2nd adult male HH on ground.
SW_085	21/12/2017	09:40	7	HH	1	A	90	90	Interaction with 1st male HH then low hunting flight out of view to the south-east.
SW_086	21/12/2017	09:41	7	HH	1	A	5	5	Low and out of view to south-east while following flight of 2nd male HH.
SW_087_a	21/12/2017	09:55	7	HH	1	A	30	30	Ringtail, probable female, on fencepost (0945-0955) then flight down fenceline onto another post.
SW_087_b	21/12/2017	11:05	7	HH	1	A	4	4	Low and lost from view to south-east when left fencepost.

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_088	21/12/2017	12:00	7	WE	1	B	105	105	Adult, approx 80m high, north through viewshed and landed out of view on hummock north of viewshed.
SW_089_a	21/12/2017	15:25	7	HH	1	B	60	60	Ringtail, probable female, high direct flight (approx 100m) over Loch a Bhuna.
SW_089_b	21/12/2017	15:25	7	HH	1	A	30	30	Lower flight from rintail into plantation on edge of viewshed.
SW_090	22/12/2017	09:05	4	GJ	3	A	25	75	Low direct flight onto Loch Airigh.
SW_091	22/12/2017	10:40	4	GJ	6	A	20	120	Moved from roost on moor north towards loch and out of view.
SW_092	12/12/2017	08:21	HH ROOST	HH	1	A	90	90	Ringtail, following burn, mobbed by RN, lost to view (possibly landed).
SW_093	12/12/2017	09:02	HH ROOST	GJ	4	B	90	360	Small flock following line of road at around 40-50m height.
SW_094	12/12/2017	09:16	HH ROOST	ML	1	A	45	45	Perched by road then low flight and lost in forestry plantation.
SW_095	13/12/2017	15:35	4	GJ	5	A	105	525	Flying low towards Loch Airigh na Lic.
SW_096_a	13/12/2017	15:51	4	GJ	4	B	45	180	
SW_096_b	13/12/2017	15:51	4	GJ	4	A	45	180	
SW_097	15/12/2017	11:27	4	GJ	4	B	45	180	Flight around 30m at edge of viewshed south across road.
SW_098_a	23/12/2017	15:32	5	HH	1	A	45	45	Ringtail, mobbed by RN low over plantation.
SW_098_b	23/12/2017	15:32	5	HH	1	B	15	15	Brief higher flight over ridge from ringtail.

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_098_c	23/12/2017	15:32	5	HH	1	A	75	75	Ringtail lost to view around Beinn Greidaig.
SW_099	15/01/2018	09:25	6	HH	1	A	15	15	Ringtail (imm) landed in conifer after being flushed by passing car.
SW_100_a	15/01/2018	09:25	6	HH	1	B	15	15	Second ringtail (imm) flushed by passing car. Lost from view over ridge.
SW_100_b	15/01/2018	09:25	6	HH	1	A	38	38	
SW_101	15/01/2018	09:31	6	HH	1	A	60	60	Same bird as SW_099. Lost from view in dip near Loch nan Eilean.
SW_102	15/01/2018	09:51	6	HH	1	A	13	13	Ringtail flew from fencepost and returned as shower became heavy.
SW_103	15/01/2018	10:32	6	HH	1	A	85	85	Ringtail (imm) perched on fence at 10:30 then flew out of view behind ridge.
SW_104	15/01/2018	11:06	6	HH	1	A	8	8	Ringtail, lost from view in dip. Flushed male RG. Prob. female HH.
SW_105_a	15/01/2018	11:30	6	WE	1	B	15	15	Prob. imm. Landed on rocky outcrop.
SW_105_b	15/01/2018	11:30	6	WE	1	A	15		
SW_106	15/01/2018	11:34	6	WE	1	A	3		Same bird as SW_105. Lost behind ridge when took flight.
SW_107	15/01/2018	11:52	6	WE	1	A	9		Same bird as SW_105/106. Landed but not seen to leave (c.11:54).
SW_108	15/01/2018	13:15	5	EA	1	B	15	15	Mobbed by RN until lost from view behind plantation. Unaged due to distance and only saw silhouette.

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_109	16/01/2018	09:40	8	HH	1	B	79	79	Ringtail. Strong flight. Lost from view over ridge. Very dark individual, poss. imm.
SW_110	16/01/2018	09:52	8	WE	1	B	53	53	Adult. Landed on side of loch to preen. Mobbed by HG & GB.
SW_111	16/01/2018	10:00	8	WE	1	A	71		Same bird as SW_110. Lost from view in dip.
SW_112	16/01/2018	11:57	8	HH	1	B	38	38	Ringtail. Lost from view.
SW_113	16/01/2018	13:08	8	HH	1	B	23	23	Ringtail hunting small passerines. Lost from view behind ridge.
SW_114	16/01/2018	13:12	8	WE	1	B	133	133	Adult mobbed by GB.
SW_115_a	16/01/2018	15:09	8	HH	1	B	45	45	Ringtail. Strong direct flight. Lost from view behind hillock. Briefly mobbed an RN.
SW_115_b	16/01/2018	15:09	8	HH	1	A	154	154	
SW_116	17/01/2018	16:09	2	HH	1	B	30	30	Ringtail briefly mobbed by RN. Lost from view behind hill. Going to roost site?
SW_117_a	18/01/2018	10:25	7	WE	1	A	15		Adult perched on hillock. Mobbed by gulls. Left viewshed.
SW_117_b	18/01/2018	10:25	7	WE	1	B	12	12	
SW_118	18/01/2018	11:39	7	EA	1	A	4	4	Perched from 11:23. Mobbed by gulls. Left viewshed. Dark bird w. no obvious white in plumage.
SW_119	19/01/2018	11:06	3	GJ	33	A	75	2475	Lost from view in valley.
SW_120	09/01/2018	10:24	4	GJ	2	A	30	60	Flew off soon after arrival at VP. Left viewshed.

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_121	09/01/2018	10:39	4	HH	1	A	45	45	Male skimming tops of trees of plantation. Mobbed by 2xHC. Lost from view by plantation.
SW_122	11/01/2018	10:53	6	HH	1	A	30	30	Ringtail. Lost from view at forest edge.
SW_123	11/01/2018	11:07	6	HH	1	A	60	60	Ringtail. Poss. same bird as SW_122. Circled over moor before lost from view.
SW_124	14/01/2018	11:41	5	EA	1	B	45	45	Immature (still white on tail). Very scraggy. Lost from view, possibly landed.
SW_125	25/01/2018	14:11	5	WE	1	C	75	75	Adult, flying high heading towards to the NW.
SW_126	04/02/2018	09:40	2	HH	1	A	90	90	Ringtail circling over moor, lost to view near Loch na Beiste Moire.
SW_127	04/02/2018	15:28	6	EA	1	B	75	75	Adult, in from west at c.100m, lost to view around Beinn a Bhuna.
SW_128	12/02/2018	09:25	6	EA	1	B	88	88	Adult. Left viewshed. Strong, purposeful flight.
SW_129	12/02/2018	11:08	6	WE	3	B	30	90	Three adults interacting (talon grappling, dive bombing etc). Left viewshed.
SW_130	12/02/2018	13:33	7	EA	1	B	180	180	Adult. Landed on rocky crag.
SW_131	12/02/2018	13:42	7	EA	1	A	15	15	Same bird as SW_130. Mobbed by RN from 13:36-42 until it flew south out of viewshed.
SW_132	12/02/2018	13:46	7	EA	1	B	180	180	Circling with SW_133. At least one adult, probable adult pair. Lost from view in dip.
SW_133_a	12/02/2018	13:46	7	EA	1	B	345	345	Circling with SW_132. At least one adult, probable adult pair. Lost from view in dip.
SW_133_b	12/02/2018	13:46	7	EA	1	A	15	15	

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_134	13/02/2018	16:27	HH ROOST	WE	1	B	90	90	Sub-adult. Mobbed by HGs&GBs. Lost from view when bird dropped behind trees into valley. 4CY.
SW_135	13/02/2018	17:04	HH ROOST	ML	1	A	15	15	Female. Lost from view in dip.
SW_136	13/02/2018	17:27	HH ROOST	HH	1	A	90	90	Adult female. Lost from view in dip.
SW_137_a	13/02/2018	17:44	HH ROOST	HH	1	A	60	60	Ringtail. Lost from view in dip.
SW_137_b	13/02/2018	17:44	HH ROOST	HH	1	B	30	30	
SW_138	14/02/2018	16:26	HH ROOST	GP	3	A	5	15	
SW_139	15/02/2018	10:30	5	HH	1	A	51	51	Ringtail. Lost from view, quartering amongst trees.
SW_140_a	15/02/2018	13:35	2	EA	1	C	165	165	Adult. Lost from view behind hill.
SW_140_b	15/02/2018	13:35	2	EA	1	B	15	15	
SW_140_c	15/02/2018	13:35	2	EA	1	A	15	15	
SW_140_d	15/02/2018	13:35	2	EA	1	B	150	150	
SW_140_e	15/02/2018	13:35	2	EA	1	A	45	45	
SW_140_f	15/02/2018	13:35	2	EA	1	B	30	30	
SW_141_a	15/02/2018	13:55	2	EA	1	B	90	90	Same bird as SW_140. Lost from view in dip.
SW_141_b	15/02/2018	13:55	2	EA	1	A	5	5	
SW_142	16/02/2018	08:50	8	HH	1	A	77	77	Adult female, quartering. Lost from view in dip along burn.

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_143	16/02/2018	09:22	8	WE	1	B	30	30	4CY mobbed by gulls until left viewshed and flew NW.
SW_144	16/02/2018	09:40	8	GP	5	A	5		Lost from view in dip.
SW_145	16/02/2018	12:58	8	HH	1	A	15	15	Ringtail. Lost from view amongst trees.
SW_146	16/02/2018	13:41	8	HH	1	B	90	90	Ringtail. Lost from view amongst trees.
SW_147	16/02/2018	14:20	8	ML	1	A	22		Female. Landed on tussock, just outwith viewshed.
SW_148_a	12/03/2018	10:45	6	EA	2	C	45	90	Adults. Display / play dives / mutual flying. Lost from view as left viewshed.
SW_148_b	12/03/2018	10:45	6	EA	2	B	15	30	
SW_148_c	12/03/2018	10:45	6	EA	2	C	30	60	
SW_148_d	12/03/2018	10:45	6	EA	2	B	15	30	
SW_148_e	12/03/2018	10:45	6	EA	2	C	210	420	
SW_149	13/03/2018	07:45	3	GJ	5	A	45	225	Landed on moor.
SW_150	13/03/2018	08:30	3	GJ	3	A	30	90	Landed on moor.
SW_151	13/03/2018	09:25	3	GJ	15	B	60	900	
SW_152	13/03/2018	09:40	3	GJ	3	A	30	90	Left moor.
SW_153	13/03/2018	10:00	3	GJ	2	A	30	60	Left moor.
SW_154	13/03/2018	10:15	3	GJ	4	A	45	180	
SW_155_a	13/03/2018	10:20	3	PE	1	B	15		Level flight then fast hunting dive out of view.

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_155_b	13/03/2018	10:20	3	PE	1	A	15		
SW_156_a	13/03/2018	14:45	2	WE	1	A	75		Juvenile. Started flight low, circling to c.400m height.
SW_156_b	13/03/2018	14:45	2	WE	1	B	60	60	
SW_156_c	13/03/2018	14:45	2	WE	1	C	60	60	
SW_156_d	13/03/2018	14:45	2	WE	1	D	135		
SW_157	13/03/2018	14:48	2	WE	1	D	45		
SW_158	14/03/2018	10:15	1	WE	1	A	75		Juvenile. Flew towards surveyor where a number of HC & RN had gathered.
SW_159_a	14/03/2018	11:12	1	GJ	2	A	30	60	Flying into wind.
SW_159_b	14/03/2018	11:12	1	GJ	2	B	60	120	
SW_160_a	14/03/2018	16:55	5	HH	1	A	180	180	Adult male. Interacting with SW_161 & HGs before lost amongst plantation trees.
SW_160_b	14/03/2018	16:55	5	HH	1	B	60	60	
SW_160_c	14/03/2018	16:55	5	HH	1	A	195	195	
SW_161_a	14/03/2018	16:59	5	HH	1	A	120	120	Ringtail (prob female) joined SW_160 around Beinn Gredaig. Lost from sight flying low.
SW_161_b	14/03/2018	16:59	5	HH	1	B	30	30	
SW_161_c	14/03/2018	16:59	5	HH	1	A	30	30	
SW_162	15/03/2018	08:20	8	GK	1	B	45		Strong, fast flight.

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_163	15/03/2018	17:40	HH ROOST	HH	1	A	135	135	Ringtail (prob juvenile). Low flight into roost in Juncus rush.
SW_164	15/03/2018	17:42	HH ROOST	HH	1	A	105	105	Ringtail (prob juvenile). Different bird to SW_163. Low flight into roost in Juncus rush.
SW_165	15/03/2018	17:50	HH ROOST	HH	1	A	105	105	Adult male direct flight into second roost area in Juncus rush on SW edge of moor.
SW_166	15/03/2018	18:25	HH ROOST	HH	1	A	105	105	Ringtail (probable female). Different to SW_162. Lost from view in low light between roosting areas.
SW_167	15/03/2018	18:48	HH ROOST	HH	1	A	90	90	Adult male (prob second winter). Different bird to SW_165.
SW_168	15/03/2018	18:49	HH ROOST	HH	1	A	30	30	Probably same bird as SW_167. Flew over roost & back in again.
SW_169	16/03/2018	07:12	7	HH	1	A	75	75	Ringtail.
SW_170	16/03/2018	13:25	7	HH	1	A	45	45	Adult male, hunting over plantation & moor.
SW_171	17/02/2018	08:36	3	HH	1	A	30	30	Ringtail, possibly landed in plantation
SW_172_a	21/02/2018	14:57	7	EA	1	B	30	30	
SW_172_b	21/02/2018	14:57	7	EA	1	C	30	30	
SW_172_c	21/02/2018	14:57	7	EA	1	B	45	45	
SW_172_d	21/02/2018	14:57	7	EA	1	C	60	60	
SW_173_a	21/02/2018	14:59	7	EA	1	B	30	30	Joined SW_172.
SW_173_b	21/02/2018	14:59	7	EA	1	C	60	60	Flew off to SW with other SW_172.

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_174_a	22/02/2018	15:46	7	HH	1	A	45	45	Adult male hunting, then flew higher.
SW_174_b	22/02/2018	15:46	7	HH	1	B	30	30	Adult male.
SW_175	22/02/2018	16:21	7	WS	4	B	45		Came from direction of Loch nan Sgiath but was not on it.
SW_176_a	26/02/2018	16:08	4	GJ	2	A	15	30	
SW_176_b	26/02/2018	16:08	4	GJ	2	B	30	60	
SW_177	19/02/2018	15:09	8	WE	1	B	120	120	Adult.
SW_178_a	17/03/2018	14:21	6	EA	1	D	45	45	Adult. Seen high, almost stationary, before dropping down west.
SW_178_b	17/03/2018	14:21	6	EA	1	C	60	60	
SW_179	17/03/2018	14:58	6	HH	1	A	45	45	Male, followed plantation edge, then lost to view.
SW_180	18/03/2018	13:30	1	GP	5	A	30		Flying low; left viewshed.
SW_181	19/03/2018	16:34	4	GJ	5	B	45	225	Lost to view.
SW_182_a	19/03/2018	17:21	4	HH	1	B	30	30	Female mobbed by HC. Dropped height and lost to view near plantation.
SW_182_b	19/03/2018	17:21	4	HH	1	A	30	30	
SW_183	20/03/2018	06:17	HH ROOST	SE	1	A	105	105	Flew out near plantation in grassy clearing. Hunted over moor then flew back, where lost to view.
SW_184	20/03/2018	06:25	HH ROOST	HH	1	A	45	45	Male. Seen briefly, possibly came from roost. Dropped height and lost to view.

Flight ref	Date	Time	VP or Hen harrier Roost	Species	Count	Heightband	Seconds	Total seconds	Notes
SW_185	25/03/2018	08:02	4	GJ	7	B	75	525	
SW_186	26/03/2018	17:29	5	GJ	2	A	30	60	Seen on loch, then flew off, low, and lost to view.
SW_187	28/03/2018	12:36	3	EA	1	B	75	75	Adult mobbed by RN. Flew low at first, gaining height towards Pentland Road WF.
SW_188_a	28/03/2018	18:14	3	GJ	3	A	75	225	Flew off from near lochan.
SW_188_b	28/03/2018	18:14	3	GJ	3	B	30	90	
SW_189	28/03/2018	18:21	3	GJ	2	A	30	60	Flew off from near lochan.

Annex E

Incidental Flights and Observations



Table E.1 Incidental Flights

Flight reference	Date	Time	Species	Number of birds	Notes
SW_IR_001	31/10/2017	12:48	EA	1	First winter. Flushed from kill by hiker during VP7 (outwith viewshed). Low, short flight. Landed.
SW_IR_002	31/10/2017	12:53	EA	1	Same as_001. Landed after short low flight during VP7 (outwith viewshed).
SW_IR_004	31/10/2017	14:20	EA	1	Same as_001. Landed after short low flight during VP7 (outwith viewshed).
SW_IR_003	31/10/2017	14:03	GP	5	Flying c.100m height during VP7 (outwith viewshed).
SW_IR_005	02/11/2017	10:01	WE	1	Adult, lost from view during VP8 (outwith viewshed).
SW_IR_006	02/11/2017	10:30	EA	1	First winter. Flushed 3xWE from T-Dhubh at 10:35. Flushed by WE at 10:55. VP8 (outwith viewshed).
SW_IR_007	02/11/2017	11:30	WE	1	Adult flying at c.75m for 120 secs during VP8 (outwith viewshed).
SW_IR_008	03/11/2017	11:38	HH	2	One ringtail hunting CR here (and at 14:10). Two ringtails hunting at 13:15. VP3 (outwith viewshed).
SW_IR_009	03/11/2017	12:06	HH	1	Ringtail, hunting during VP3 (outwith viewshed).
SW_IR_010	03/11/2017	12:23	HH	2	Ringtails, hunting passerines (RE) during VP3 (outwith viewshed).
SW_IR_011	02/11/2017	16:45	GJ	12	Flying at c.50m over car during drive-off site.
SW_IR_012	02/11/2017	16:48	GJ	19	Flying at c.50m over car during drive-off site.
SW_IR_014	03/11/2017	10:32	GJ	4	Flushed by WE during walk to VP3.
SW_IR_013	03/11/2017	10:32	WE	1	Immature (poss first winter) flushed 4xGJ, c.1000 HG/GB & 100xRN. Lost from view during walk to VP3.
SW_IR_015	15/11/2017	09:30	WE	1	40 second flight at approx 60m, couldn't be aged. VP7 (outwith viewshed).
SW_IR_016	18/12/2017	10:30	GJ	4	Low flight (below 10m) over windfarm track during walk-in to VP2.
SW_IR_017	18/12/2017	15:45	GJ	10	Flushed off roost on moor during walk-off VP2, low flight south over road.
SW_IR_018	21/12/2017	14:05	EA	1	Distant 35 second flight (approx 150-200m) before lost from view below skyline.

Flight reference	Date	Time	Species	Number of birds	Notes
SW_IR_019	21/12/2017	15:30	GP	15	Low flight around top of ridge behind VP7 on sunset.
SW_IR_020	19/12/2017	14:00	EA	1	15 second flight low (<20m) along ridgeline viewed from road during heavy rain and strong winds.
SW_IR_021	20/12/2017	11:40	EA	1	Distant 3 minute flight (between 20-100m) over plantation.
SW_IR_024	16/01/2018	10:16	EA	1	Imm. Poss. first winter (white in tail & wings). Mobbed by RN during VP8.
SW_IR_022	15/01/2018	08:56	EA	1	Immature (very raggy bird). Low quartering flight (on arrival at VP6) for 30 secs at height band A.
SW_IR_023	16/01/2018	08:56	HH	1	Adult male, quartering. Mobbed by HG. Seen during settling-in period for VP8.
SW_IR_025	17/01/2018	16:31	GJ	14	Landed in Beinn Greidaig WF during drive off from VP2.
SW_IR_026	17/01/2018	16:35	HH	1	Ringtail hunting around roost site during drive off from VP2.
SW_IR_027	18/01/2018	14:15	HH	1	Ringtail seen during VP7 but outwith viewshed. Lost from view behind hill.
SW_IR_028	19/01/2018	09:27	WE	1	Seen during VP3 (outwith viewshed). Mobbed by RN. 15 sec flight <20m height.
SW_IR_029	19/01/2018	12:09	GJ	10	Seen during drive-off site. 30 sec flight at <20m.
SW_IR_030	16/02/2018	09:22	WE	1	Continued flight outwith VP8 viewshed until lost from view.
SW_IR_031	12/02/2018	11:08	WE	3	Continued flight outwith VP6 viewshed until lost from view.
SW_IR_032	12/02/2018	12:15	EA	1	Adult circling over territory (eyrie) between 12:15-30.
SW_IR_033	12/02/2018	12:26	EA	1	Adult flying low and direct at 12:26. Different bird to SW_IR_032.
SW_IR_034	12/02/2018	12:43	EA	1	Adult flying low at 12:43.
SW_IR_035	16/02/2018	09:45	EA	2	Mobbed by 40xRN at 09:45. Landed but not seen to leave.
SW_IR_036	16/02/2018	11:10	WE	1	Mobbed by RN at 11:10.
SW_IR_037	16/02/2018	11:40	EA	2	Probable adult pair circling at 11:40.

Flight reference	Date	Time	Species	Number of birds	Notes
SW_IR_038	16/02/2018	13:07	EA	1	Adult circling from 13:07-20.
SW_IR_039	16/02/2018	13:30	EA	3	Circling at 13:30.
SW_IR_040	16/02/2018	14:38	EA	1	Circling from 14:38-53 before landing.
SW_IR_041	13/03/2018	18:30	HH	1	Incidental HH roost watch 18:10-45. Adult male roosted in Juncus rush.
SW_IR_042	13/03/2018	18:31	HH	1	Incidental HH roost watch 18:10-45. Second adult male roosted in Juncus rush.
SW_IR_043	12/03/2018	15:30	WE	1	Outwith VP8 viewshed. 60 sec flight at c.150m height.
SW_IR_044	12/03/2018	16:45	GJ	9	Outwith VP8 viewshed. 50 sec flight at c.30m height.
SW_IR_045	13/03/2018	13:05	WE	5	Outwith VP2 viewshed. Five birds interacting at >300m height for 20 mins.
SW_IR_046	13/03/2018	13:15	ds	1	Outwith VP2 viewshed. Diver sp. (poss BV). Flew high, >300m height.
SW_IR_047	13/03/2018	13:50	EA	2	Outwith VP2 viewshed. Adults interacting w. 2xBZ & 2xRN. 60s @ <20m, 30s @ 20-100m, 180s @ 100-200m.
SW_IR_048	15/03/2018	08:00	EA	2	Outwith VP8 viewshed. Adults interacting w. 2xRN. 15 mins @ 100-200m (inc. 100s @ 20-100m).
SW_IR_049	16/03/2018	13:26	HH	1	Outwith VP7 viewshed. Adult male, continued flight from VP for 200s @ <20m height until lost.
SW_IR_050	15/03/2018	UNK	GJ	9	Flew at <20m height for 40s on to moor to roost during an HH ROOST. Not mapped on TSp Form.

wood.

