

Appendix 10.1:

Ornithology Technical

Report

This page is intentionally blank.

2026

Shepherds' Rig Wind Farm Section 36C

Appendix 10.1: Ornithology Technical Report

n r p NATURAL RESEARCH
PROJECTS LIMITED



Natural Research Projects
Brathens Business Park,
Hill of Brathens, Glassel,
Banchory
AB31 4BY

01330 826880

April 2026

Report Quality Assurance Log

Date	Version	Created by	Checked by
15/05/2024	1.0	Blair Urquhart	Alex Ash
26/11/2025	1.1	Blair Urquhart	Alex Ash
03/04/2026	Issue		

The material in this report is confidential. This report has been prepared for the exclusive use of Boralex and shall not be distributed or made available to any other company or person without the knowledge and written consent of Boralex or NRP.

Copyright © NRP

Contents

Introduction1

Field Survey Methods1

 Flight activity survey1

Field Survey Results.....5

 Wildfowl5

 Scarce raptors and owls6

 Other species.....7

Appendix 1: Bird species to be recorded during flight activity surveys.9

Appendix 2: Weather details during Vantage Point watches10

Introduction

1. This report describes ornithological surveys undertaken by Natural Research (Projects) Ltd (NRP) on and around the site of the proposed Shepherds' Rig Wind Farm ("the Proposed Varied Development") during the period April 2023 to March 2024.
2. The objectives of study were to quantify the level of flight activity by species of conservation importance.
3. As the Proposed Varied Development involves increasing rotor diameter and the blade tip height of turbines from that of the Consented Development, further baseline field surveys were undertaken between April 2023 and March 2024 (providing 12 months flight activity data) classifying flight height as <20 m, 20-50 m, 50-100 m, 100-150 m, 150-250 m or >250 m. This approach was agreed by NatureScot.
4. The field surveyors were Rhodri Evetts (RE), Bob Stakim (RAS), Neil Thurgate (NT) and Alex Ash (AA). All field surveyors are trained ornithologists with extensive experience in surveying and monitoring. Field surveyors received training prior to and during survey work to maintain professional standards.

Field Survey Methods

Flight activity survey

5. Information on flight activity was collected during timed watches from strategic Vantage Points (VPs) using the methods described by Band *et al.* (2007)¹.
6. The flight activity survey area consisted of the proposed turbine locations plus a buffer of 500 metres (m) (**Figure 1**). Four VPs were selected through a mix of GIS analysis and field trials, with the aim of maximising ground visibility within the flight activity survey area using the minimum number of points. Viewsheds from each VP are derived using a 20 m vertical cut-off and truncated horizontally at 2 kilometres (km) (**Figure 1**).
7. Observers at VPs positioned themselves to minimise their effects on bird behaviour. A viewing arc not exceeding 180 degrees was scanned. Watches were undertaken during daylight hours by a single observer in a wide range of weather conditions, mainly in conditions of good ground visibility (> 2 km) and when the cloud base was higher than the most elevated parts of the area under observation.
8. In total, 288 hours of observation were undertaken during the period April 2023 to March 2024. A breakdown of observation effort from each VP is provided in **Table 1** and watch details are provided in **Table 2**. Details of weather conditions during VP watches are presented in **Appendix 2**.

¹ Band, W., Madders, M. & Whitfield, D.P. (2007) Developing field and analytical methods to assess avian collision risk at wind farms. In de Lucas, M, Janss, G.F.E. and Ferrer, M. (Eds.) *Birds and Wind Farms: Risk assessment and Mitigation*, pp. 259 - 275. Quercus, Madrid.

Table 1. Summary of monthly VP watches. Data are hours of observation.

VP No.	2023									2024			Total (hrs)
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
2	9.00	9.00	6.00	6.00	6.00	6.00	6.00	6.00	4.00	4.00	4.00	6.00	72.00
3	9.00	9.00	6.00	6.00	6.00	6.00	6.00	6.00	4.00	4.00	4.00	6.00	72.00
5	9.00	9.00	6.00	6.00	6.00	6.00	6.00	6.00	4.00	4.00	4.00	6.00	72.00
6	9.00	9.00	6.00	6.00	6.00	6.00	6.00	8.00	2.00	4.00	4.00	6.00	72.00
Total	36.00	36.00	24.00	24.00	24.00	24.00	24.00	26.00	14.00	16.00	16.00	24.00	288.00

Table 2. Details of Vantage Point watches.

Date	VP No.	Start time	Finish time	Duration (hrs)	Observer
02/04/2023	2	1205	1505	3.00	NT
02/04/2023	3	0820	1120	3.00	NT
03/04/2023	3	1500	1800	3.00	NT
03/04/2023	5	0710	1010	3.00	NT
04/04/2023	2	0625	0925	3.00	NT
04/04/2023	6	1150	1450	3.00	NT
05/04/2023	5	1700	2000	3.00	NT
05/04/2023	6	0655	0955	3.00	NT
06/04/2023	3	1710	2010	3.00	NT
06/04/2023	5	0815	1115	3.00	NT
07/04/2023	2	1700	2000	3.00	NT
07/04/2023	6	0840	1140	3.00	NT
02/05/2023	5	0620	0920	3.00	NT
02/05/2023	6	1415	1715	3.00	NT
03/05/2023	2	0800	1100	3.00	NT
03/05/2023	3	1145	1445	3.00	NT
04/05/2023	5	1240	1540	3.00	NT
04/05/2023	6	0840	1140	3.00	NT
05/05/2023	2	1740	2040	3.00	NT
05/05/2023	3	0600	0900	3.00	NT
06/05/2023	5	0900	1200	3.00	NT
06/05/2023	6	1745	2045	3.00	NT
07/05/2023	2	1350	1650	3.00	NT
07/05/2023	3	1720	2020	3.00	NT
02/06/2023	2	1350	1650	3.00	NT
02/06/2023	6	0900	1200	3.00	NT
03/06/2023	3	0900	1200	3.00	NT
03/06/2023	5	1330	1630	3.00	NT
04/06/2023	2	0900	1200	3.00	NT
04/06/2023	6	1330	1630	3.00	NT
05/06/2023	3	1300	1600	3.00	NT
05/06/2023	5	0900	1200	3.00	NT
04/07/2023	2	0910	1210	3.00	RE
04/07/2023	3	1300	1600	3.00	RE
05/07/2023	5	1245	1545	3.00	RE
05/07/2023	6	0845	1145	3.00	RE
06/07/2023	2	1145	1445	3.00	RE
06/07/2023	3	0815	1115	3.00	RE
07/07/2023	5	0840	1140	3.00	RE
20/07/2023	6	0935	1235	3.00	AA
04/08/2023	5	1350	1650	3.00	RAS
04/08/2023	6	0935	1235	3.00	RAS
14/08/2023	2	0930	1230	3.00	RAS

Table 2. Details of Vantage Point watches.					
Date	VP No.	Start time	Finish time	Duration (hrs)	Observer
14/08/2023	3	1305	1605	3.00	RAS
15/08/2023	5	0845	1145	3.00	RAS
15/08/2023	6	1250	1550	3.00	RAS
16/08/2023	2	1300	1600	3.00	RAS
16/08/2023	3	0900	1200	3.00	RAS
04/09/2023	5	0900	1200	3.00	RAS
04/09/2023	6	1330	1630	3.00	RAS
05/09/2023	2	0930	1230	3.00	RAS
05/09/2023	3	1255	1555	3.00	RAS
06/09/2023	5	1320	1620	3.00	RAS
06/09/2023	6	0920	1220	3.00	RAS
07/09/2023	2	1215	1515	3.00	RAS
07/09/2023	3	0850	1150	3.00	RAS
16/10/2023	5	0940	1240	3.00	RAS
16/10/2023	6	1400	1700	3.00	RAS
17/10/2023	2	1255	1555	3.00	RAS
17/10/2023	3	0930	1230	3.00	RAS
18/10/2023	3	1345	1645	3.00	RAS
18/10/2023	6	0935	1235	3.00	RAS
20/10/2023	2	0945	1245	3.00	RAS
20/10/2023	5	1315	1615	3.00	RAS
13/11/2023	3	1245	1545	3.00	RAS
13/11/2023	5	0915	1215	3.00	RAS
17/11/2023	2	0935	1235	3.00	RAS
17/11/2023	2	1235	1535	3.00	RAS
27/11/2023	3	0835	1135	3.00	RAS
27/11/2023	6	1230	1530	3.00	RAS
28/11/2023	5	1300	1600	3.00	RAS
28/11/2023	6	0910	1210	3.00	RAS
30/11/2023	6	0950	1150	2.00	RAS
04/12/2023	5	1200	1400	2.00	RAS
05/12/2023	5	0905	1105	2.00	RAS
05/12/2023	6	1205	1405	2.00	RAS
06/12/2023	2	0935	1135	2.00	RAS
06/12/2023	3	1210	1410	2.00	RAS
08/12/2023	3	0910	1110	2.00	RAS
18/12/2023	2	1140	1340	2.00	RAS
03/01/2024	5	0925	1125	2.00	RAS
03/01/2024	6	1230	1430	2.00	RAS
04/01/2024	2	0955	1155	2.00	RAS
04/01/2024	3	1230	1430	2.00	RAS
05/01/2024	5	1315	1515	2.00	RAS
05/01/2024	6	1015	1215	2.00	RAS
26/01/2024	2	1150	1350	2.00	RAS
26/01/2024	3	0920	1120	2.00	RAS
01/02/2024	2	1015	1215	2.00	RAS
01/02/2024	3	1300	1500	2.00	RAS
02/02/2024	5	1300	1500	2.00	RAS
02/02/2024	6	1000	1200	2.00	RAS
07/02/2024	5	1045	1245	2.00	RAS
07/02/2024	6	1345	1545	2.00	RAS
08/02/2024	2	1145	1345	2.00	RAS
08/02/2024	3	0930	1130	2.00	RAS
04/03/2024	2	1250	1550	3.00	RAS

Table 2. Details of Vantage Point watches.					
Date	VP No.	Start time	Finish time	Duration (hrs)	Observer
04/03/2024	3	0920	1220	3.00	RAS
05/03/2024	5	0930	1230	3.00	RAS
05/03/2024	6	1335	1635	3.00	RAS
06/03/2024	2	1000	1300	3.00	RAS
06/03/2024	3	1330	1630	3.00	RAS
07/03/2024	5	1315	1615	3.00	RAS
07/03/2024	6	0915	1215	3.00	RAS

9. During each watch, hierarchical recording methods were used, as follows:

- Focal bird sampling - timed. The viewing arc was scanned constantly until a *Target A Species*² was detected in flight. Once detected, the bird was followed until it ceased flying or was lost to view. The time the bird was initially detected and the time it spent flying (to the nearest second) were recorded. The route followed by the bird was plotted in the field onto an enlarged 1:25,000 scale map, with the direction of flight indicated. Routes were plotted regardless of whether or not the bird was within the flight activity survey area. The bird's flying elevation above the ground was estimated at the point of detection and at 15 second intervals thereafter, using a countdown timer with an audible alarm. Flying elevation was classified as <20 m, 20-50 m, 50-100 m, 100-150 m, 150-250 m, or >250 m.
- Focal bird sampling – untimed. The same scanning procedure as described above was used. However, flights of *Target B Species*² were not timed, instead the flight path was mapped and flying elevation was recorded at the start and when it changed during the recorded bout. Where a flock was observed a central flight line representative of the route was estimated.
- Activity summaries. At the end of each 5-min period, flight activity within the survey area by species of lesser conservation importance (*Secondary Species*²) was summarised. Each VP watch was sub-divided into 5-minute periods and at the end of each 5-minute period the total number of individuals of each secondary target species seen flying in the study area was recorded. The height, direction and number of individuals involved in notable bird movements were recorded.

10. Data were entered in the field onto recording sheets and later transferred to Excel spreadsheets. Maps of flight activity by each species were compiled for each watch. Each flying bout was numbered consecutively and cross-referenced to the relevant flightpath on the map.

² Target species were drawn from those listed in Annex 1 of the Birds Directive and Schedule 1 of the WCA. Other species considered important in a regional or local context may also be included. These are listed in **Appendix 1**.

Field Survey Results

11. Observed flight activity, timings and heights refer to all flights observed in the field from all VPs. It should be noted that flight activity and timings will reduce, due to clipping flights to the 500 m flight activity survey area buffer and viewshed, from that recorded in the field when it comes to analysing these data in a Collision Risk Model (CRM) (see **Technical Appendix 10.2**).

Wildfowl

Occurrence and status

12. One species of conservation concern was recorded during the study period: **whooper swan** (*Cygnus cygnus*). One observation of **whooper swan** (Annex 1 and Schedule 1) was made during the course of all VP watches. Other wildfowl species recorded of lesser conservation concern included greylag goose (*Anser anser*) and pink-footed goose (*A. brachyrhynchus*).

Flight activity

13. A single flight by 17 **whooper swans** was recorded. The flight was recorded at a height of 50 m to 100 m above ground level for a total of 205 seconds (**Table 3; Figure 2**).

Table 3. Details of whooper swan flights recorded during flight activity surveys.												
Species	Season	VP No.	No of flights	No of birds	Total fly time (s)	Number adjusted total (s)	Time in height band (s)					
							<20m	20-50m	50-100m	100-150m	150-250m	>250m
Whooper swan	Sep-Mar	2	1	17	205	3485			3485			
Whooper swan Total			1	17	205	3485			3485			

14. Seven flights involving a total of 16 greylag geese were recorded during VP watches. Flight heights varied between less than 20 m to 100 m above ground level (**Table 4; Figure 2**).
15. Three flights involving a total of 169 pink-footed geese were recorded during VP watches. Flight heights varied between 50 m and 250 m above ground level (**Table 4; Figure 2**).

Table 4. Details of goose flights recorded during flight activity surveys.										
Species	Season	VP No.	No of flights	No of birds	Height band					
					<20m	20-50m	50-100m	100-150m	150-250m	>250m
Greylag goose	Apr-Aug	2	1	2		*				
		3	4	11	*	*				
	Sep-Mar	3	1	1		*	*			
		6	1	2		*				
Greylag goose Total			7	16	*	*	*			
Pink-footed goose	Apr-Aug	2	1	100			*			
		5	1	30					*	
	Sep-Mar	2	1	39				*		
Pink-footed goose Total			3	169			*	*	*	

Scarce raptors and owls

Occurrence and status

16. Four species of scarce raptor were recorded during surveys: **red kite** (*Milvus milvus*), **goshawk** (*Accipiter gentilis*), **hen harrier** (*Circus cynaeus*) and **merlin** (*Falco columbarius*). No scarce species of owl was recorded. Other raptor species of lesser conservation concern were also recorded, including common buzzard (*Buteo buteo*), sparrowhawk (*Accipiter nisus*) and common kestrel (*Falco tinnunculus*).
17. **Red kite** (Annex 1 and Schedule 1) was recorded on 45 occasions during the study period, with 18 records during the breeding season (April to August) and 27 records made during the non-breeding season (September to March).
18. **Goshawk** (Schedule 1) was recorded on nine occasions during the study period, with all records made during two days in March. Eight observations were recorded on 4 March and one observation was recorded on 6 March.
19. **Hen harrier** (Annex 1 and Schedule 1) was recorded on five occasions during the study period, with two records during the breeding season (April to August) and three records made during the non-breeding season (September to March).
20. **Merlin** (Annex 1 and Schedule 1) was recorded once during the non-breeding season (September to March).

Flight activity

21. Forty-five flights involving a total of 58 **red kites** were recorded from VPs during the study period. A total duration of 14,276 seconds of flight activity was recorded, of which 4,525 seconds (32 %) was spent between 50 m and 250 m above ground level (**Table 5; Figure 3**).

Table 5. Details of red kite flights recorded during flight activity surveys.												
Species	Season	VP No.	No of flights	No of birds	Total fly time (s)	Number adjusted total (s)	Time in height band (s)					
							<20m	20-50m	50-100m	100-150m	150-250m	>250m
Red kite	Apr-Aug	2	4	4	820	820	90	151	548	31		
		3	6	6	590	590		61	361	76	92	
		6	8	8	1526	1526	620	389	306	75	106	31
	Sep-Mar	2	11	11	2731	2731	300	1921	511			
		3	12	25	3814	8161	130	5723	2113	195		
		5	1	1	84	84		84				
		6	3	3	364	364	156	97	111			
Red kite Total			45	58	9929	14276	1296	8426	3950	377	198	31

22. Nine flights involving a total of 11 **goshawks** were recorded from VPs during the study period. One flight, involving three birds, was not timed due to observer error. Of the eight flights timed, a total duration of 1,865 seconds of flight activity was recorded, of which 1,136 seconds (61 %) was spent between 50 m to 250 m above ground level (**Table 6; Figure 4**).

Table 6. Details of goshawk flights recorded during flight activity surveys.

Species	Season	VP No.	No of flights	No of birds	Total fly time (s)	Number adjusted total (s)	Time in height band (s)					
							<20m	20-50m	50-100m	100-150m	150-250m	>250m
Goshawk	Sep-Mar	2	2	2	484	484		49	15	195	225	
		3	7	9	1381	1381	47	633	562	139		
Goshawk Total			9	11	1865	1865	47	682	577	334	225	

23. Five flights involving a total of five **hen harriers** were recorded from VPs during the study period. A total duration of 816 seconds of flight activity was recorded, of which 202 seconds (25 %) was spent between 50 m and 250 m above ground level (**Table 7; Figure 4**).

Table 7. Details of hen harrier flights recorded during flight activity surveys.

Species	Season	VP No.	No of flights	No of birds	Total fly time (s)	Number adjusted total (s)	Time in height band (s)					
							<20m	20-50m	50-100m	100-150m	150-250m	>250m
Hen harrier	Apr-Aug	6	2	2	582	592		25	92	46	64	365
	Sep-Mar	3	1	1	79	79	16	63				
		6	2	2	145	145	145					
Hen harrier Total			5	5	806	816	161	88	92	46	64	365

24. A single **merlin** flight was recorded during VP watches. A total duration of 63 seconds of flight activity was recorded, all which was spent between 20 m and 100 m above ground level (**Table 8; Figure 4**).

Table 8. Details of merlin flights recorded during flight activity surveys.

Species	Season	VP No.	No of flights	No of birds	Total fly time (s)	Number adjusted total (s)	Time in height band (s)					
							<20m	20-50m	50-100m	100-150m	150-250m	>250m
Merlin	Sep-Mar	6	1	1	63	63		32	31			
Merlin Total			1	1	63	63		32	31			

Other species

25. Other species recorded during flight activity surveys included raven (*Corvus corax*), buzzard, common kestrel, house martin (*Delichon urbicum*), cuckoo (*Cuculus canorus*), snipe (*Gallinago gallinago*), sparrowhawk and grey heron (*Ardea cinerea*). All these species are common and distributed throughout Scotland (**Table 9**).

Table 9. The percentage of five-minute recording periods in which each species was encountered during watches from all VPs during the study period.

Species	No. of 5-minute periods recorded	Occurrence (%)*
Raven	153	4.427
Buzzard	91	2.633
Red kite	64	1.852
Kestrel	22	0.637
House martin	11	0.318
Goshawk	10	0.289
Cuckoo	8	0.231
Greylag goose	7	0.203
Hen harrier	6	0.174
Snipe	4	0.116
Pink-footed goose	3	0.087
Sparrowhawk	3	0.087
Crossbill	3	0.087
Grey heron	2	0.058
Swallow	2	0.058
Merlin	2	0.058
Starling	2	0.058
Herring gull	1	0.029
Green woodpecker	1	0.029
Mallard	1	0.029
Great black-backed gull	1	0.029
Whooper swan	1	0.029

Birds listed in Annex 1 of the Birds Directive or Schedule 1 of the WCA are shown in bold.

* Total number of 5-minute recording intervals was 3,456.

Appendix 1: Bird species to be recorded during flight activity surveys.

SPECIES RECORDED FOR ASSESSMENT OF FLIGHT ACTIVITY		
Target A species	Target B species	Secondary species
Diver species	Greylag goose	Cormorant
Whooper swan	Barnacle goose	Grey heron
Common Scoter	White-fronted goose	Kestrel
White-tailed eagle	Pink-footed goose	Buzzard
Golden eagle	Brent goose	Sparrowhawk
Hen harrier	Bean goose	Red grouse
Goshawk	Tern species	Grey partridge
Red kite	Arctic skua	Lapwing
Osprey	Great skua	Redshank
Merlin	Herring gull	Common sandpiper
Peregrine	Great black-backed gull	Oystercatcher
Hobby		Snipe
Barn owl		Woodcock
Short-eared owl		Cuckoo
Golden plover		Ring ouzel
Dunlin		Raven
Greenshank		
Whimbrel		(Any flocks >30)
Curlew		
Wood sandpiper		
Black grouse		
Capercaillie		
Nightjar		
Chough		
(Other rare raptors)		

Appendix 2: Weather details during Vantage Point watches

Watch ID	Period	Cloud Cover (10 ^{ths})	Cloud Base	Wind Direction	Wind Force	Precip*	Visibility (km)
SHR_230402_001	0	9	800	SW	1	nil	15
SHR_230402_001	1	8	1000	SW	1	nil	15
SHR_230402_001	2	8	1000	S	2	nil	15
SHR_230402_001	3	7	1000	S	2	nil	15
SHR_230404_001	0	10	400	SSW	2	nil	2
SHR_230404_001	1	10	400	S	2	nil	2
SHR_230404_001	2	10	400	S	2	nil	2
SHR_230404_001	3	10	500	S	2	nil	4
SHR_230407_001	0	3	1500	S	2	nil	15
SHR_230407_001	1	2	1500	S	2	nil	15
SHR_230407_001	2	2	3000	S	2	nil	15
SHR_230407_001	3	3	2000	S	1	nil	15
SHR_230402_002	0	8	700	N	1	nil	15
SHR_230402_002	1	8	700	-	0	nil	15
SHR_230402_002	2	9	800	WNW	1	nil	15
SHR_230402_002	3	9	800	W	1	nil	15
SHR_230403_001	0	7	2000	S	4	nil	15
SHR_230403_001	1	6	2000	S	4	nil	15
SHR_230403_001	2	8	2000	S	3	nil	15
SHR_230403_001	3	8	2000	S	4	nil	15
SHR_230406_001	0	2	1000	WNW	5	nil	15
SHR_230406_001	1	1	1000	NW	5	nil	15
SHR_230406_001	2	2	1000	NW	5	nil	15
SHR_230406_001	3	1	1000	NW	4	nil	15
SHR_230403_002	0	2	600	nil	0	nil	15
SHR_230403_002	1	3	600	NE	1	nil	15
SHR_230403_002	2	4	600	SE	1	nil	15
SHR_230403_002	3	6	600	SE	2	nil	15
SHR_230405_001	0	10	300	S	1	CLR	0.5
SHR_230405_001	1	10	300	S	2	CHR	0.5
SHR_230405_001	2	10	300	S	2	CLR	0.5
SHR_230405_001	3	10	300	S	1	CLR	0.5
SHR_230406_002	0	10	700	SW	1	nil	15
SHR_230406_002	1	10	700	SW	1	nil	15
SHR_230406_002	2	9	1000	SW	2	nil	15
SHR_230406_002	3	10	1000	SW	2	nil	15
SHR_230404_002	0	10	700	S	3	nil	15
SHR_230404_002	1	10	700	SW	3	nil	15
SHR_230404_002	2	10	800	SW	3	nil	15
SHR_230404_002	3	9	1000	S	3	nil	15
SHR_230405_002	0	10	300	S	1	CLR	0.5
SHR_230405_002	1	10	300	S	2	CLR	0.5
SHR_230405_002	2	10	300	S	3	CHR	1
SHR_230405_002	3	10	300	S	2	CLR	1
SHR_230407_002	0	1	1000	S	1	nil	15
SHR_230407_002	1	1	1000	SW	1	nil	15
SHR_230407_002	2	3	1000	SE	2	nil	15
SHR_230407_002	3	5	1000	SSE	2	nil	15
SHR_230503_001	0	10	700	NE	1	nil	10
SHR_230503_001	1	10	1000	NE	1	nil	10
SHR_230503_001	2	9	1000	NE	1	nil	10
SHR_230503_001	3	8	1000	SSW	2	nil	10
SHR_230505_001	0	8	1500	S	2	nil	15
SHR_230505_001	1	7	1500	S	2	nil	15
SHR_230505_001	2	9	600	S	2	nil	15

Watch ID	Period	Cloud Cover (10 ^{ths})	Cloud Base	Wind Direction	Wind Force	Precip*	Visibility (km)
SHR_230505_001	3	9	600	S	1	nil	15
SHR_230507_001	0	7	1500	SSW	2	nil	15
SHR_230507_001	1	8	1500	SSW	2	nil	15
SHR_230507_001	2	7	1000	SSW	2	nil	10
SHR_230507_001	3	8	1000	S	3	nil	10
SHR_230503_002	0	9	1000	SSW	3	nil	10
SHR_230503_002	1	8	1000	S	3	nil	15
SHR_230503_002	2	8	1000	S	3	nil	15
SHR_230503_002	3	8	1000	S	3	nil	15
SHR_230505_002	0	10	400	ESE	2	CLR	2
SHR_230505_002	1	10	300	E	2	CLR	2
SHR_230505_002	2	10	300	E	2	CLR	2
SHR_230505_002	3	10	300	E	2	CLR	2
SHR_230507_002	0	10	600	S	4	nil	10
SHR_230507_002	1	10	600	S	3	nil	10
SHR_230507_002	2	10	200	S	2	nil	2
SHR_230507_002	3	10	200	S	2	nil	2
SHR_230502_001	0	10	600	ESE	1	nil	15
SHR_230502_001	1	10	600	ESE	1	nil	15
SHR_230502_001	2	10	400	ESE	1	ILR	10
SHR_230502_001	3	10	400	ESE	1	nil	10
SHR_230504_001	0	6	1500	E	3	nil	15
SHR_230504_001	1	6	1500	E	3	nil	15
SHR_230504_001	2	6	1500	E	4	nil	15
SHR_230504_001	3	7	1500	E	4	nil	15
SHR_230506_001	0	10	600	S	1	ILR	10
SHR_230506_001	1	10	500	S	1	ILR	5
SHR_230506_001	2	10	400	S	1	nil	2
SHR_230506_001	3	10	500	S	1	nil	5
SHR_230502_002	0	10	600	SSE	1	nil	5
SHR_230502_002	1	10	700	ESE	1	nil	5
SHR_230502_002	2	10	700	SSE	2	nil	5
SHR_230502_002	3	10	800	S	2	nil	5
SHR_230504_002	0	9	1000	E	3	nil	10
SHR_230504_002	1	8	1000	E	3	nil	10
SHR_230504_002	2	8	1000	E	4	nil	10
SHR_230504_002	3	7	1000	E	3	nil	15
SHR_230506_002	0	9	2000	S	1	nil	15
SHR_230506_002	1	9	2000	S	1	nil	15
SHR_230506_002	2	7	2000	S	1	nil	15
SHR_230506_002	3	6	2000	-	0	nil	15
SHR_230602_001	0	4	3000	S	1	nil	20
SHR_230602_001	1	5	3000	S	1	nil	20
SHR_230602_001	2	6	3000	S	1	nil	20
SHR_230602_001	3	5	3000	S	1	nil	20
SHR_230604_001	0	3	3000	S	1	nil	20
SHR_230604_001	1	2	3000	S	1	nil	20
SHR_230604_001	2	1	2000	S	2	nil	20
SHR_230604_001	3	3	2000	S	1	nil	20
SHR_230603_001	0	1	3000	SE	1	nil	20
SHR_230603_001	1	1	3000	SE	1	nil	20
SHR_230603_001	2	2	2000	SSE	2	nil	20
SHR_230603_001	3	2	2000	S	2	nil	20
SHR_230605_001	0	8	2000	SE	2	nil	15
SHR_230605_001	1	8	2000	SE	2	nil	15
SHR_230605_001	2	9	2000	S	2	nil	15
SHR_230603_002	0	4	2000	S	2	nil	20

Watch ID	Period	Cloud Cover (10 ^{ths})	Cloud Base	Wind Direction	Wind Force	Precip*	Visibility (km)
SHR_230603_002	1	6	2000	S	2	nil	20
SHR_230603_002	2	7	2000	S	2	nil	20
SHR_230603_002	3	8	2000	S	2	nil	20
SHR_230605_002	0	1	2000	S	1	nil	20
SHR_230605_002	1	1	2000	S	1	nil	20
SHR_230605_002	2	5	2000	S	2	nil	20
SHR_230605_002	3	7	2000	S	1	nil	20
SHR_230602_002	0	0	-	SE	2	nil	20
SHR_230602_002	1	0	-	SE	1	nil	20
SHR_230602_002	2	0	-	S	1	nil	20
SHR_230602_002	3	0	-	S	1	nil	20
SHR_230604_002	0	8	2000	S	1	nil	20
SHR_230604_002	1	8	2000	N	2	nil	15
SHR_230604_002	2	8	2000	NE	1	nil	15
SHR_230604_002	3	8	2000	NE	2	nil	15
SHR_230704_001	0	10	500	W	3	nil	4
SHR_230704_001	1	10	400	WSW	3	ILR	3
SHR_230704_001	2	10	300	WSW	3	CHR	1
SHR_230704_001	3	10	300	WSW	3	CHR	1
SHR_230706_001	0	10	500	SSW	3	nil	3
SHR_230706_001	1	10	600	SSW	3	ILR	2
SHR_230706_001	2	10	700	SSW	4	nil	3
SHR_230706_001	3	10	700	SSW	3	IHR	3
SHR_230704_002	0	10	300	WSW	3	IHR	1
SHR_230704_002	1	10	400	WSW	3	IHR	1
SHR_230704_002	2	10	300	WSW	2	CHR	1
SHR_230704_002	3	10	400	WSW	3	IHR	1
SHR_230706_002	0	10	500	S	3	CLR	2
SHR_230706_002	1	10	400	S	4	CHR	1
SHR_230706_002	2	10	400	S	3	IHR	2
SHR_230706_002	3	10	400	S	3	IHR	2
SHR_230705_001	0	9	800	W	2	nil	4
SHR_230705_001	1	9	800	W	2	nil	4
SHR_230705_001	2	10	800	W	2	nil	4
SHR_230705_001	3	10	800	W	2	ILR	2
SHR_230707_001	0	10	300	S	5	CHR	1
SHR_230707_001	1	10	300	S	5	CHR	1
SHR_230707_001	2	10	400	S	5	CHR	1
SHR_230707_001	3	10	400	S	4	IHR	1
SHR_230705_002	0	7	800	SW	3	nil	5
SHR_230705_002	1	7	800	SW	3	nil	5
SHR_230705_002	2	8	800	W	3	nil	5
SHR_230705_002	3	9	700	W	4	nil	5
SHR_230720_001	0	5	1000	NW	3	nil	20
SHR_230720_001	1	4	1000	NW	3	nil	20
SHR_230720_001	2	3	1000	NW	3	nil	20
SHR_230720_001	3	4	1000	NW	3	nil	20
SHR_230814_001	0	9	500	-	0	nil	5
SHR_230814_001	1	9	600	NE	1	nil	5
SHR_230814_001	2	8	700	E	3	nil	5
SHR_230814_001	3	8	700	E	3	nil	5
SHR_230816_001	0	8	900	W	3	nil	5
SHR_230816_001	1	8	900	W	2	nil	5
SHR_230816_001	2	9	900	NW	1	nil	5
SHR_230816_001	3	8	900	N	2	nil	5
SHR_230814_002	0	8	700	SE	3	nil	5
SHR_230814_002	1	8	700	SE	3	nil	5

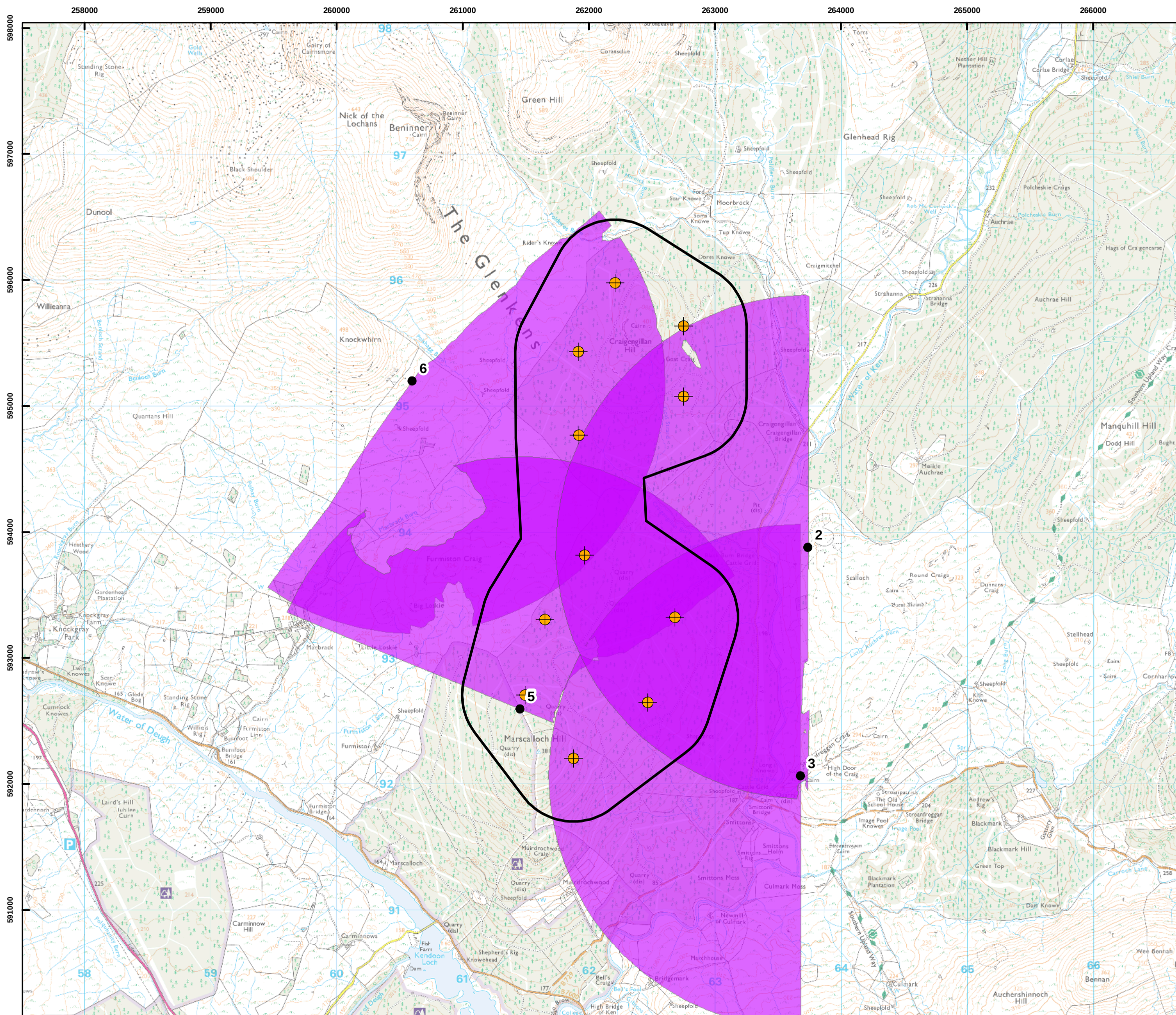
Watch ID	Period	Cloud Cover (10 ^{ths})	Cloud Base	Wind Direction	Wind Force	Precip*	Visibility (km)
SHR_230814_002	2	9	800	SE	3	nil	5
SHR_230814_002	3	9	800	nil	0	nil	5
SHR_230816_002	0	10	800	SW	1	nil	5
SHR_230816_002	1	9	800	SW	1	nil	5
SHR_230816_002	2	7	900	SSW	2	nil	5
SHR_230816_002	3	8	900	S	3	nil	5
SHR_230804_001	0	6	900	NW	4	nil	5
SHR_230804_001	1	6	900	NW	4	nil	5
SHR_230804_001	2	7	800	NW	4	nil	5
SHR_230804_001	3	6	800	NW	4	nil	5
SHR_230815_001	0	8	500	NW	2	nil	5
SHR_230815_001	1	8	500	NW	3	nil	5
SHR_230815_001	2	8	500	NW	3	nil	5
SHR_230815_001	3	7	600	NW	3	nil	5
SHR_230804_002	0	5	900	NW	4	nil	5
SHR_230804_002	1	4	900	NW	4	nil	5
SHR_230804_002	2	6	900	NW	4	nil	5
SHR_230804_002	3	6	900	NW	4	nil	5
SHR_230815_002	0	8	800	NW	3	nil	5
SHR_230815_002	1	9	700	NW	3	nil	5
SHR_230815_002	2	8	700	NW	4	nil	5
SHR_230815_002	3	6	800	NW	4	nil	5
SHR_230905_001	0	0	-	nil	0	nil	5
SHR_230905_001	1	0	-	SE	1	nil	5
SHR_230905_001	2	0	-	ESE	3	nil	5
SHR_230905_001	3	1	1500	E	3	nil	5
SHR_230907_001	0	7	1000	NE	2	nil	4
SHR_230907_001	1	9	1000	E	2	nil	4
SHR_230907_001	2	10	1000	SE	3	nil	4
SHR_230907_001	3	10	1000	SE	3	nil	4
SHR_230905_002	0	1	1500	E	3	nil	5
SHR_230905_002	1	0	-	E	3	nil	5
SHR_230905_002	2	0	-	E	3	nil	5
SHR_230905_002	3	0	-	E	3	nil	5
SHR_230907_002	0	4	1000	SE	2	nil	5
SHR_230907_002	1	3	1000	SE	1	nil	5
SHR_230907_002	2	2	1000	E	2	nil	5
SHR_230907_002	3	5	1000	SE	2	nil	5
SHR_230904_001	0	8	300	SW	2	IHF	1
SHR_230904_001	1	7	500	SW	2	ILF	2
SHR_230904_001	2	5	600	WSW	2	nil	5
SHR_230904_001	3	3	900	WSW	2	nil	5
SHR_230906_001	0	3	1000	SE	3	nil	5
SHR_230906_001	1	3	900	SE	3	nil	5
SHR_230906_001	2	5	800	SE	3	nil	5
SHR_230906_001	3	3	900	SE	3	nil	5
SHR_230904_002	0	2	900	SSW	3	nil	5
SHR_230904_002	1	2	900	SW	3	nil	5
SHR_230904_002	2	1	900	SW	3	nil	5
SHR_230904_002	3	0	-	WSW	3	nil	5
SHR_230906_002	0	9	900	NE	2	nil	3
SHR_230906_002	1	9	900	E	1	nil	3
SHR_230906_002	2	7	1000	NE	1	nil	4
SHR_230906_002	3	2	1500	SE	3	nil	5
SHR_231017_001	0	9	1000	SE	4	nil	5
SHR_231017_001	1	9	1000	SE	4	nil	5
SHR_231017_001	2	10	1000	SE	4	nil	5

Watch ID	Period	Cloud Cover (10 ^{ths})	Cloud Base	Wind Direction	Wind Force	Precip*	Visibility (km)
SHR_231017_001	3	10	800	SE	4	nil	5
SHR_231020_001	0	10	900	ENE	5	nil	5
SHR_231020_001	1	9	900	ENE	6	nil	5
SHR_231020_001	2	10	900	E	5	nil	5
SHR_231020_001	3	10	800	E	6	nil	5
SHR_231017_002	0	9	1000	NE	2	nil	5
SHR_231017_002	1	9	1000	NE	2	nil	5
SHR_231017_002	2	10	1000	NE	3	nil	5
SHR_231017_002	3	9	1000	E	4	nil	5
SHR_231018_001	0	7	900	E	5	nil	5
SHR_231018_001	1	7	1000	E	5	nil	5
SHR_231018_001	2	7	1000	E	5	nil	5
SHR_231018_001	3	7	1000	E	5	nil	5
SHR_231016_001	0	10	800	-	0	nil	5
SHR_231016_001	1	10	900	-	0	nil	5
SHR_231016_001	2	10	600	SSE	1	CLR	2
SHR_231016_001	3	10	600	SE	2	ILR	3
SHR_231020_002	0	10	900	E	6	nil	5
SHR_231020_002	1	9	900	E	6	nil	5
SHR_231020_002	2	9	800	E	6	nil	5
SHR_231020_002	3	9	800	E	6	nil	5
SHR_231016_002	0	9	600	SE	2	nil	5
SHR_231016_002	1	9	600	SE	2	nil	5
SHR_231016_002	2	8	700	S	2	nil	5
SHR_231016_002	3	8	700	SW	2	nil	5
SHR_231018_002	0	8	800	ENE	5	nil	5
SHR_231018_002	1	9	800	E	5	nil	5
SHR_231018_002	2	9	900	E	5	nil	5
SHR_231018_002	3	7	900	E	5	nil	5
SHR_231117_001	0	0	-	N	1	CLF	2
SHR_231117_001	1	0	-	-	0	ILF	2
SHR_231117_001	2	0	-	NW	1	ILF	2
SHR_231117_001	3	9	300	SW	2	ILF	2
SHR_231117_002	0	10	300	S	1	ILF	2
SHR_231117_002	1	10	300	S	2	ILF	2
SHR_231117_002	2	10	300	E	2	nil	3
SHR_231117_002	3	10	300	E	2	nil	3
SHR_231113_001	0	9	500	WNW	3	nil	5
SHR_231113_001	1	10	400	WNW	3	ILR	3
SHR_231113_001	2	10	600	WNW	4	ILR	4
SHR_231113_001	3	10	400	W	4	ILR	2
SHR_231127_001	0	2	900	NNE	3	nil	5
SHR_231127_001	1	4	900	NNE	4	nil	5
SHR_231127_001	2	4	900	N	4	nil	5
SHR_231127_001	3	3	900	N	4	nil	5
SHR_231113_002	0	10	500	S	4	ILR	2
SHR_231113_002	1	10	500	SSE	4	ILR	2
SHR_231113_002	2	10	300	SW	4	CLR	1
SHR_231113_002	3	10	300	W	3	CLF	0.5
SHR_231128_001	0	7	900	NNE	3	nil	5
SHR_231128_001	1	7	900	NNW	2	nil	5
SHR_231128_001	2	7	900	NNW	2	nil	5
SHR_231128_001	3	3	900	N	2	nil	5
SHR_231127_002	0	5	900	NNE	4	nil	5
SHR_231127_002	1	5	900	NNE	5	nil	5
SHR_231127_002	2	4	900	NNE	5	nil	5
SHR_231127_002	3	7	700	NNE	5	ILH	3

Watch ID	Period	Cloud Cover (10 ^{ths})	Cloud Base	Wind Direction	Wind Force	Precip*	Visibility (km)
SHR_231128_002	0	6	900	-	0	nil	5
SHR_231128_002	1	8	900	-	0	nil	5
SHR_231128_002	2	7	900	NNE	1	nil	5
SHR_231128_002	3	5	900	NNE	2	nil	5
SHR_231130_001	0	0	-	NE	3	nil	5
SHR_231130_001	1	0	-	NE	3	nil	5
SHR_231130_001	2	0	-	NE	3	nil	5
SHR_231206_001	0	2	1000	nil	0	nil	5
SHR_231206_001	1	2	1000	ESE	1	nil	5
SHR_231206_001	2	6	2000	E	2	nil	5
SHR_231218_001	0	10	300	SW	3	ILR	2
SHR_231218_001	1	10	500	SW	3	nil	4
SHR_231218_001	2	10	400	SW	4	IHR	2
SHR_231206_002	0	4	2000	E	3	nil	5
SHR_231206_002	1	2	2000	E	3	nil	5
SHR_231206_002	2	5	1000	ESE	2	nil	5
SHR_231208_001	0	10	300	SSE	3	ILR	1
SHR_231208_001	1	10	300	SSE	4	ILR	2
SHR_231208_001	2	10	300	SSE	4	IHR	1
SHR_231204_001	0	9	700	NE	4	nil	5
SHR_231204_001	1	10	700	NE	4	nil	5
SHR_231204_001	2	10	700	NE	4	nil	5
SHR_231205_001	0	6	900	E	3	nil	5
SHR_231205_001	1	6	900	E	3	nil	5
SHR_231205_001	2	5	1000	NE	2	nil	5
SHR_231205_002	0	4	1000	NE	3	nil	5
SHR_231205_002	1	2	1000	NE	3	nil	5
SHR_231205_002	2	0	-	NE	3	nil	5
SHR_240104_001	0	9	600	-	0	ILF	2
SHR_240104_001	1	8	600	S	1	ILF	2
SHR_240104_001	2	10	300	S	1	ILR	1
SHR_240126_001	0	3	800	WSW	3	nil	5
SHR_240126_001	1	5	800	SW	4	nil	5
SHR_240126_001	2	7	800	SW	4	nil	5
SHR_240104_002	0	10	300	SSW	2	CLF	2
SHR_240104_002	1	9	300	SSW	2	CLF	2
SHR_240104_002	2	8	300	SSW	2	CLF	2
SHR_240126_002	0	8	500	WNW	3	nil	5
SHR_240126_002	1	4	700	WNW	3	nil	5
SHR_240126_002	2	5	800	W	3	nil	5
SHR_240103_001	0	9	500	-	0	ILF	1
SHR_240103_001	1	10	500	-	0	ILF	1
SHR_240103_001	2	9	500	-	0	ILF	1
SHR_240105_001	0	3	700	NW	4	nil	5
SHR_240105_001	1	3	700	NW	4	nil	5
SHR_240105_001	2	2	700	NW	4	nil	5
SHR_240103_002	0	9	500	WSW	1	ILF	2
SHR_240103_002	1	10	500	WSW	1	ILF	2
SHR_240103_002	2	9	500	WSW	1	ILR	2
SHR_240105_002	0	7	700	NW	4	nil	5
SHR_240105_002	1	7	700	NW	4	nil	5
SHR_240105_002	2	6	700	NW	4	nil	5
SHR_240201_001	0	10	400	WSW	3	ILR	2
SHR_240201_001	1	10	500	WSW	3	nil	3
SHR_240201_001	2	10	600	W	4	nil	5
SHR_240208_001	0	10	700	E	4	CLS	2
SHR_240208_001	1	10	500	E	3	CLS	1

Watch ID	Period	Cloud Cover (10 ^{ths})	Cloud Base	Wind Direction	Wind Force	Precip*	Visibility (km)
SHR_240208_001	2	10	500	ENE	3	CLS	1
SHR_240201_002	0	10	700	W	3	nil	5
SHR_240201_002	1	10	800	W	3	nil	5
SHR_240201_002	2	10	800	WSW	3	nil	5
SHR_240208_002	0	10	800	E	4	nil	5
SHR_240208_002	1	10	800	E	3	nil	5
SHR_240208_002	2	10	800	E	3	ILS	3
SHR_240202_001	0	9	600	W	5	nil	5
SHR_240202_001	1	10	500	W	5	nil	5
SHR_240202_001	2	10	500	W	5	ILR	4
SHR_240207_001	0	8	600	SW	1	ILR	2
SHR_240207_001	1	6	700	W	2	nil	5
SHR_240207_001	2	5	700	W	3	nil	5
SHR_240202_002	0	10	600	WSW	5	nil	5
SHR_240202_002	1	10	600	WSW	5	nil	5
SHR_240202_002	2	10	600	WSW	6	nil	5
SHR_240207_002	0	5	800	WNW	3	nil	5
SHR_240207_002	1	6	800	WNW	3	nil	5
SHR_240207_002	2	7	800	W	2	nil	5
SHR_240304_001	0	7	900	SE	4	nil	5
SHR_240304_001	1	7	900	SE	4	nil	5
SHR_240304_001	2	6	900	SE	4	nil	5
SHR_240304_001	3	3	1000	SE	4	nil	5
SHR_240306_001	0	6	500	SE	4	ILF	2
SHR_240306_001	1	7	600	SE	4	ILF	3
SHR_240306_001	2	6	700	SE	4	nil	5
SHR_240306_001	3	8	800	SE	4	nil	5
SHR_240304_002	0	5	900	E	3	nil	5
SHR_240304_002	1	4	900	E	3	nil	5
SHR_240304_002	2	4	1000	E	4	nil	5
SHR_240304_002	3	6	900	SE	4	nil	5
SHR_240306_002	0	7	900	SE	3	nil	5
SHR_240306_002	1	9	900	SE	3	nil	5
SHR_240306_002	2	8	900	SE	3	nil	5
SHR_240306_002	3	6	900	SE	3	nil	5
SHR_240305_001	0	5	500	SE	5	nil	5
SHR_240305_001	1	8	500	SE	5	nil	4
SHR_240305_001	2	9	600	SE	4	nil	5
SHR_240305_001	3	9	700	SE	4	nil	5
SHR_240307_001	0	5	900	E	5	nil	5
SHR_240307_001	1	7	900	E	5	nil	5
SHR_240307_001	2	5	900	ESE	5	nil	5
SHR_240307_001	3	7	800	SE	5	nil	5
SHR_240305_002	0	10	300	SE	4	CLR	1
SHR_240305_002	1	10	300	S	4	CLR	1
SHR_240305_002	2	10	300	S	4	ILR	2
SHR_240305_002	3	10	300	S	3	ILR	2
SHR_240307_002	0	6	700	SE	3	nil	2
SHR_240307_002	1	7	700	SE	4	nil	2
SHR_240307_002	2	7	800	SE	4	nil	3
SHR_240307_002	3	7	800	SE	4	nil	4

*Precipitation codes: Continuous/Intermittent + Light/Heavy + Rain/Snow/Hail/Fog



Key

- Proposed turbine locations
- Flight Activity Survey Area
- Vantage Points
- Viewsheds

Date produced: 02/04/2026
Source: NRP LTD

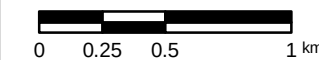
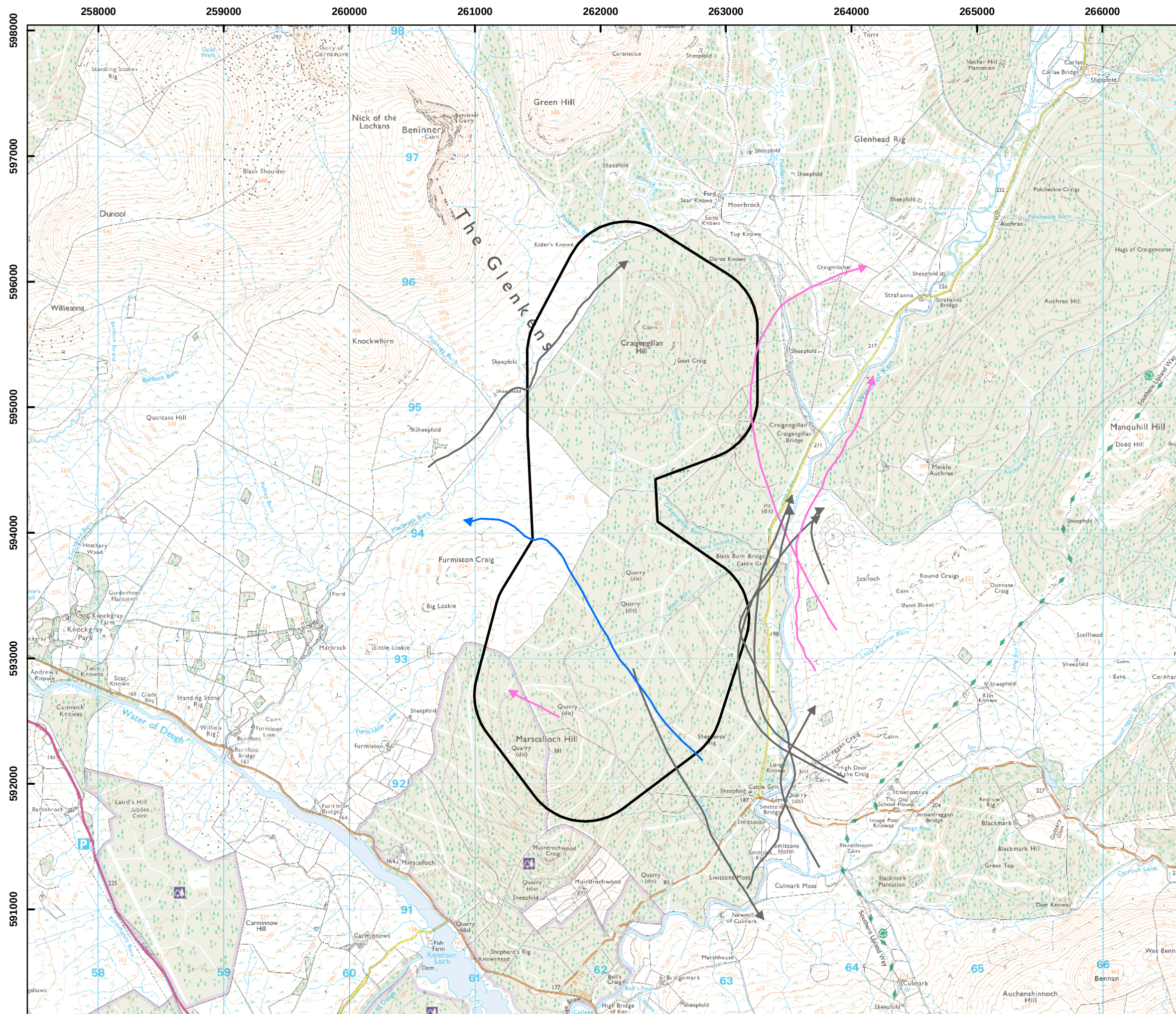


Figure 1.

Vantage Points and viewsheds

Shepherd's Rig



n r p NATURAL RESEARCH
PROJECTS LIMITED

Key

Flight Activity Survey Area

Flight lines

Greylag goose

Pink-footed goose

Whooper swan

Date produced: 02/04/2026

Source: NRP LTD

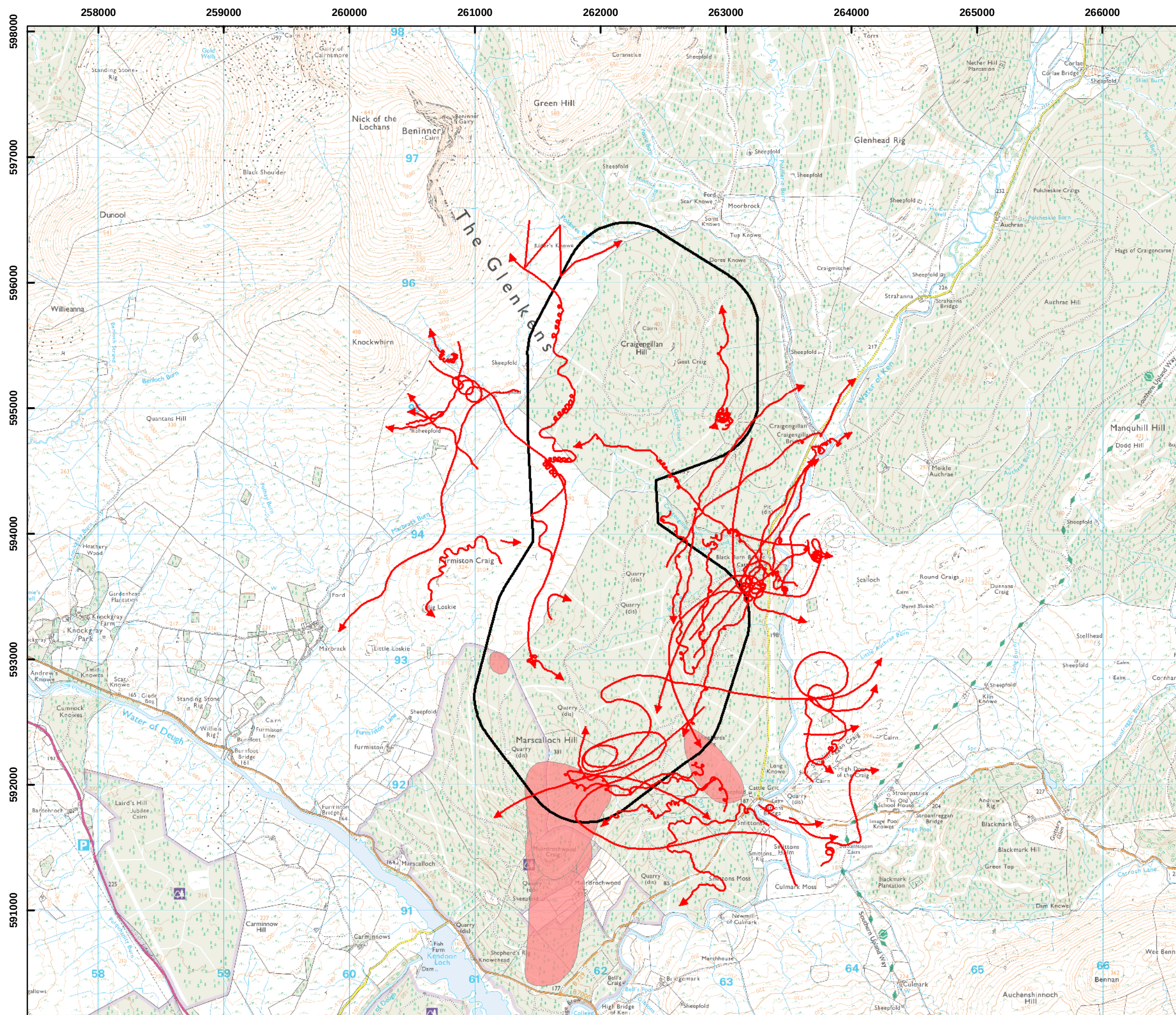
0 0.25 0.5 1 km



Figure 2.

**Wildfowl flights recorded during
VP watches, April 2023 to March
2024**

Shepherds' Rig Wind Farm



Key

- Flight Activity Survey Area
- Flight lines
- Flight areas

Date produced: 02/04/2026
Source: NRP LTD

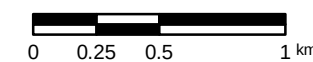
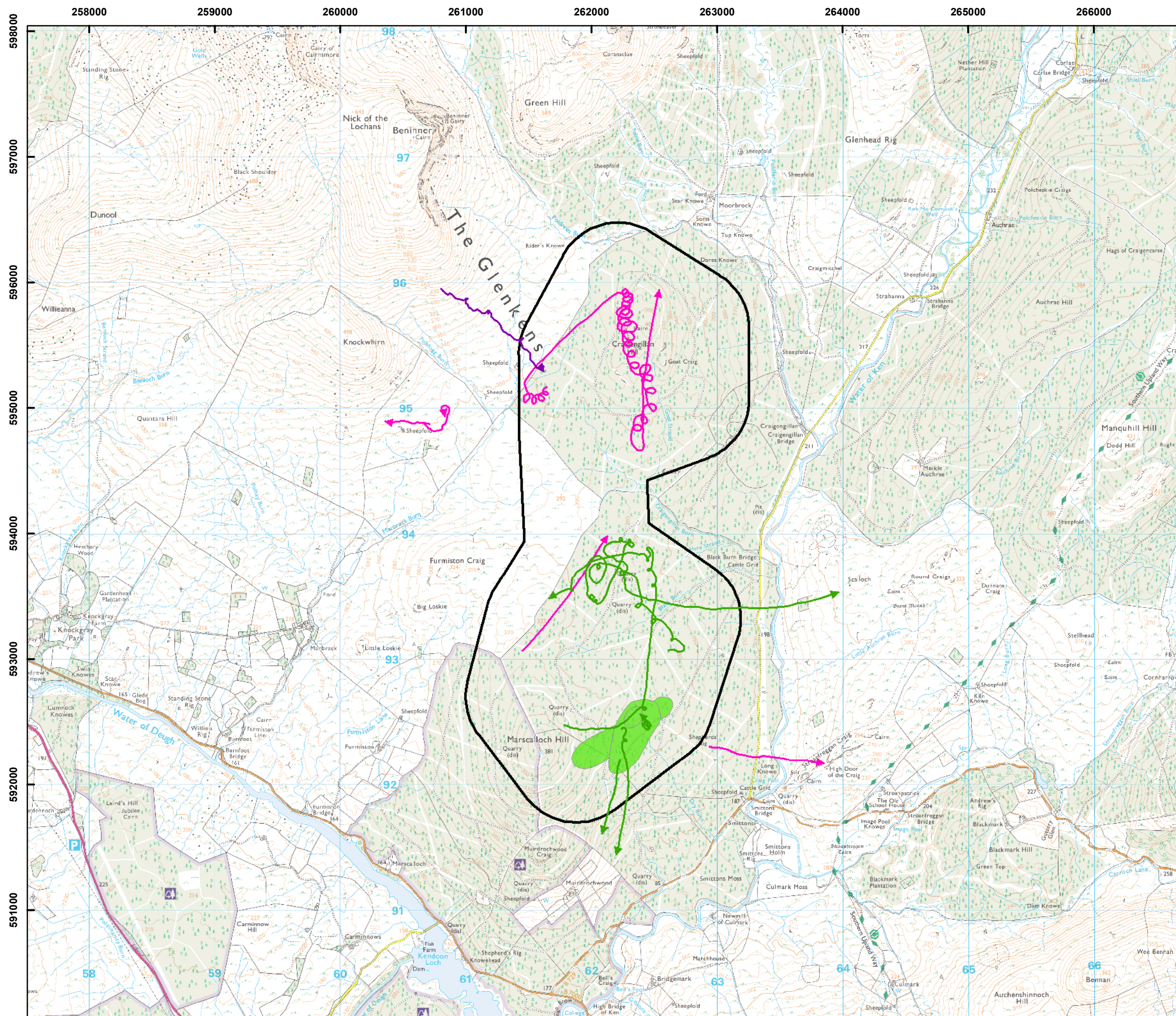


Figure 3.
**Red kite flights recorded during
VP watches, April 2023 to March
2024**

Shepherds' Rig Wind Farm



n r p NATURAL RESEARCH
PROJECTS LIMITED

Key

Flight Activity Survey Area

Flight lines

Goshawk

Hen harrier

Merlin

Flight areas

Goshawk

Date produced: 03/04/2026

Source: NRP LTD

0 0.25 0.5 1 km



Figure 4.

**Goshawk, hen harrier and merlin
flights recorded during VP
watches, April 2023 to March
2024**

Shepherds' Rig Wind Farm