ANNEX A. ORNITHOLOGICAL LEGAL PROTECTION

In Scotland, all wild birds are protected under the Wildlife and Countryside Act 1981 (the 'Act'), as amended by the Nature Conservation (Scotland) Act 2004. This protection also extends to their eggs and nests, with it being an offence to intentionally or recklessly[1]:

- Kill, injure or take any wild bird[2];
- Take, damage, destroy or otherwise interfere with the nest of any wild bird while it is being built or is in use[3];
- At any other time take, damage, destroy or otherwise interfere with any nest habitually used by any wild bird included in Schedule A1 (Protected Nests and Nest Sites for Birds: white-tailed eagle and golden eagle)[4];
- Obstruct or prevent any wild bird from using its nest[5]; or
- Take or destroy an egg of any wild bird[6].

It is also an offence to have in possession or control any live or dead wild bird or any part thereof; or any egg or part of an egg of any wild bird[7].

Further special protection under this legislation is afforded to those species listed on Schedule 1 of the Act. For these species, it is an offence to:

- Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or is in, on or near a nest containing eggs or young, or disturb the dependent young of such a bird[8];
- Intentionally or recklessly disturb any wild birds included on Schedule 1 which leks, while it is doing so[9] (capercaillie is the only bird this offence applies to in Scotland);
- Intentionally or recklessly harass any wild bird included in Schedule 1A[10]. Section 1, subsection 5B states, '*Subject to the provisions of this Part, any person who intentionally or recklessly harasses any wild bird included in Schedule 1A shall be guilty of an offence*'. At this time, Schedule 1A includes golden eagle, hen harrier, red kite and white-tailed eagle. This updated legislation was introduced on 16 March 2013; or
- Intentionally or recklessly take, damage, destroy or otherwise interfere with any nest and/or nest site habitually used by any bird on Schedule A1 at any time. At this time, Schedule 1A includes golden eagle and white-tailed eagle[11];

It is also an offence to knowingly cause or permit to be done an act which is made unlawful by any of the above provisions.

Further protection is described under the EU Birds Directive which requires member states to maintain wild bird species in favourable conservation status[12] and promote the conservation of bird species listed within Annex 1 of the Birds Directive through the protection of their habitat. This is achieved via the designation of Special Protection Areas (SPAs).

Red List bird species are those deemed to be globally threatened and to be suffering population declines within the UK. Although not legally enforceable, the conservation of Red List bird species represents a material consideration, in planning terms.

[1] Exceptions to these offences exist under various circumstances (e.g. controlling pest species; taking birds during specific season; and killing sick or injured birds etc.).
[2] Wildlife and Countryside Act 1981, Section 1(1)(a)
[3] Wildlife and Countryside Act 1981, Section 1(1)(b)
[4] Wildlife and Countryside Act 1981, Section 1(1)(ba)
[5] Wildlife and Countryside Act 1981, Section 1(1)(bb)
[6] Wildlife and Countryside Act 1981, Section 1(1)(c)
[7] Wildlife and Countryside Act 1981, Section 1(2)
[8] Wildlife and Countryside Act 1981, Section 1(5)
[9] Wildlife and Countryside Act 1981, Section 1(5A)
[10] Wildlife and Countryside Act 1981, Section 1(5B)
[11] This reflects the changes introduced by the Wildlife and Countryside Act 1981 (as amended by: Variation of Schedules A1 and 1A (Scotland) Order 2013.
[12] While the term 'favourable conservation status' is not used in the Birds Directive, EU court cases over recent years have progressively interpreted the concept as meaningful in a Birds Directive context (SNH, 2006).

ANNEX B. ORNITHOLOGICAL SURVEY METHODOLOGY

A range of ornithological surveys have been conducted at the proposed Millmoor Rig Wind Farm (the Proposed Development). The methodologies used in these surveys are summarised in the sections below; more detailed descriptions are provided in the relevant NatureScot guidance available at the time of the surveys (2010[i], 2013[ii], 2014[iii], 2017[iv]) on which these surveys are based.

Survey Areas

Surveys were undertaken during the 2011, 2012, 2013, 2015 and 2021 breeding and 2011/2012, 2012/2013, 2013/2014 and 2020/2021 non-breeding seasons. Survey buffers for the previous (now withdrawn) Highlee Hill submission were based on the proposed Highlee Hill site boundary (which was revised in 2013 to include an area of open ground to the north). The more recent survey buffers for the Proposed Development (between 2020 and 2021) were based on a developable area.

B.1 Flight Activity Surveys

The aims of the flight activity (vantage point) surveys are: (1) to record flight activity within the vicinity of the site in order to identify areas of importance to birds; and (2) to quantify flight activity within 500 m of proposed turbine locations in order to estimate the likelihood of collision.

Timing

- a survey period of 36 hours is recommended as the minimum level of sampling intensity at each VP for each season (breeding, non-breeding, migratory);
- watches were spread as evenly throughout the year as possible to ensure that temporally representative data are collected (see **Annex C**). Specific consideration was given to the period around dawn and twilight for breeding waders and to changing raptor behaviour across seasons;
- watches were suspended and resumed to take account of changes in visibility (e.g., fluctuations in cloud base). Watches were undertaken in conditions of good ground visibility when the cloud base was higher than the most elevated ground being observed; and
- watches were conducted in a range of weather conditions and were spread throughout the day (see **Annex C** and **Annex D**).

Field Methods

- viewshed analysis was conducted using ArcGIS to confirm suitable Vantage Point (VP) locations and their associated visible areas at 20m above ground level[1];
- reconnaissance surveys were undertaken to refine VP locations;
- the VP locations and associated viewsheds are shown in **Figure 9.1**, **Figure 9.2** and **Figure 9.3**;
- care was taken to maximize the area visible whilst minimising disturbance to birds;
- the VP locations were selected with the aim of achieving coverage of all the proposed turbine locations such that no turbine was more than 2 km from a VP. This objective was achieved for the majority of the turbines, although one turbine (T9) was not covered by any of the viewsheds (**Annex E** details how this is taken into account in the collision modelling);
- a maximum 180° view arc was scanned by surveyors. This rule did not however apply when tracking migratory waterfowl or raptors across the site; and
- each watch lasted a maximum of three hours but was suspended and then resumed to take account of changes in visibility (e.g., fluctuations in the cloud base).

For each target and secondary species, the following data were recorded:

- the flightlines by individuals or flocks of birds;
- the time the target bird was detected, and the duration (seconds) spent flying over a defined survey area (the viewshed);
- the birds' flight heights, defined into prescribed height bands[2] were recorded at the point of detection and at 15 second intervals thereafter. From this the proportion of time spent flying below, within (referred to as Potential Collision Height (PCH)) and above approximate rotor height could be estimated. The difference between the height bands and the proposed turbine tip heights/ground clearances detailed in **Annex E** is accounted for within the collision risk models on the assumption of even flight distribution within each height band;
- the route followed was plotted in the field onto 1:25,000 scale maps;
- observations of target species took priority over recording secondary species if both species were present simultaneously;
- the number of birds recorded were the minimum number of individuals that could account for the activity observed; and
- observers only recorded perched birds and birds on waterbodies once only on arrival at the VP. Thereafter only flying birds and newly noticed perched/swimming birds were included in the activity summaries.

B.2 Moorland Breeding Bird Survey

Upland breeding bird survey methodology was employed as detailed within the relevant NatureScot guidance at the time of surveys. In summary, surveys involved the following:

- open upland (including hedgerows, scrub, isolated trees and copses) was surveyed using an intensive version of the Brown and Shepherd (1993[v]) method for upland bird survey;
- the objectives were to map the distribution of breeding bird territories within 500 m of the site and estimate the approximate size of breeding bird populations;
- after each survey visit one overview map was then produced showing all target species. The maps from all four survey visits from that year were then compared, enabling the estimation of numbers of breeding territories. This was done by grouping the observations into territories using the methodology described by Bibby *et al*. (2000[vi]). Due to the cryptic nature of many breeding birds and the necessary assumptions

[1] The viewsheds are based on a 5m DTM to provide a representation of visibility from the observer locations; this is confirmed and refined through field site visits.

[2] Surveys prior to April 2014 were based on three height bands (0-20 m, 21-125 m, >126 m) and surveys post April 2014 were based on five height bands (0-20 m, 21-40 m, 41-100 m, 101-150 m and >151 m).

made when plotting territories, a minimum and maximum number of territories was identified for each target species;

- the survey covered all areas within 500 m of the site; and
- all upland wader species were recorded during the breeding bird survey.

Timing

- as recommended in Calladine *et al.* (2009[vii]), four survey visits were undertaken between April and July in 2013 following updated NatureScot guidance (SNH 2013[ii]);
- fieldwork was undertaken between sunrise and 1800hrs; and
- fieldwork was not undertaken in conditions considered likely to affect bird detection rates, for example in winds greater than Beaufort Scale Force 4, persistent precipitation, poor visibility (less than 300 m), or in unusually hot weather.

Field Methods

- walk-routes which optimised ground visibility were used;
- surveyors paused at appropriate vantage and listening points;
- isolated trees, copses and patches of scrub were approached and examined;
- streams, ditches and hedgerows were walked;
- all other areas were approached to within 100 m; and
- registrations were mapped at the first location that behaviour indicative of breeding was observed; and
- standard British Trust for Ornithology (BTO) activity codes were used.

B.3 Winter Walkover

Winter walkovers were performed in the non-breeding seasons to map wintering populations of birds within 500 m of the site.

- the area was surveyed three times during each non-breeding season;
- these surveys involved following a route that optimised ground coverage, such that observers walked within 250 m of every point; and
- observers periodically stopped at appropriate viewing and listening points along the route and longer vantage point watches were included within the walkover to allow potentially important areas to be monitored in greater detail.

[3] All surveyors hold SNH Schedule 1 Licences.

B.4 Scarce Breeding Bird Survey

The aim of the scarce breeding bird surveys was to determine the distribution of occupied nests/territories for target raptor and owl species within 2 km of the site and record breeding success. Secondary species such as buzzard, sparrowhawk and kestrel were also noted but location of their nests was not the key focus of the surveys.

Surveys were undertaken by experienced and licensed[3] field ornithologists. Extreme care was taken to avoid unnecessary disturbance to breeding birds.

Guidance from NatureScot, '*Bird Monitoring Methods*' (Gilbert *et al.* 1998[viii]) and '*Raptors: a field guide to survey and monitoring*' (Hardey *et al. 2009*[ix], 2013[x]) were all consulted to inform survey methodology and are referenced where appropriate in the species methodologies below.

Barn Owl

- the surveys followed methodology outlined in Gilbert *et al.* (1998[viii]);
- surveys were undertaken within 1 km of the site; and
- surveyors checked for signs of occupation (moulted feathers, pellets) in all suitable buildings within this 1 km buffer.

Goshawk

Methodology outlined in Hardey *et al.* (2009[ix], 2013[x]) was used as guidance for the surveying of areas for potential goshawk breeding. Extreme care was taken not to disturb potential nests especially around the time of year when females were likely to be laying or incubating.

- areas of suitable woodland were observed for the presence of nests. Searches for goshawk nests were focused on mature forestry blocks, although their presence was not ruled out of other wooded areas;
- searches carried out between March and April focussed on observing territorial and nest building behaviours;
- where nests were known to be present, scans were carried out between mid-March and May to confirm breeding. Scans were kept brief – carried out for between 5-10 minutes and from a distance; and
- when breeding was confirmed, searches for further nests were deferred until such a time as the young had hatched. Searches were then undertaken between late May and late June for evidence of provisioning young and then between late July and early August to watch for fledgling activity, this included listening for the begging calls of newly fledged young.

Hen Harrier

Methodology outlined in Hardey *et al*. (2009[ix], 2013[x]) was used as guidance for the surveying of areas for potential hen harrier breeding. Extreme care was taken not to disturb potential nests especially around the time of year when females were likely to be laying or in cold/wet weather when females were likely to be incubating or brooding. Areas of suitable habitat[4] were visited during four time periods across the breeding season to:

[4] Unsuitable habitat areas include: land above 600 m; improved pasture and arable land; extensive areas of degraded land with no heather cover and low vegetation; the vicinity of cliffs, rocky outcrops, boulder fields and scree; areas within 100 m of hill farms and occupied dwellings.

- check for territory occupancy (between March and mid-April) – this consisted of watching over suitable habitat from a good vantage point for displaying males (and females) and checking all areas of suitable habitat to within 250 m (watching out for signs of kills);
- locate incubating females (between mid-April and late May) by listening for female begging calls and watching for food passes between the male and female – surveyors watched for at least four hours as Hardey *et al.* (2013) notes that when the female is incubating it can be up to six hours between feeding visits from the male, but on average it is less than every four hours. Surveys were undertaken between 06:00 to 12:00 or 16:00 to 20:00;
- check for young or breeding evidence (between late May and late June) again by listening for female begging calls and watching for food passes between male and female when the female is brooding and watching for the male and female provisioning the nest with food once brooding has ended– surveyors should watch for at least two hours as Hardey *et al.* (2009[ix], 2013[x]) notes that an adult bird will visit the nest every 1-2 hours. Surveyors should also watch for display behaviour which could indicate a failed breeding attempt; and
- check for fledged young (between late June and late August).

Merlin

Methodology outlined in Hardey *et al.* (2009[ix], 2013[x]) was used as guidance for the surveying of areas for potential merlin breeding.

- areas of suitable nesting habitat (including forest edge where trees are >5 m high) were closely observed between 20th March and 30th April;
- boulders, fence lines, isolated posts, stone dykes, grouse butts, hummocks, stream banks, crags, trees and recently burnt areas of heather were checked for signs of occupation (e.g., plucked prey, moulted feathers, pellets and faeces);
- if merlin were observed, or signs found, areas were visited at least twice to verify occupation of the territory; and
- potential nest areas were watched for 4-6 hours if necessary.

Osprey

Methodology outlined in Hardey *et al.* (2009[ix], 2013[x]) and Gilbert *et al.* (1998[viii]) was used as guidance for the surveying of areas for potential osprey breeding. Care was taken when carrying out the searches so as not to disturb any displaying or nesting birds, with nests checked from a distance.

- all wooded areas within the study area were searched for the possible presence of nests, especially those located close to freshwater lochs and rivers that could provide feeding sites. Artificial platforms were also checked;
- if breeding was suspected within the study area, the location was visited between April and May until nesting was confirmed;
- in line with the methods suggested by Gilbert *et al.* (1998[viii]) and Hardey *et al.* (2009[ix], 2013[x]), proof of occupancy was determined by:
  - two ospreys seen on the same eyrie on more than one occasion (with a week separating observations);
  - incubation; or
  - feeding of chicks.
- further scans were undertaken between late May and early July to try and observe any young in the nests.

Peregrine Falcon

- potential nest sites were visited and checked for evidence of occupation between March and April;
- sites checked included crags and steep banks identified from OS maps and searches of the survey area;
- surveyors checked for signs of occupation (e.g. faecal splash, fresh plucked prey);
- if occupied sites were found they were re-visited to verify incubation; and
- searches were made for eyries. Where this was not possible sites were watched from a suitable vantage point for 3-4 hours or until a nest was located.

Short-Eared Owl

- at least two visits between early April and the end of May were carried out;
- suitable habitat was visited and checked for evidence of hunting males, territorial activity and other signs of presence; and
- if breeding was confirmed, a further visit was be made in June to watch birds, locate nest-sites and confirm breeding behaviour wherever possible.

B.5 Black Grouse Survey

The survey methodology used is detailed within the relevant NatureScot guidance at the time of surveys. A summary is provided below.

- breeding black grouse were surveyed within 1.5 km of the site by counting total numbers of males and females at leks, most lekking activity taking place at or soon after dawn in spring.
- known lek sites and other areas of suitable habitat which can host leks were identified and visited during April and May within 2 hours of dawn on calm dry days with good visibility;
- visits involved listening and scanning for lekking black grouse from strategic locations (avoiding disturbance of leks) and during walks between these locations ensuring that all potential habitat was covered;
- the maximum count of males in the 2 hours around dawn gives the standard count estimate but the maximum number of females seen was also presented; and
- leks that were at least 200 m apart within the same year were treated as separate leks.

[i] Scottish Natural Heritage (2010) Survey Methods for Use in Assessing the Impacts of Onshore Windfarms on Bird Communities.
[ii] Scottish Natural Heritage (2013) Survey Methods for use in assessing the impacts of onshore Windfarms on Bird Communities.
[iii] Scottish Natural Heritage (2014) Recommended Bird Survey Methods to inform impact assessment of Onshore Windfarms.
[iv] Scottish Natural Heritage (2017) Recommended bird survey methods to inform impact assessment of onshore windfarms.
[v] Brown, A. F. and Shepherd, K. B. (1993) A method for censusing upland breeding waders. Bird Study, 40: 189-195.
[vi] Bibby, C. J., Neil D. Burgess, David A. Hill and Simon H. Mustoe (2000) Bird Census Techniques, 2nd Edition, London, Academic Press.
[vii] Calladine. J., Garner, G., Wernham, C., & Thiel, A. (2009) The influence of survey frequency on population estimates of moorland breeding birds. Bird Study, 56: 3, 381-388.
[viii] Gilbert, G., Gibbons, D. W. and Evans, J. (1998) Bird Monitoring Methods. RSPB, Sandy.
[ix] Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. and Thompson, D. (2013) Raptors: a field guide for surveys and monitoring (2nd edition). The Stationery Office, Edinburgh.
[x] Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. and Thompson, D. (2013) Raptors: a field guide for surveys and monitoring (3rd edition). The Stationery Office, Edinburgh.

ANNEX C. ORNITHOLOGICAL SURVEY EFFORT & GENERAL INFORMATION

Table C-1 shows the system used for recording weather conditions on all the surveys (sections **C.1** to **C.5** below).

Table C-1: Key to Meteorological Conditions Recorded During All Surveys

Wind Speed				Rain		Cloud Cover		Cloud Height	
Calm	0	Moderate gale	7	None	0	In eighths		<150m	0
Light air	1	Fresh gale	8	Drizzle/Mist	1	*e.g.*	3/8	150-500m	1
Light breeze	2	Strong gale	9	Light showers	2			>500m	2
Gentle breeze	3	Whole gale	10	Heavy showers	3				
Moderate breeze	4	Storm	11	Heavy rain	4				
Fresh breeze	5	Hurricane	12	**Snow**		**Frost**		**Visibility**	
Strong breeze	6			None	0	None	0	Poor (<1km)	0
				On site	1	Ground	1	Moderate (1-2km)	1
				High ground	2	All day	2	Good (>2km)	2

C.1 Flight Activity Surveys

Flight activity surveys were undertaken during the 2012, 2013 and 2021 breeding seasons and 2011/2012, 2012/2013 and 2020/2021 non-breeding seasons. Details of the flight activity surveys undertaken across each Vantage Point (VP) location are supplied in **Table C-2** (survey hours per VP per season are summarised in **Technical Appendix 9.1**) and the associated weather data recorded is detailed in **Table C-3**. Refer to **Annex B** for survey methodology and **Annex D** for survey results.

Table C-2: Summary of Flight Activity Surveys Undertaken at the Proposed Development (sorted chronologically)

Date	Season	Observer	VP	Survey Start time	Survey Finish time	No. Hours[1] Surveyed
27/09/2011	2011/2012 NBR	ZS	1	1218	1518	3
27/09/2011	2011/2012 NBR	ZS	1	1518	1818	3
27/09/2011	2011/2012 NBR	RP	2	1235	1535	3
27/09/2011	2011/2012 NBR	RP	2	1550	1850	3
28/09/2011	2011/2012 NBR	ZS	2	0650	0950	3
28/09/2011	2011/2012 NBR	ZS	2	0950	1250	3
28/09/2011	2011/2012 NBR	KJ	3	0705	1005	3
28/09/2011	2011/2012 NBR	KJ	3	1020	1320	3
28/09/2011	2011/2012 NBR	RP	4	0715	1015	3
28/09/2011	2011/2012 NBR	RP	4	1030	1330	3
18/10/2011	2011/2012 NBR	ZS	1	1150	1450	3
18/10/2011	2011/2012 NBR	ZS	1	1505	1805	3
18/10/2011	2011/2012 NBR	KJ	3	1145	1445	3
18/10/2011	2011/2012 NBR	KJ	3	1500	1800	3
18/10/2011	2011/2012 NBR	RP	4	1140	1440	3
18/10/2011	2011/2012 NBR	RP	4	1455	1755	3
19/10/2011	2011/2012 NBR	RP	2	0850	1150	3
19/10/2011	2011/2012 NBR	RP	2	1205	1505	3
19/10/2011	2011/2012 NBR	ZS	3	0840	1140	3
19/10/2011	2011/2012 NBR	ZS	3	1200	1500	3
19/10/2011	2011/2012 NBR	KJ	4	0845	1145	3
19/10/2011	2011/2012 NBR	KJ	4	1200	1500	3
29/11/2011	2011/2012 NBR	ZS	3	1100	1300	2
29/11/2011	2011/2012 NBR	ZS	3	1315	1515	2
01/12/2011	2011/2012 NBR	RP	1	0810	1010	2
01/12/2011	2011/2012 NBR	RP	1	1010	1210	2
23/12/2011	2011/2012 NBR	TC	1	0930	1200	2.5
23/12/2011	2011/2012 NBR	TC	1	1230	1500	2.5
11/01/2012	2011/2012 NBR	TC	1	0900	1200	2
11/01/2012	2011/2012 NBR	TC	1	1300	1600	3
11/01/2012	2011/2012 NBR	MC	2	0900	1200	3
11/01/2012	2011/2012 NBR	MC	2	1300	1600	3
18/01/2012	2011/2012 NBR	TC	3	0900	1200	3
18/01/2012	2011/2012 NBR	TC	3	1300	1600	3
18/01/2012	2011/2012 NBR	MC	4	0900	1200	3
18/01/2012	2011/2012 NBR	MC	4	1300	1600	3
03/02/2012	2011/2012 NBR	JN	3	1245	1545	3
05/02/2012	2011/2012 NBR	RW	1	1215	1515	3
05/02/2012	2011/2012 NBR	JN	3	1245	1545	3
06/02/2012	2011/2012 NBR	RW	3	1130	1330	2
06/02/2012	2011/2012 NBR	RW	3	1400	1700	3
07/02/2012	2011/2012 NBR	JN	2	0800	1100	3
07/02/2012	2011/2012 NBR	JN	2	1200	1500	3
07/02/2012	2011/2012 NBR	RW	4	0800	1100	3
07/02/2012	2011/2012 NBR	RW	4	1200	1500	3
03/03/2012	2011/2012 NBR	RW	2	1300	1500	2
03/03/2012	2011/2012 NBR	RW	2	1530	1830	3
09/03/2012	2011/2012 NBR	RW	1	0945	1245	3
09/03/2012	2011/2012 NBR	RW	1	1345	1645	3
09/03/2012	2011/2012 NBR	RW	2	1745	1845	1
09/03/2012	2011/2012 NBR	JN	4	1010	1310	3
09/03/2012	2011/2012 NBR	JN	4	1410	1710	3
22/03/2012	2012 BR	ARC	1	0955	1255	3
22/03/2012	2012 BR	ARC	2	1420	1720	3
23/03/2012	2012 BR	ARC	3	0905	1205	3
23/03/2012	2012 BR	ARC	4	0500	0800	3
04/04/2012	2012 BR	CL	3	1015	1315	3
04/04/2012	2012 BR	CL	3	1345	1645	3
04/04/2012	2012 BR	SLR	4	1030	1330	3
04/04/2012	2012 BR	SLR	4	1430	1730	3
05/04/2012	2012 BR	CL	1	0945	1245	3
05/04/2012	2012 BR	CL	1	1315	1615	3
05/04/2012	2012 BR	SLR	2	1000	1300	3
05/04/2012	2012 BR	SLR	2	1400	1700	3
14/05/2012	2012 BR	BA	2	1900	2100	2
14/05/2012	2012 BR	GT	3	1915	2115	2
15/05/2012	2012 BR	BA	1	1630	1930	3
15/05/2012	2012 BR	BA	2	0630	0930	3
15/05/2012	2012 BR	BA	2	1030	1330	3
15/05/2012	2012 BR	BA	2	1430	1530	1
15/05/2012	2012 BR	GT	3	0630	0730	1
15/05/2012	2012 BR	GT	3	0830	1130	3
15/05/2012	2012 BR	GT	3	1230	1530	3
15/05/2012	2012 BR	GT	4	1630	1930	3

[1] Note: only valid hours (i.e. where visibility was at least 1 km) are presented in this column.

Date	Season	Observer	VP	Survey Start time	Survey Finish time	No. Hours[1] Surveyed
16/05/2012	2012 BR	BA	1	1215	1515	3
16/05/2012	2012 BR	BA	1	1615	1915	3
16/05/2012	2012 BR	GT	4	1230	1530	3
16/05/2012	2012 BR	GT	4	1630	1930	3
25/06/2012	2012 BR	CL	2	1250	1550	3
25/06/2012	2012 BR	CL	2	1650	1950	3
25/06/2012	2012 BR	CL	3	0845	1145	3
25/06/2012	2012 BR	CS	3	1705	2005	3
25/06/2012	2012 BR	CS	4	0900	1200	3
25/06/2012	2012 BR	CS	4	1300	1600	3
26/06/2012	2012 BR	CL	1	0620	0920	3
26/06/2012	2012 BR	CL	1	1020	1320	3
09/07/2012	2012 BR	CL	1	0850	1150	3
09/07/2012	2012 BR	CL	1	1250	1550	3
09/07/2012	2012 BR	CS	4	0800	1100	3
09/07/2012	2012 BR	CS	4	1200	1500	3
25/07/2012	2012 BR	KS	2	1040	1340	3
25/07/2012	2012 BR	KS	2	1440	1740	3
26/07/2012	2012 BR	KS	3	0925	1225	3
26/07/2012	2012 BR	KS	3	1325	1625	3
23/08/2012	2012 BR	ZS	3	0530	0830	3
23/08/2012	2012 BR	ZS	3	0845	1145	3
23/08/2012	2012 BR	ZS	3	1145	1245	1
13/09/2012	2012/2013 NBR	KJ	7	1445	1745	3
13/09/2012	2012/2013 NBR	ZS	9	1245	1545	3
13/09/2012	2012/2013 NBR	ZS	9	1600	1900	3
14/09/2012	2012/2013 NBR	ZS	7	0630	0930	3
14/09/2012	2012/2013 NBR	ZS	7	1000	1300	3
14/09/2012	2012/2013 NBR	KJ	9	0645	0945	3
14/09/2012	2012/2013 NBR	KJ	9	0955	1255	3
01/10/2012	2012/2013 NBR	SS	6	1250	1550	3
01/10/2012	2012/2013 NBR	SS	6	1600	1900	3
01/10/2012	2012/2013 NBR	RC	7	1245	1545	3
01/10/2012	2012/2013 NBR	RC	7	1555	1855	3
01/10/2012	2012/2013 NBR	GJ	9	1320	1620	3
01/10/2012	2012/2013 NBR	GJ	9	1635	1935	3
02/10/2012	2012/2013 NBR	RC	6	0915	1115	2
02/10/2012	2012/2013 NBR	SS	7	0920	1220	3
17/10/2012	2012/2013 NBR	SS	6	1240	1510	2.5
17/10/2012	2012/2013 NBR	SS	6	1520	1750	2.5
17/10/2012	2012/2013 NBR	RA	7	1245	1515	2.5
17/10/2012	2012/2013 NBR	RA	7	1525	1755	2.5
17/10/2012	2012/2013 NBR	ZS	9	1245	1515	2.5
17/10/2012	2012/2013 NBR	ZS	9	1530	1800	2.5
18/10/2012	2012/2013 NBR	SS	6	0900	1130	2.5
18/10/2012	2012/2013 NBR	SS	6	1140	1410	2.5
18/10/2012	2012/2013 NBR	RA	7	0900	1130	2.5
18/10/2012	2012/2013 NBR	RA	7	1140	1410	2.5
04/12/2012	2012/2013 NBR	SS	9	0915	1115	2
04/12/2012	2012/2013 NBR	SS	9	1125	1325	2
16/01/2013	2012/2013 NBR	KJ	6	0815	1015	2
16/01/2013	2012/2013 NBR	KJ	6	1025	1225	2
16/01/2013	2012/2013 NBR	AR	7	0805	1005	2
16/01/2013	2012/2013 NBR	AR	7	1015	1215	2
26/02/2013	2012/2013 NBR	AR	6	1015	1315	3
26/02/2013	2012/2013 NBR	AR	6	1330	1630	3
27/02/2013	2012/2013 NBR	AR	4	0815	1215	4
27/02/2013	2012/2013 NBR	ZS	6	1250	1450	2
27/02/2013	2012/2013 NBR	ZS	7	0830	1245	4
28/02/2013	2012/2013 NBR	ZS	6	0815	1115	3
28/02/2013	2012/2013 NBR	AR	6	1130	1230	3
26/03/2013	2013 BR	SS/JM	6	1310	1510	2
26/03/2013	2013 BR	SS/JM	6	1520	1720	2
26/03/2013	2013 BR	RA	9	1250	1450	2
26/03/2013	2013 BR	RA	9	1500	1700	2
27/03/2013	2013 BR	RA	7	0920	1120	2
27/03/2013	2013 BR	RA	7	1130	1330	2
27/03/2013	2013 BR	JM	9	1010	1210	2
27/03/2013	2013 BR	JM	9	1220	1420	2
23/04/2013	2013 BR	PR	6	0700	0900	2
23/04/2013	2013 BR	PR	6	0910	1110	2
23/04/2013	2013 BR	RC	9	0700	0900	2
23/04/2013	2013 BR	RC	9	0910	1110	2
22/05/2013	2013 BR	CS	7	1400	1700	3
22/05/2013	2013 BR	CS	7	1800	2100	3
22/05/2013	2013 BR	RS	9	1410	1710	3
22/05/2013	2013 BR	RS	9	1810	2110	3
23/05/2013	2013 BR	CS	6	0835	1135	3
23/05/2013	2013 BR	RS	6	1135	1435	3
30/05/2013	2013 BR	MO	7	0500	0800	3
30/05/2013	2013 BR	MO	7	0900	1200	3
05/06/2013	2013 BR	MO	6	1410	1810	4
05/06/2013	2013 BR	MO	7	1925	2125	2
06/06/2013	2013 BR	MO	7	1100	1400	3
06/06/2013	2013 BR	MO	7	1500	1800	3
18/06/2013	2013 BR	RS	6	0925	1225	3
18/06/2013	2013 BR	MO	9	0915	1215	3
19/06/2013	2013 BR	RS	6	0530	0830	3
19/06/2013	2013 BR	MO	9	0520	0820	3
05/07/2013	2013 BR	ND	7	0530	0830	3
05/07/2013	2013 BR	ND	7	0845	1145	3
05/07/2013	2013 BR	JM	9	0535	0835	0
05/07/2013	2013 BR	JM	9	0845	1145	0
24/07/2013	2013 BR	JM	6	1430	1730	3
24/07/2013	2013 BR	JM	6	1740	2040	3
25/07/2013	2013 BR	JM	9	0550	0850	3
25/07/2013	2013 BR	JM	9	0900	1200	3
01/08/2013	2013 BR	ND	6	1150	1320	1.5
01/08/2013	2013 BR	ND	9	1345	1645	3
27/08/2013	2013 BR	ND	9	1645	2000	3
28/08/2013	2013 BR	ND	7	1350	1650	3
28/08/2013	2013 BR	ND	7	1700	2000	3
29/08/2013	2013 BR	JM	6	0555	0855	2
29/08/2013	2013 BR	JM	6	0905	1205	2.5
19/10/2020	2020/2021 NBR	MW	11	0830	1130	3
19/10/2020	2020/2021 NBR	MW	11	1200	1500	3

Date	Season	Observer	VP	Survey Start time	Survey Finish time	No. Hours[1] Surveyed
20/10/2020	2020/2021 NBR	MW	11	0730	1030	3
20/10/2020	2020/2021 NBR	MW	11	1100	1400	3
21/10/2020	2020/2021 NBR	MW	11	0740	1040	3
22/10/2020	2020/2021 NBR	MW	10	0730	1030	3
22/10/2020	2020/2021 NBR	MW	10	1100	1400	3
23/10/2020	2020/2021 NBR	MW	10	0930	1230	3
23/10/2020	2020/2021 NBR	MW	10	1300	1500	2
05/11/2020	2020/2021 NBR	MW	10	0715	1015	3
05/11/2020	2020/2021 NBR	MW	10	1045	1345	3
06/11/2020	2020/2021 NBR	MW	11	0715	1015	3
06/11/2020	2020/2021 NBR	MW	11	1045	1345	3
03/12/2020	2020/2021 NBR	MW	11	0800	1100	3
03/12/2020	2020/2021 NBR	MW	11	1130	1330	2
04/12/2020	2020/2021 NBR	MW	10	0815	1115	3
04/12/2020	2020/2021 NBR	MW	10	1145	1345	1
11/01/2021	2020/2021 NBR	MW	11	0830	1130	3
11/01/2021	2020/2021 NBR	MW	11	1200	1400	2
12/01/2021	2020/2021 NBR	MW	10	0830	1130	3
12/01/2021	2020/2021 NBR	MW	10	1200	1400	2
23/02/2021	2020/2021 NBR	MW	11	0700	1000	3
23/02/2021	2020/2021 NBR	MW	11	1030	1230	2
24/02/2021	2020/2021 NBR	MW	10	0700	1000	3
24/02/2021	2020/2021 NBR	MW	10	1030	1230	2
12/03/2021	2020/2021 NBR	MW	11	0700	1000	3
12/03/2021	2020/2021 NBR	MW	11	1030	1230	2
15/03/2021	2020/2021 NBR	MW	10	0700	1000	3
15/03/2021	2020/2021 NBR	MW	10	1030	1230	2
15/03/2021	2020/2021 NBR	MW	10	0700	1000	3
15/03/2021	2020/2021 NBR	MW	10	1030	1230	2
18/03/2021	2021 BR	MW	11	0645	0945	3
18/03/2021	2021 BR	MW	11	1015	1315	3
19/03/2021	2021 BR	MW	10	0645	0945	3
19/03/2021	2021 BR	MW	10	1015	1215	2
12/04/2021	2021 BR	MW	10	0630	0930	3
12/04/2021	2021 BR	MW	10	1000	1300	3
19/04/2021	2021 BR	MW	11	0700	1000	3
19/04/2021	2021 BR	MW	11	1030	1330	3
06/05/2021	2021 BR	MW	10	0700	1000	3
07/05/2021	2021 BR	MW	10	0700	1000	3
10/05/2021	2021 BR	MW	11	0700	1000	3
10/05/2021	2021 BR	MW	11	1030	1330	3
04/06/2021	2021 BR	MW	10	0530	0830	3
04/06/2021	2021 BR	MW	10	0900	1200	3
07/06/2021	2021 BR	MW	11	0600	0900	3
07/06/2021	2021 BR	MW	11	0930	1230	3
05/07/2021	2021 BR	MW	10	0530	0830	3
05/07/2021	2021 BR	MW	10	0900	1200	3
05/07/2021	2021 BR	MW	10	1230	1330	1
06/07/2021	2021 BR	MW	11	0615	0915	3
06/07/2021	2021 BR	MW	11	0945	1245	3
02/08/2021	2021 BR	MW	11	0615	0915	3
02/08/2021	2021 BR	MW	11	0945	1245	3
05/08/2021	2021 BR	MW	10	0600	0900	3
05/08/2021	2021 BR	MW	10	0930	1230	3

Table C-3: Meteorological Conditions During Flight Activity Surveys at the Proposed Development (sorted chronologically)

Date	VP	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
27/09/2011	1	ZS	1218	1518	1	3	NE	0	8	0	1	0	0
27/09/2011	1	ZS	1218	1518	2	3	NE	0	8	0	2	0	0
27/09/2011	1	ZS	1218	1518	3	3	NE	0	8	0	1	0	0
27/09/2011	1	ZS	1518	1818	1	6	NE	0	8	0	1	0	0
27/09/2011	1	ZS	1518	1818	2	6	NE	0	8	0	1	0	0
27/09/2011	1	ZS	1518	1818	3	4	NE	0	8	0	1	0	0
27/09/2011	2	RP	1235	1535	1	4	SW	0	8	2	2	0	0
27/09/2011	2	RP	1235	1535	2	5	S	0	8	1	2	0	0
27/09/2011	2	RP	1235	1535	3	6	SW	0	8	1	1	0	0
27/09/2011	2	RP	1550	1850	1	6	SW	0	8	1	2	0	0
27/09/2011	2	RP	1550	1850	2	5	S	1	8	1	2	0	0
27/09/2011	2	RP	1550	1850	3	5	S	0	7	2	2	0	0
28/09/2011	2	ZS	0650	0950	1	2	NW	0	6	1	2	0	0
28/09/2011	2	ZS	0650	0950	2	3	NW	0	7	1	2	0	0
28/09/2011	2	ZS	0650	0950	3	4	N	0	7	1	1	0	0
28/09/2011	2	ZS	0950	1250	1	2	N	0	6	1	1	0	0
28/09/2011	2	ZS	0950	1250	2	2	N	0	4	1	1	0	0
28/09/2011	2	ZS	0950	1250	3	3	N	0	3	1	1	0	0
28/09/2011	3	KJ	0705	1005	1	1	0	0	2	2	2	0	0
28/09/2011	3	KJ	0705	1005	1	1	0	0	2	2	2	0	0
28/09/2011	3	KJ	0705	1005	2	1	0	0	2	2	2	0	0
28/09/2011	3	KJ	0705	1005	3	1	0	0	2	2	2	0	0
28/09/2011	3	KJ	1020	1320	1	1	0	0	1	2	2	0	0
28/09/2011	3	KJ	1020	1320	2	2	N	0	1	2	2	0	0
28/09/2011	3	KJ	1020	1320	3	3	N	0	1	2	2	0	0
28/09/2011	4	RP	0715	1015	1	1	S	0	2	2	2	0	0
28/09/2011	4	RP	0715	1015	2	1	S	0	2	2	2	0	0
28/09/2011	4	RP	0715	1015	2	1	S	0	2	2	2	0	0
28/09/2011	4	RP	0715	1015	3	2	S	0	2	2	2	0	0
28/09/2011	4	RP	1030	1330	1	2	SW	0	1	2	2	0	0
28/09/2011	4	RP	1030	1330	2	2	SW	0	1	2	2	0	0
28/09/2011	4	RP	1030	1330	3	4	SW	0	1	2	2	0	0
18/10/2011	1	ZS	1150	1450	1	9	SW	2	6	1	2	0	0
18/10/2011	1	ZS	1150	1450	2	9	SW	0	7	1	2	0	0
18/10/2011	1	ZS	1150	1450	3	10	SW	4	7	0	1	0	0
18/10/2011	1	ZS	1505	1805	1	9	SW	0	5	0	1	0	0
18/10/2011	1	ZS	1505	1805	2	10	SW	1	7	0	2	0	0
18/10/2011	1	ZS	1505	1805	3	9	SW	0	6	0	2	0	0
18/10/2011	3	KJ	1145	1445	1	6	SE	2	7	2	2	0	0
18/10/2011	3	KJ	1145	1445	2	5	SE	3	7	2	2	0	0
18/10/2011	3	KJ	1145	1445	3	5	SE	1	5	2	2	0	0
18/10/2011	3	KJ	1500	1800	1	5	SE	1	7	2	2	0	0
18/10/2011	3	KJ	1500	1800	2	3	SE	2	7	2	2	0	0

Date	VP	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
18/10/2011	3	KJ	1500	1800	3	4	SE	1	6	2	2	0	0
18/10/2011	4	RP	1140	1440	1	4	W	3	7	2	2	0	0
18/10/2011	4	RP	1140	1440	2	3	W	3	6	2	2	0	0
18/10/2011	4	RP	1140	1440	3	5	NW	0	6	2	2	0	0
18/10/2011	4	RP	1455	1755	1	5	NW	0	4	2	2	0	0
18/10/2011	4	RP	1455	1755	2	5	NW	2	4	2	2	0	0
18/10/2011	4	RP	1455	1755	3	5	NW	2	4	2	2	0	0
19/10/2011	2	RP	0850	1150	1	2	SW	0	2	2	2	0	0
19/10/2011	2	RP	0850	1150	2	3	W	0	1	2	2	0	0
19/10/2011	2	RP	0850	1150	3	3	WNW	0	1	2	2	0	0
19/10/2011	2	RP	1205	1505	1	3	NW	0	5	2	2	0	0
19/10/2011	2	RP	1205	1505	2	4	NW	0	5	2	2	0	0
19/10/2011	2	RP	1205	1505	3	3	NW	2	4	2	2	0	0
19/10/2011	3	ZS	0840	1140	1	3	SW	0	3	1	2	0	0
19/10/2011	3	ZS	0840	1140	2	4	SW	0	4	1	2	0	0
19/10/2011	3	ZS	0840	1140	3	5	SW	0	2	2	2	0	0
19/10/2011	3	ZS	1200	1500	1	4	SW	0	3	1	2	0	0
19/10/2011	3	ZS	1200	1500	2	3	SW	0	6	1	2	0	0
19/10/2011	3	ZS	1200	1500	3	3	SW	0	5	2	2	0	0
19/10/2011	4	KJ	0845	1145	1	0	0	0	4	2	2	0	0
19/10/2011	4	KJ	0845	1145	2	1	SE	0	3	2	2	0	0
19/10/2011	4	KJ	0845	1145	3	2	SE	0	3	2	2	0	0
19/10/2011	4	KJ	1200	1500	1	1	SE	0	6	2	2	0	0
19/10/2011	4	KJ	1200	1500	2	1	SE	0	5	2	2	0	0
19/10/2011	4	KJ	1200	1500	3	3	SE	0	4	2	2	0	0
29/11/2011	3	ZS	1100	1300	1	6	W	4	8	0	1	0	0
29/11/2011	3	ZS	1100	1300	2	4	W	4	8	0	1	0	0
29/11/2011	3	ZS	1315	1515	3	4	W	4	8	0	1	0	0
01/12/2011	1	RP	0810	1010	1	3	SW	0	4	2	2	0	0
01/12/2011	1	RP	0810	1010	2	3	SW	0	4	2	2	0	0
01/12/2011	1	RP	1010	1210	1	4	SW	0	3	2	2	0	0
01/12/2011	1	RP	1010	1210	2	4	SW	0	3	2	2	0	0
23/12/2011	1	TC	0930	1200	1	2	WNW	0	6	1	2	0	0
23/12/2011	1	TC	0930	1200	2	3	W	0	8	1	2	0	0
23/12/2011	1	TC	0930	1200	2.5	3	S	0	8	1	2	0	0
23/12/2011	1	TC	1230	1500	1	3	SW	0	8	1	2	0	0
23/12/2011	1	TC	1230	1500	2	3	SW	0	8	1	2	0	0
23/12/2011	1	TC	1230	1500	2.5	4	SW	3	8	1	1	0	0
11/01/2012	1	TC	0900	1200	1	3	WSW	0	6	1	2	0	0
11/01/2012	1	TC	0900	1200	2	3	WSW	0	6	1	2	0	0
11/01/2012	1	TC	0900	1200	3	4	WSW	0	8	1	1	0	0
11/01/2012	1	TC	1300	1600	1	5	WSW	0	7	1	1	0	0
11/01/2012	1	TC	1300	1600	2	6	WSW	1	7	1	1	0	0

Date	VP	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
11/01/2012	1	TC	1300	1600	3	6	WSW	2	8	1	0	0	0
11/01/2012	2	MC	0900	1200	1	3	WSW	0	6	1	1,2	0	0
11/01/2012	2	MC	0900	1200	2	3	WSW	0	6	1	1,2	0	0
11/01/2012	2	MC	0900	1200	3	4	WSW	0	8	1	1,2	0	0
11/01/2012	2	MC	1300	1600	1	6	WSW	0	8	1	1	0	0
11/01/2012	2	MC	1300	1600	2	6	WSW	1	7	1	1	0	0
11/01/2012	2	MC	1300	1600	3	6	WSW	2	8	1	1	0	0
18/01/2012	3	TC	0900	1200	1	3	SW	0	8	0	1	0	0
18/01/2012	3	TC	0900	1200	2	3	SW	0	8	0	1	0	0
18/01/2012	3	TC	0900	1200	3	3	WSW	0	6	1	2	0	0
18/01/2012	3	TC	1300	1600	1	3	WSW	0	4	1	2	0	0
18/01/2012	3	TC	1300	1600	2	4	WSW	0	4	1	2	0	0
18/01/2012	3	TC	1300	1600	3	4	WSW	0	6	1	2	0	0
18/01/2012	4	MC	0900	1200	1	4	WSW	0	8	1	1	0	0
18/01/2012	4	MC	0900	1200	2	4	WSW	0	7	1	1	0	0
18/01/2012	4	MC	0900	1200	3	3	WSW	0	8	1	1	0	0
18/01/2012	4	MC	1300	1600	1	4	WSW	0	4	1	2	0	0
18/01/2012	4	MC	1300	1600	2	4	WSW	0	4	1	2	0	0
18/01/2012	4	MC	1300	1600	3	4	WSW	0	7	1	2	0	0
03/02/2012	3	JN	1245	1545	1	2	SW	0	2	2	2	2	1
03/02/2012	3	JN	1245	1545	2	3	SW	0	4	2	2	2	1
03/02/2012	3	JN	1245	1545	3	3	SW	0	5	2	2	2	1
05/02/2012	1	RW	1215	1515	1	3	WSW	0	3	2	2	0	1
05/02/2012	1	RW	1215	1515	2	3	WSW	0	4	2	2	0	1
05/02/2012	1	RW	1215	1515	3	2	WSW	0	5	1	2	0	1
06/02/2012	3	RW	1130	1330	1	1	NNE	0	4	2	2	0	1
06/02/2012	3	RW	1130	1330	2	1	NNE	0	4	2	2	0	1
06/02/2012	3	RW	1400	1700	1	1	NNE	0	4	1	2	0	1
06/02/2012	3	RW	1400	1700	2	1	NNE	0	3	1	2	0	1
06/02/2012	3	RW	1400	1700	3	1	NNE	0	3	1	2	0	1
07/02/2012	2	JN	0800	1100	1	0	0	0	0	2	2	2	1
07/02/2012	2	JN	0800	1100	2	1	SW	0	0	2	2	2	1
07/02/2012	2	JN	0800	1100	3	2	SW	0	1	2	2	2	1
07/02/2012	2	JN	1200	1500	1	2	SW	0	2	2	2	2	1
07/02/2012	2	JN	1200	1500	2	2	SW	0	3	2	2	2	1
07/02/2012	2	JN	1200	1500	3	2	SW	0	4	2	2	2	1
07/02/2012	4	RW	0800	1100	1	1	SW	0	0	0	2	1	1
07/02/2012	4	RW	0800	1100	2	1	SW	0	0	0	2	1	1
07/02/2012	4	RW	0800	1100	3	1	SW	0	0	0	2	0	1
07/02/2012	4	RW	1200	1500	1	2	S	0	3	2	2	0	1
07/02/2012	4	RW	1200	1500	2	2	S	0	5	2	2	0	1
07/02/2012	4	RW	1200	1500	3	2	S	0	7	2	2	0	1
03/03/2012	2	RW	1300	1500	1	3	WSW	0	6	1	1	0	0

Date	VP	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
03/03/2012	2	RW	1300	1500	2	4	WSW	2	6	1	2	0	0
03/03/2012	2	RW	1530	1830	1	4	SW	3	7	1	2	0	0
03/03/2012	2	RW	1530	1830	2	3	SW	2	7	1	2	0	0
03/03/2012	2	RW	1530	1830	3	4	NW	0	6	1	2	0	0
09/03/2012	1	RW	0945	1245	1	5	WSW	0	8	1	2	0	0
09/03/2012	1	RW	0945	1245	2	5	WSW	0	8	1	2	0	0
09/03/2012	1	RW	0945	1245	3	4	WSW	0	7	1	2	0	0
09/03/2012	1	RW	1345	1645	1	4	WSW	0	8	1	2	0	0
09/03/2012	1	RW	1345	1645	2	3	SW	0	8	1	2	0	0
09/03/2012	1	RW	1345	1645	3	3	SW	1	8	1	2	0	0
09/03/2012	2	RW	1745	1845	1	3	WSW	0	3	1	2	0	0
09/03/2012	4	JN	1010	1310	1	4	SW	0	8	1	2	0	0
09/03/2012	4	JN	1010	1310	2	4	SW	0	8	2	2	0	0
09/03/2012	4	JN	1010	1310	3	4	SW	0	8	2	2	0	0
09/03/2012	4	JN	1410	1710	1	4	SW	0	8	2	2	0	0
09/03/2012	4	JN	1410	1710	2	3	SW	0	8	2	2	0	0
09/03/2012	4	JN	1410	1710	3	3	SW	2	8	1	1	0	0
22/03/2012	1	ARC	0955	1255	1	2	SSE	0	2	2	2	0	0
22/03/2012	1	ARC	0955	1255	2	2	SSE	0	2	2	2	0	0
22/03/2012	1	ARC	0955	1255	3	2	SSE	0	2	2	2	0	0
22/03/2012	2	ARC	1420	1720	1	1	SSE	0	2	2	2	0	0
22/03/2012	2	ARC	1420	1720	2	1	SSE	0	2	2	2	0	0
22/03/2012	2	ARC	1420	1720	3	1	SSE	0	2	2	2	0	0
23/03/2012	3	ARC	0500	0800	1	0	0	0	7	2	2	0	0
23/03/2012	3	ARC	0500	0800	2	0	0	0	7	2	2	0	0
23/03/2012	3	ARC	0500	0800	3	1	SW	0	6	2	2	0	0
23/03/2012	3	ARC	0905	1205	1	0	SSE	0	5	2	2	0	0
23/03/2012	3	ARC	0905	1205	2	1	SSE	0	7	2	2	0	0
23/03/2012	3	ARC	0905	1205	3	1	SSE	0	8	2	2	0	0
04/04/2012	3	CL	1015	1315	1	2	NE	0	4	2	2	2	1
04/04/2012	3	CL	1015	1315	2	1	NE	0	4	2	2	2	1
04/04/2012	3	CL	1015	1315	3	2	NE	2	6	2	2	2	1
04/04/2012	3	SLR	1030	1330	1	2	NE	0	4	2	2	0	1
04/04/2012	3	SLR	1030	1330	2	2	NE	0	4	2	2	0	1
04/04/2012	3	SLR	1030	1330	3	2	NE	0	7	2	2	0	1
04/04/2012	3	CL	1345	1645	1	2	NE	2	7	2	2	2	1
04/04/2012	3	CL	1345	1645	2	2	NE	1	7	2	2	2	1
04/04/2012	3	CL	1345	1645	3	1	NE	1	6	2	2	2	1
04/04/2012	4	SLR	1430	1730	1	1	NNE	0	6	2	2	0	1
04/04/2012	4	SLR	1430	1730	2	1	N	0	5	2	2	0	1
04/04/2012	4	SLR	1430	1730	3	1	NNW	0	5	2	2	0	1
05/04/2012	1	CL	0945	1245	1	1	NW	0	1	2	2	1	1
05/04/2012	1	CL	0945	1245	2	1	NW	0	1	2	2	1	1

Date	VP	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
05/04/2012	1	CL	0945	1245	3	1	WNW	0	1	2	2	1	1
05/04/2012	1	CL	1315	1615	1	1	WNW	0	3	2	2	1	1
05/04/2012	1	CL	1315	1615	2	2	WNW	0	4	2	2	0	1
05/04/2012	1	CL	1315	1615	3	2	WNW	0	5	2	2	0	1
05/04/2012	2	SLR	1000	1300	1	1	NW	0	1	2	2	0	1
05/04/2012	2	SLR	1000	1300	2	1	NW	0	1	2	2	0	1
05/04/2012	2	SLR	1000	1300	3	2	NW	0	1	2	2	0	1
05/04/2012	2	SLR	1400	1700	1	2	NW	0	1	2	2	0	1
05/04/2012	2	SLR	1400	1700	2	2	NW	0	0	0	2	0	1
05/04/2012	2	SLR	1400	1700	3	1	NW	0	5	2	2	0	1
14/05/2012	2	BA	1900	2100	1	3	SW	0	4	2	2	0	0
14/05/2012	2	BA	1900	2100	2	3	SW	0	5	2	2	0	0
14/05/2012	3	GT	1915	2115	1	3	SW	0	5	2	2	0	0
14/05/2012	3	GT	1915	2115	2	3	SW	0	5	2	2	0	0
15/05/2012	1	BA	1630	1930	1	3	N	2	4	2	2	0	0
15/05/2012	1	BA	1630	1930	2	3	N	0	4	2	2	0	0
15/05/2012	1	BA	1630	1930	3	3	N	0	8	2	2	0	0
15/05/2012	2	BA	0630	0930	1	4	N	2	8	1	2	0	0
15/05/2012	2	BA	0630	0930	2	3	N	2	7	1	2	0	0
15/05/2012	2	BA	0630	0930	3	3	N	0	5	2	2	0	0
15/05/2012	2	BA	1030	1330	1	4	N	0	6	2	2	0	0
15/05/2012	2	BA	1030	1330	2	4	N	0	5	2	2	0	0
15/05/2012	2	BA	1030	1330	3	4	N	0	7	2	2	0	0
15/05/2012	2	BA	1430	1530	1	4	N	2	7	2	1	0	0
15/05/2012	2	BA	1430	1530	1	4	N	2	7	2	1	0	0
15/05/2012	3	GT	0630	0730	1	3	NNW	2	8	1	2	0	0
15/05/2012	3	GT	0830	1130	1	3	NNW	2	6	1	2	0	0
15/05/2012	3	GT	0830	1130	2	4	NNW	0	6	2	2	0	0
15/05/2012	3	GT	0830	1130	3	4	NNW	0	7	2	2	0	0
15/05/2012	3	GT	1230	1530	1	5	NNW	0	6	2	2	0	0
15/05/2012	3	GT	1230	1530	2	4	NNW	2	7	2	2	0	0
15/05/2012	3	GT	1230	1530	3	4	NNW	0	7	2	2	0	0
15/05/2012	4	GT	1630	1930	1	3	NW	0	3	2	2	0	0
15/05/2012	4	GT	1630	1930	2	3	NW	2	7	2	2	0	0
15/05/2012	4	GT	1630	1930	3	3	NW	0	6	2	2	0	0
16/05/2012	1	BA	1215	1515	1	4	W	2	6	2	2	0	0
16/05/2012	1	BA	1215	1515	2	4	W	2	6	2	2	0	0
16/05/2012	1	BA	1215	1515	3	4	W	0	7	2	2	0	0
16/05/2012	1	BA	1615	1915	1	4	W	0	7	2	2	0	0
16/05/2012	1	BA	1615	1915	2	3	W	0	8	2	2	0	0
16/05/2012	1	BA	1615	1915	3	3	W	2	8	2	2	0	0
16/05/2012	4	GT	1230	1530	1	3	SW	0	7	2	2	0	0
16/05/2012	4	GT	1230	1530	2	3	SW	0	7	2	2	0	0
16/05/2012	4	GT	1230	1530	3	4	SW	2	8	2	2	0	0

Date	VP	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
16/05/2012	4	GT	1630	1930	1	3	NW	0	8	2	2	0	0
16/05/2012	4	GT	1630	1930	2	2	NW	0	8	2	2	0	0
16/05/2012	4	GT	1630	1930	3	2	NW	0	8	2	2	0	0
25/06/2012	2	CL	1250	1550	1	0	0	0	8	2	2	0	0
25/06/2012	2	CL	1250	1550	2	1	NW	0	8	2	2	0	0
25/06/2012	2	CL	1250	1550	3	1	NW	0	8	2	2	0	0
25/06/2012	2	CL	1650	1950	1	1	NW	0	8	2	2	0	0
25/06/2012	2	CL	1650	1950	2	1	WSW	0	8	2	2	0	0
25/06/2012	2	CL	1650	1950	3	2	SW	0	8	2	2	0	0
25/06/2012	3	CL	0845	1145	1	1	NW	0	8	2	2	0	0
25/06/2012	3	CL	0845	1145	2	1	NW	0	8	2	2	0	0
25/06/2012	3	CL	0845	1145	3	1	NW	0	8	2	2	0	0
25/06/2012	3	CS	1705	2005	1	2	SE	0	8	2	2	0	0
25/06/2012	3	CS	1705	2005	2	2	SE	0	8	2	2	0	0
25/06/2012	3	CS	1705	2005	3	2	SE	0	8	2	2	0	0
25/06/2012	4	CS	0900	1200	1	0	0	0	8	2	2	0	0
25/06/2012	4	CS	0900	1200	2	0	0	0	8	2	2	0	0
25/06/2012	4	CS	0900	1200	3	0	0	0	8	2	2	0	0
25/06/2012	4	CS	1300	1600	1	0	0	0	8	2	2	0	0
25/06/2012	4	CS	1300	1600	2	0	0	0	8	2	2	0	0
25/06/2012	4	CS	1300	1600	3	0	0	0	8	2	2	0	0
26/06/2012	1	CL	0620	0920	1	1	NW	0	1	2	1	0	0
26/06/2012	1	CL	0620	0920	2	1	NW	0	4	2	1	0	0
26/06/2012	1	CL	0620	0920	3	2	WNW	0	6	2	2	0	0
26/06/2012	1	CL	1020	1320	1	1	SE	0	4	2	2	0	0
26/06/2012	1	CL	1020	1320	2	2	SSE	0	5	2	2	0	0
26/06/2012	1	CL	1020	1320	3	2	SSE	0	4	2	2	0	0
09/07/2012	1	CL	0850	1150	1	2	NW	1	8	1	1	0	0
09/07/2012	1	CL	0850	1150	2	1	NW	1	8	1	2	0	0
09/07/2012	1	CL	0850	1150	3	1	NW	1	8	2	1	0	0
09/07/2012	1	CL	1250	1550	1	1	NW	0	8	1	1	0	0
09/07/2012	1	CL	1250	1550	2	2	NW	1	8	2	1	0	0
09/07/2012	1	CL	1250	1550	3	2	NW	1	8	2	2	0	0
09/07/2012	4	CS	0800	1100	1	3	NE	1	8	1	2	0	0
09/07/2012	4	CS	0800	1100	2	3	NE	1	8	1	2	0	0
09/07/2012	4	CS	0800	1100	3	2	NE	1	8	1	1	0	0
09/07/2012	4	CS	1200	1500	1	2	NE	1	8	1	1	0	0
09/07/2012	4	CS	1200	1500	2	2	NE	1	8	1	1	0	0
09/07/2012	4	CS	1200	1500	3	2	NE	1	8	1	1	0	0
25/07/2012	2	KS	1040	1340	1	1	W	0	4	2	2	0	0
25/07/2012	2	KS	1040	1340	2	2	W	0	5	2	2	0	0
25/07/2012	2	KS	1040	1340	3	2	W	0	5	2	2	0	0
25/07/2012	2	KS	1440	1740	1	2	W	0	5	2	2	0	0

Date	VP	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
25/07/2012	2	KS	1440	1740	2	2	W	0	4	2	2	0	0
25/07/2012	2	KS	1440	1740	3	2	W	0	5	2	2	0	0
26/07/2012	3	KS	0925	1225	1	1	W	0	7	2	2	0	0
26/07/2012	3	KS	0925	1225	2	1	W	0	7	2	2	0	0
26/07/2012	3	KS	0925	1225	3	1	W	0	7	2	2	0	0
26/07/2012	3	KS	1325	1625	1	1	W	2	7	2	2	0	0
26/07/2012	3	KS	1325	1625	2	1	NW	3	7	2	2	0	0
26/07/2012	3	KS	1325	1625	3	0	0	0	6	2	2	0	0
23/08/2012	3	ZS	0530	0830	1	4	W	0	8	2	2	0	0
23/08/2012	3	ZS	0530	0830	2	4	W	0	8	2	2	0	0
23/08/2012	3	ZS	0530	0830	3	3	W	0	8	2	2	0	0
23/08/2012	3	ZS	0845	1145	1	3	W	0	8	2	2	0	0
23/08/2012	3	ZS	0845	1145	2	3	W	0	8	2	2	0	0
23/08/2012	3	ZS	0845	1145	3	3	W	0	7	2	2	0	0
23/08/2012	3	ZS	1145	1245	1	3	W	2	7	2	2	0	0
13/09/2012	7	KJ	1445	1745	1	5	5	0	8	2	2	0	0
13/09/2012	7	KJ	1445	1745	2	5	5	0	8	2	2	0	0
13/09/2012	7	KJ	1445	1745	3	5	5	0	8	2	2	0	0
13/09/2012	9	ZS	1245	1545	1	3	S	0	8	1	2	0	0
13/09/2012	9	ZS	1245	1545	2	3	S	2	8	2	2	0	0
13/09/2012	9	ZS	1245	1545	3	2	SW	0	8	2	2	0	0
13/09/2012	9	ZS	1600	1900	1	4	SW	2	8	2	2	0	0
13/09/2012	9	ZS	1600	1900	2	4	SW	4	8	2	2	0	0
13/09/2012	9	ZS	1600	1900	3	4	SW	5	8	2	2	0	0
14/09/2012	7	ZS	0630	0930	1	4	WSW	0	6	2	2	0	0
14/09/2012	7	ZS	0630	0930	2	4	W	0	8	2	2	0	0
14/09/2012	7	ZS	0630	0930	3	4	W	0	8	2	2	0	0
14/09/2012	7	ZS	1000	1300	1	4	W	0	8	2	2	0	0
14/09/2012	7	ZS	1000	1300	2	4	W	0	8	2	2	0	0
14/09/2012	7	ZS	1000	1300	3	4	W	0	8	2	2	0	0
14/09/2012	9	KJ	0645	0945	1	5	N	0	8	2	2	0	0
14/09/2012	9	KJ	0645	0945	2	5	N	2	8	2	2	0	0
14/09/2012	9	KJ	0645	0945	3	5	N	0	7	2	2	0	0
14/09/2012	9	KJ	0955	1255	1	5	N	2	8	2	2	0	0
14/09/2012	9	KJ	0955	1255	2	5	N	2	8	2	2	0	0
14/09/2012	9	KJ	0955	1255	3	5	N	2	8	2	2	0	0
01/10/2012	6	SS	1250	1550	1	4	SW	1	7	2	2	0	0
01/10/2012	6	SS	1250	1550	2	5	SW	1	6	2	2	0	0
01/10/2012	6	SS	1250	1550	3	5	SW	0	6	2	2	0	0
01/10/2012	6	SS	1600	1900	1	5	SW	2	8	2	2	0	0
01/10/2012	6	SS	1600	1900	2	5	SW	2	6	2	2	0	0
01/10/2012	6	SS	1600	1900	3	5	SW	0	4	2	2	0	0
01/10/2012	7	RC	1245	1545	1	4	SE	0	7	2	2	0	0

Date	VP	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
01/10/2012	7	RC	1245	1545	2	5	S	3	6	2	2	0	0
01/10/2012	7	RC	1245	1545	3	4	S	0	7	2	2	0	0
01/10/2012	7	RC	1555	1855	1	4	S	3	7	2	2	0	0
01/10/2012	7	RC	1555	1855	2	4	S	3	6	2	2	0	0
01/10/2012	7	RC	1555	1855	3	5	S	0	3	2	2	0	0
01/10/2012	9	GJ	1320	1620	1	3	SW	2	6	2	2	0	0
01/10/2012	9	GJ	1320	1620	2	4	W	0	7	2	2	0	0
01/10/2012	9	GJ	1320	1620	3	3	S	0	7	2	2	0	0
01/10/2012	9	GJ	1635	1935	1	4	S	4	8	2	2	0	0
01/10/2012	9	GJ	1635	1935	2	3	S	3	6	2	2	0	0
01/10/2012	9	GJ	1635	1935	3	2	SW	1	7	2	2	0	0
02/10/2012	6	RC	0915	1115	1	3	S	2	8	1	1	0	0
02/10/2012	6	RC	0915	1115	2	4	S	4	8	1	1	0	0
02/10/2012	7	SS	0920	1220	1	4	SW	1	8	2	2	0	0
02/10/2012	7	SS	0920	1220	2	5	SW	3	8	1	1	0	0
02/10/2012	7	SS	0920	1220	3	5	SW	2	8	1	0	0	0
17/10/2012	6	SS	1240	1510	1	3	SE	0	7	2	2	0	0
17/10/2012	6	SS	1240	1510	2	3	SE	0	7	2	2	0	0
17/10/2012	6	SS	1240	1510	2.5	4	SW	2	8	2	1	0	0
17/10/2012	6	SS	1520	1750	1	3	SW	2	8	2	1	0	0
17/10/2012	6	SS	1520	1750	2	2	SW	2	8	2	1	0	0
17/10/2012	6	SS	1520	1750	2.5	2	SW	0	6	2	2	0	0
17/10/2012	7	RA	1245	1515	1	2	SSW	0	7	2	2	0	0
17/10/2012	7	RA	1245	1515	2	3	SSW	3	7	2	2	0	0
17/10/2012	7	RA	1245	1515	2.5	2	WSW	3	8	1	2	0	0
17/10/2012	7	RA	1525	1755	1	1	SSW	2	8	2	2	0	0
17/10/2012	7	RA	1525	1755	2	1	SSW	1	7	2	2	0	0
17/10/2012	7	RA	1525	1755	2.5	1	SSW	0	5	2	2	0	0
17/10/2012	9	ZS	1245	1515	1	3	SW	2	7	2	2	0	0
17/10/2012	9	ZS	1245	1515	2	2	SW	0	7	2	2	0	0
17/10/2012	9	ZS	1245	1515	2.5	2	SW	4	8	1	1	0	0
17/10/2012	9	ZS	1530	1530	1	2	SW	4	8	1	1	0	0
17/10/2012	9	ZS	1530	1530	2	2	SW	4	8	1	1	0	0
17/10/2012	9	ZS	1530	1530	2.5	2	SW	0	7	2	2	0	0
18/10/2012	6	SS	0900	1130	1	0	0	0	4	2	2	0	0
18/10/2012	6	SS	0900	1130	2	1	SSW	0	4	2	2	0	0
18/10/2012	6	SS	0900	1130	2.5	0	0	0	6	2	2	0	0
18/10/2012	6	SS	1140	1410	1	0	0	0	6	2	2	0	0
18/10/2012	6	SS	1140	1410	2	0	0	0	7	2	2	0	0
18/10/2012	6	SS	1140	1410	2.5	1	SSW	1	8	2	2	0	0
18/10/2012	7	RA	0900	1130	1	0	0	0	3	1	2	0	0
18/10/2012	7	RA	0900	1130	2	1	SSW	0	4	1	2	0	0
18/10/2012	7	RA	0900	1130	2.5	1	SW	0	6	1	2	0	0

Date	VP	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
18/10/2012	7	RA	1140	1410	1	2	SW	0	7	2	2	0	0
18/10/2012	7	RA	1140	1410	2	3	WSW	0	7	2	2	0	0
18/10/2012	7	RA	1140	1410	2.5	2	SW	1	8	2	2	0	0
04/12/2012	9	SS	0915	1115	1	1	WSW	0	3	2	2	1	1
04/12/2012	9	SS	0915	1115	2	1	WSW	0	3	2	2	1	1
04/12/2012	9	SS	1125	1325	1	1	WSW	0	7	2	2	1	1
04/12/2012	9	SS	1125	1325	2	1	WSW	0	7	2	2	1	1
16/01/2013	7	AR	0805	1005	1	0	0	0	3	2	2	0	1
16/01/2013	7	AR	0805	1005	2	0	0	0	4	2	2	0	1
16/01/2013	7	AR	1015	1215	1	0	0	0	5	2	2	0	1
16/01/2013	7	AR	1015	1215	2	0	0	0	6	2	2	0	1
16/01/2013	9	KJ	0815	1015	1	0	0	0	6	2	2	2	1
16/01/2013	9	KJ	0815	1015	2	0	0	0	6	2	2	2	1
16/01/2013	9	KJ	1025	1225	1	1	0	0	6	2	2	2	1
16/01/2013	9	KJ	1025	1225	2	1	0	0	6	2	2	2	1
26/02/2013	6	AR	1015	1315	1	3	E	0	4	2	2	0	2
26/02/2013	6	AR	1015	1315	2	4	E	0	3	2	2	0	2
26/02/2013	6	AR	1015	1315	3	3	E	0	3	2	2	0	2
26/02/2013	6	AR	1330	1630	1	3	E	0	2	2	2	0	2
26/02/2013	6	AR	1330	1630	2	2	E	0	2	2	2	0	2
26/02/2013	6	AR	1330	1630	3	2	E	0	2	2	2	0	2
27/02/2013	6	ZS	1250	1450	1	3	NW	0	0	2	2	2	2
27/02/2013	6	ZS	1250	1450	2	3	NW	0	0	2	2	2	2
27/02/2013	7	ZS	0830	1245	1	1	NE	0	0	0	2	2	2
27/02/2013	7	ZS	0830	1245	2	2	NE	0	0	0	2	2	2
27/02/2013	7	ZS	0830	1245	3	2	NE	0	0	0	2	2	2
27/02/2013	7	ZS	0830	1245	4	2	NE	0	0	0	2	2	2
27/02/2013	9	AR	0815	1215	1	0	0	0	0	0	2	2	2
27/02/2013	9	AR	0815	1215	2	0	0	0	0	0	2	2	2
27/02/2013	9	AR	0815	1215	3	0	0	0	0	0	2	2	2
27/02/2013	9	AR	0815	1215	4	0	0	0	0	0	2	2	2
28/02/2013	6	ZS	0815	1115	1	1	N	0	8	0	1	2	2
28/02/2013	6	ZS	0815	1115	2	2	N	0	8	0	1	2	2
28/02/2013	6	ZS	0815	1115	3	3	N	0	8	0	2	2	2
28/02/2013	6	AR	1130	1430	4	2	N	0	2	2	2	2	2
28/02/2013	6	AR	1130	1430	5	3	N	0	7	2	2	2	2
28/02/2013	6	AR	1130	1430	6	4	N	0	8	2	2	2	2
26/03/2013	6	SS/JM	1310	1510	1	6	NE	2	8	1	1	2	1
26/03/2013	6	SS/JM	1310	1510	2	6	NE	2	8	1	1	2	1
26/03/2013	6	SS/JM	1520	1720	1	6	NE	2	8	1	1	2	1
26/03/2013	6	SS/JM	1520	1720	2	7	NE	2	8	1	1	2	1
26/03/2013	9	RA	1250	1450	1	4	E	2	7	2	2	1	1
26/03/2013	9	RA	1250	1450	2	4	E	2	8	2	2	1	1

Date	VP	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
26/03/2013	9	RA	1500	1700	1	4	E	2	8	2	2	1	1
26/03/2013	9	RA	1500	1700	2	4	E	2	6	2	2	1	1
27/03/2013	7	RA	0920	1120	1	5	NE	3	8	1	2	2	1
27/03/2013	7	RA	0920	1120	2	6	NE	2	8	1	2	2	1
27/03/2013	7	RA	1130	1330	1	6	NE	3	8	1	1	2	1
27/03/2013	7	RA	1130	1330	2	5	NE	2	8	1	2	2	1
27/03/2013	9	JM	1010	1210	1	6	E	0	8	1	1	1	1
27/03/2013	9	JM	1010	1210	2	4	E	3	8	1	1	1	1
27/03/2013	9	JM	1220	1420	1	4	E	0	6	1	2	1	1
27/03/2013	9	JM	1220	1420	2	5	E	1	7	1	1	1	1
23/04/2013	6	PR	0700	0900	1	4	SW	0	5	1	1	0	0
23/04/2013	6	PR	0700	0900	2	4	SW	0	6	2	2	0	0
23/04/2013	6	PR	0910	1110	1	4	W	0	4	2	2	0	0
23/04/2013	6	PR	0910	1110	2	4	SW	0	6	2	2	0	0
23/04/2013	9	RC	0700	0900	1	4	SW	1	8	1	1	0	0
23/04/2013	9	RC	0700	0900	2	4	SW	0	6	2	1	0	0
23/04/2013	9	RC	0910	1110	1	3	SW	0	6	2	2	0	0
23/04/2013	9	RC	0910	1110	2	4	SW	0	7	2	2	0	0
22/05/2013	7	CS	1400	1700	1	2	NW	0	4	2	2	0	0
22/05/2013	7	CS	1400	1700	2	2	NW	0	4	2	2	0	0
22/05/2013	7	CS	1400	1700	3	2	NE	0	7	2	2	0	0
22/05/2013	7	CS	1800	2100	1	2	NW	0	3	2	2	0	0
22/05/2013	7	CS	1800	2100	2	3	NW	0	3	2	2	0	0
22/05/2013	7	CS	1800	2100	3	1	NW	0	4	2	2	0	0
22/05/2013	9	RS	1410	1710	1	3	NE	0	4	2	2	0	0
22/05/2013	9	RS	1410	1710	2	2	NE	0	4	2	2	0	0
22/05/2013	9	RS	1410	1710	3	3	N	0	6	2	2	0	0
22/05/2013	9	RS	1810	2110	1	3	N	0	5	2	2	0	0
22/05/2013	9	RS	1810	2110	2	3	N	0	4	2	2	0	0
22/05/2013	9	RS	1810	2110	3	2	N	0	7	2	2	0	0
23/05/2013	6	CS	0835	1135	1	3	NW	3	8	2	2	0	0
23/05/2013	6	CS	0835	1135	2	3	NW	3	8	2	2	0	0
23/05/2013	6	CS	0835	1135	3	2	NW	3	8	2	2	0	0
23/05/2013	6	RS	1135	1435	1	3	NW	0	7	2	2	0	0
23/05/2013	6	RS	1135	1435	2	3	NW	2	7	2	2	0	0
23/05/2013	6	RS	1135	1435	3	3	NW	2	7	2	2	0	0
30/05/2013	7	MO	0500	0800	1	2	N	0	8	2	2	0	0
30/05/2013	7	MO	0500	0800	2	3	NE	0	8	2	2	0	0
30/05/2013	7	MO	0500	0800	3	4	NE	2	8	1	1	0	0
30/05/2013	7	MO	0900	1200	1	3	NE	1	8	1	1	0	0
30/05/2013	7	MO	0900	1200	2	2	NE	1	8	0	0	0	0
30/05/2013	7	MO	0900	1200	3	2	NE	1	8	0	0	0	0
05/06/2013	6	MO	1410	1810	1	3	NE	0	3	2	2	0	0

Date	VP	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
05/06/2013	6	MO	1410	1810	2	3	NE	0	6	2	2	0	0
05/06/2013	6	MO	1410	1810	3	3	N	0	7	2	2	0	0
05/06/2013	6	MO	1410	1810	4	3	N	0	7	2	2	0	0
05/06/2013	7	MO	1925	2125	1	2	S	0	8	2	2	0	0
05/06/2013	7	MO	1925	2125	2	2	S	0	8	2	2	0	0
06/06/2013	7	MO	1100	1400	1	1	N	0	6	2	2	0	0
06/06/2013	7	MO	1100	1400	2	1	N	0	5	2	2	0	0
06/06/2013	7	MO	1100	1400	3	0	0	0	5	2	2	0	0
06/06/2013	7	MO	1500	1800	1	2	N	0	7	2	2	0	0
06/06/2013	7	MO	1500	1800	2	2	N	0	7	2	2	0	0
06/06/2013	7	MO	1500	1800	3	2	E	0	7	2	2	0	0
18/06/2013	6	RS	0925	1225	1	1	SSW	0	4	2	2	0	0
18/06/2013	6	RS	0925	1225	2	2	SSW	0	4	2	2	0	0
18/06/2013	6	RS	0925	1225	3	2	SSW	0	4	2	2	0	0
18/06/2013	9	MO	0915	1215	1	2	SW	0	2	2	2	0	0
18/06/2013	9	MO	0915	1215	2	2	SW	0	3	2	2	0	0
18/06/2013	9	MO	0915	1215	3	1	SW	0	3	2	2	0	0
19/06/2013	6	RS	0530	0830	1	0	0	0	5	2	2	0	0
19/06/2013	6	RS	0530	0830	2	0	0	0	7	2	2	0	0
19/06/2013	6	RS	0530	0830	3	1	SSW	0	7	2	2	0	0
19/06/2013	9	MO	0520	0820	1	0	0	0	3	2	2	0	0
19/06/2013	9	MO	0520	0820	2	1	SW	0	7	2	2	0	0
19/06/2013	9	MO	0520	0820	3	1	SW	0	8	2	2	0	0
05/07/2013	7	ND	0530	0830	1	4	SW	0	8	2	2	0	0
05/07/2013	7	ND	0530	0830	2	4	SW	0	8	2	2	0	0
05/07/2013	7	ND	0530	0830	3	4	SW	0	8	2	2	0	0
05/07/2013	7	ND	0845	1145	1	4	SW	0	8	2	2	0	0
05/07/2013	7	ND	0845	1145	2	5	S	0	6	2	2	0	0
05/07/2013	7	ND	0845	1145	3	5	S	0	6	2	2	0	0
24/07/2013	9	JM	0550	0850	1	0	0	0	6	1	1	0	0
24/07/2013	9	JM	0550	0850	2	1	SSE	0	5	2	2	0	0
24/07/2013	9	JM	0550	0850	3	1	SSE	0	5	2	2	0	0
24/07/2013	9	JM	0900	1200	1	1	S	0	4	2	2	0	0
24/07/2013	9	JM	0900	1200	2	1	SW	0	5	2	2	0	0
24/07/2013	9	JM	0900	1200	3	2	SW	0	6	2	2	0	0
25/07/2013	6	JM	1430	1730	1	2	SW	0	6	2	2	0	0
25/07/2013	6	JM	1430	1730	2	2	SW	0	5	2	2	0	0
25/07/2013	6	JM	1430	1730	3	3	SW	0	6	2	2	0	0
25/07/2013	6	JM	1740	2040	1	3	S	0	6	2	2	0	0
25/07/2013	6	JM	1740	2040	2	2	S	2	8	2	2	0	0
25/07/2013	6	JM	1740	2040	3	2	S	0	6	2	2	0	0
01/08/2013	6	JM	0555	0855	1	4	SSW	4	8	1	0	0	0
01/08/2013	6	JM	0555	0855	2	3	SSW	4	8	1	1	0	0

Date	VP	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
01/08/2013	6	JM	0555	0855	3	4	SSW	4	8	1	0	0	0
01/08/2013	6	JM	0905	1205	1	3	SSW	4	8	0	0	0	0
01/08/2013	6	JM	0905	1205	2	4	S	3	8	1	1	0	0
01/08/2013	6	JM	0905	1205	3	4	S	3	8	1	2	0	0
27/08/2013	6	ND	1150	1320	1	3	WNW	0	7	2	2	0	0
27/08/2013	6	ND	1150	1320	2	2	WSW	0	5	2	2	0	0
28/08/2013	9	ND	1345	1645	1	3	SW	0	8	1	2	0	0
28/08/2013	9	ND	1345	1645	2	4	SSW	0	8	1	2	0	0
28/08/2013	9	ND	1345	1645	3	4	SW	0	6	2	2	0	0
28/08/2013	9	ND	1700	2000	1	4	SW	0	5	2	2	0	0
28/08/2013	9	ND	1700	2000	2	4	SSW	0	6	2	2	0	0
28/08/2013	9	ND	1700	2000	3	5	SSW	0	5	2	2	0	0
29/08/2013	7	ND	1350	1650	1	5	WNW	0	8	2	2	0	0
29/08/2013	7	ND	1350	1650	2	4	WNW	0	8	2	2	0	0
29/08/2013	7	ND	1350	1650	3	3	W	2	8	2	2	0	0
29/08/2013	7	ND	1700	2000	1	4	WSW	2	8	2	2	0	0
29/08/2013	7	ND	1700	2000	2	3	WSW	2	8	2	2	0	0
29/08/2013	7	ND	1700	2000	3	2	W	2	8	1	2	0	0
19/10/2020	11	MW	0830	1130	1	4	SW	0	8	2	2	0	0
19/10/2020	11	MW	0830	1130	2	5	SW	0	8	2	2	0	0
19/10/2020	11	MW	0830	1130	3	6	SW	0	8	2	2	0	0
19/10/2020	11	MW	1200	1500	1	6	SW	0	8	2	2	0	0
19/10/2020	11	MW	1200	1500	2	6	SW	0	8	2	2	0	0
19/10/2020	11	MW	1200	1500	3	6	SW	0	8	2	2	0	0
20/10/2020	11	MW	0730	1030	1	1	S	0	8	1	1	0	0
20/10/2020	11	MW	0730	1030	2	2	S	0	8	2	2	0	0
20/10/2020	11	MW	0730	1030	3	5	SSE	0	8	2	2	0	0
20/10/2020	11	MW	1100	1400	1	5	SSE	0	7	2	2	0	0
20/10/2020	11	MW	1100	1400	2	4	SSE	2	8	2	2	0	0
20/10/2020	11	MW	1100	1400	3	3	SSE	2	8	2	2	0	0
21/10/2020	11	MW	0740	1040	1	4	SE	0	8	2	2	0	0
21/10/2020	11	MW	0740	1040	2	4	SE	2	8	2	2	0	0
21/10/2020	11	MW	0740	1040	3	4	SE	0	8	2	2	0	0
22/10/2020	10	MW	0730	1030	1	3	NNW	0	8	2	2	0	0
22/10/2020	10	MW	0730	1030	2	3	NNW	0	8	2	2	0	0
22/10/2020	10	MW	0730	1030	3	3	NNW	0	8	2	2	0	0
22/10/2020	10	MW	1100	1400	1	4	NNW	0	8	2	2	0	0
22/10/2020	10	MW	1100	1400	2	4	NNW	0	8	2	2	0	0
22/10/2020	10	MW	1100	1400	3	4	NNW	0	8	2	2	0	0
23/10/2020	10	MW	0930	1230	1	4	SW	2	8	2	2	0	0
23/10/2020	10	MW	0930	1230	2	5	SW	3	8	2	2	0	0
23/10/2020	10	MW	0930	1230	3	5	SW	4	8	2	2	0	0
23/10/2020	10	MW	1300	1500	1	5	SW	0	8	2	2	0	0

Date	VP	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
23/10/2020	10	MW	1300	1500	2	6	SW	0	8	2	2	0	0
05/11/2020	10	MW	0715	1015	1	3	SW	0	8	2	2	0	0
05/11/2020	10	MW	0715	1015	2	4	SW	0	8	2	2	0	0
05/11/2020	10	MW	0715	1015	3	5	SW	0	8	2	2	0	0
05/11/2020	10	MW	1045	1345	1	5	SW	0	6	2	2	0	0
05/11/2020	10	MW	1045	1345	2	6	SW	0	7	2	2	0	0
05/11/2020	10	MW	1045	1345	3	6	SW	0	8	2	2	0	0
06/11/2020	11	MW	0715	1015	1	1	W	0	1	2	2	0	0
06/11/2020	11	MW	0715	1015	2	1	W	0	1	2	2	0	0
06/11/2020	11	MW	0715	1015	3	2	W	0	2	2	2	0	0
06/11/2020	11	MW	1045	1345	1	2	W	0	3	2	2	0	0
06/11/2020	11	MW	1045	1345	2	2	W	0	3	2	2	0	0
06/11/2020	11	MW	1045	1345	3	2	W	0	4	2	2	0	0
03/12/2020	11	MW	0800	1100	1	2	WSW	3	8	2	2	0	0
03/12/2020	11	MW	0800	1100	2	2	WSW	3	8	2	2	0	0
03/12/2020	11	MW	0800	1100	3	2	SW	0	8	2	2	0	0
03/12/2020	11	MW	1130	1330	1	2	SW	0	8	2	2	0	0
03/12/2020	11	MW	1130	1330	2	1	SW	0	8	2	2	0	0
04/12/2020	10	MW	0815	1115	1	2	NE	0	8	2	2	0	1
04/12/2020	10	MW	0815	1115	2	2	NE	3	8	2	2	0	1
04/12/2020	10	MW	0815	1115	3	2	NE	3	8	1	1	0	1
04/12/2020	10	MW	1145	1345	1	3	NE	0	8	1	1	0	1
04/12/2020	10	MW	1145	1345	2	3	NE	2	8	0	0	0	1
11/01/2021	11	MW	0830	1130	1	3	SW	1	8	2	2	0	1
11/01/2021	11	MW	0830	1130	2	4	SW	1	8	2	2	0	1
11/01/2021	11	MW	0830	1130	3	5	SW	1	8	2	2	0	1
11/01/2021	11	MW	1200	1400	1	5	SW	0	8	2	2	0	1
11/01/2021	11	MW	1200	1400	2	5	SW	0	8	2	2	0	1
12/01/2021	10	MW	0830	1130	1	1	SW	0	1	2	2	1	1
12/01/2021	10	MW	0830	1130	2	1	SW	0	1	2	2	1	1
12/01/2021	10	MW	0830	1130	3	2	SW	0	1	2	2	1	1
12/01/2021	10	MW	1200	1400	1	2	SW	0	1	2	2	1	1
12/01/2021	10	MW	1200	1400	2	2	SW	0	1	2	2	1	1
23/02/2021	11	MW	0700	1000	1	6	SSE	0	8	2	2	0	2
23/02/2021	11	MW	0700	1000	2	7	SSE	4	8	2	2	0	2
23/02/2021	11	MW	0700	1000	3	7	S	4	8	2	2	0	2
23/02/2021	11	MW	1030	1230	1	8	S	4	8	2	2	0	2
23/02/2021	11	MW	1030	1230	2	7	S	4	8	2	2	0	2
24/02/2021	10	MW	0700	1000	1	5	SSW	3	8	2	2	0	2
24/02/2021	10	MW	0700	1000	2	5	SSW	4	8	2	2	0	2
24/02/2021	10	MW	0700	1000	3	6	SSW	3	8	2	2	0	2
24/02/2021	10	MW	1030	1230	1	6	SSW	3	8	2	2	0	2
24/02/2021	10	MW	1030	1230	2	7	SSW	3	8	2	2	0	2

Date	VP	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
12/03/2021	11	MW	0700	1000	1	3	SW	3	8	2	2	0	0
12/03/2021	11	MW	0700	1000	2	4	SW	3	8	2	2	0	0
12/03/2021	11	MW	0700	1000	3	5	SW	3	8	2	2	0	0
12/03/2021	11	MW	1030	1230	1	5	SW	3	8	2	2	0	0
12/03/2021	11	MW	1030	1230	2	6	SW	3	8	2	2	0	0
15/03/2021	10	MW	0700	1000	1	2	NNW	0	3	2	2	1	0
15/03/2021	10	MW	0700	1000	2	3	NNW	0	4	2	2	1	0
15/03/2021	10	MW	0700	1000	3	4	NNW	0	5	2	2	0	0
15/03/2021	10	MW	1030	1230	1	5	NNW	0	6	2	2	0	0
15/03/2021	10	MW	1030	1230	2	5	NNW	0	7	2	2	0	0
18/03/2021	11	MW	0645	0945	1	2	NNW	0	8	2	2	0	0
18/03/2021	11	MW	0645	0945	2	2	NNW	0	8	2	2	0	0
18/03/2021	11	MW	0645	0945	3	3	NNW	0	7	2	2	0	0
18/03/2021	11	MW	1015	1315	1	3	NNW	0	6	2	2	0	0
18/03/2021	11	MW	1015	1315	2	3	NNW	0	4	2	2	0	0
18/03/2021	11	MW	1015	1315	3	4	NNW	0	4	2	2	0	0
19/03/2021	10	MW	0645	0945	1	2	NNE	1	8	1	1	0	0
19/03/2021	10	MW	0645	0945	2	3	NNE	0	8	2	2	0	0
19/03/2021	10	MW	0645	0945	3	3	NNE	0	8	2	2	0	0
19/03/2021	10	MW	1015	1215	1	4	NNE	0	8	2	2	0	0
19/03/2021	10	MW	1015	1215	2	4	NNE	0	8	2	2	0	0
12/04/2021	10	MW	0630	0930	1	1	NW	0	1	2	2	1	0
12/04/2021	10	MW	0630	0930	2	1	NW	0	1	2	2	1	0
12/04/2021	10	MW	0630	0930	3	3	NW	0	2	2	2	1	0
12/04/2021	10	MW	1000	1300	1	3	NW	0	2	2	2	0	0
12/04/2021	10	MW	1000	1300	2	4	NW	0	2	2	2	0	0
12/04/2021	10	MW	1000	1300	3	4	NW	0	3	2	2	0	0
19/04/2021	11	MW	0700	1000	1	2	SSE	0	1	2	2	0	0
19/04/2021	11	MW	0700	1000	2	2	SSE	0	1	2	2	0	0
19/04/2021	11	MW	0700	1000	3	3	SSE	0	1	2	2	0	0
19/04/2021	11	MW	1030	1330	1	3	SSE	0	1	2	2	0	0
19/04/2021	11	MW	1030	1330	2	3	SE	0	1	2	2	0	0
19/04/2021	11	MW	1030	1330	3	3	SE	0	1	2	2	0	0
06/05/2021	10	MW	0700	1000	1	3	WNW	3	8	2	2	1	1
06/05/2021	10	MW	0700	1000	2	3	WNW	3	8	2	2	1	1
06/05/2021	10	MW	0700	1000	3	3	WNW	3	8	1	1	1	1
07/05/2021	10	MW	0700	1000	1	2	W	0	7	2	2	0	0
07/05/2021	10	MW	0700	1000	2	2	W	0	7	2	2	0	0
07/05/2021	10	MW	0700	1000	3	3	W	0	6	2	2	0	0
10/05/2021	11	MW	0700	1000	1	3	SE	0	8	2	2	0	0
10/05/2021	11	MW	0700	1000	2	3	SE	0	8	2	2	0	0
10/05/2021	11	MW	0700	1000	3	3	SE	3	8	2	2	0	0
10/05/2021	11	MW	1030	1330	1	3	SE	3	7	2	2	0	0

Date	VP	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
10/05/2021	11	MW	1030	1330	2	3	SE	0	7	2	2	0	0
10/05/2021	11	MW	1030	1330	3	4	SE	3	7	2	2	0	0
04/06/2021	10	MW	0530	0830	1	4	SSW	0	8	2	2	0	0
04/06/2021	10	MW	0530	0830	2	4	SSW	0	8	2	2	0	0
04/06/2021	10	MW	0530	0830	3	4	SSW	0	8	2	2	0	0
04/06/2021	10	MW	0900	1200	1	5	SSW	0	8	2	2	0	0
04/06/2021	10	MW	0900	1200	2	5	SSW	0	7	2	2	0	0
04/06/2021	10	MW	0900	1200	3	5	SSW	0	7	2	2	0	0
07/06/2021	11	MW	0600	0900	1	2	S	0	8	2	2	0	0
07/06/2021	11	MW	0600	0900	2	2	S	0	8	2	2	0	0
07/06/2021	11	MW	0600	0900	3	3	S	0	7	2	2	0	0
07/06/2021	11	MW	0930	1230	1	3	S	0	7	2	2	0	0
07/06/2021	11	MW	0930	1230	2	3	S	0	7	2	2	0	0
07/06/2021	11	MW	0930	1230	3	2	S	0	8	2	2	0	0
05/07/2021	10	MW	0530	0830	1	1	SW	3	8	2	2	0	0
05/07/2021	10	MW	0530	0830	2	1	SW	3	8	2	2	0	0
05/07/2021	10	MW	0530	0830	3	2	SW	0	8	2	2	0	0
05/07/2021	10	MW	0900	1200	1	2	SW	0	8	2	2	0	0
05/07/2021	10	MW	0900	1200	2	2	SW	0	8	2	2	0	0
05/07/2021	10	MW	0900	1200	3	3	SW	3	8	2	2	0	0
05/07/2021	10	MW	1230	1330	1	5	SW	0	8	2	2	0	0
06/07/2021	11	MW	0615	0915	1	1	NE	4	8	1	1	0	0
06/07/2021	11	MW	0615	0915	2	2	NE	4	8	1	1	0	0
06/07/2021	11	MW	0615	0915	3	3	NE	4	8	2	2	0	0
06/07/2021	11	MW	0945	1245	1	3	NE	4	8	2	2	0	0
06/07/2021	11	MW	0945	1245	2	3	NE	4	8	2	2	0	0
06/07/2021	11	MW	0945	1245	3	3	NE	3	8	2	2	0	0
02/08/2021	11	MW	0615	0915	1	4	SSW	0	8	2	2	0	0
02/08/2021	11	MW	0615	0915	2	5	SSW	0	7	2	2	0	0
02/08/2021	11	MW	0615	0915	3	5	SSW	0	7	2	2	0	0
02/08/2021	11	MW	0945	1245	1	4	SSW	0	6	2	2	0	0
02/08/2021	11	MW	0945	1245	2	4	SSW	0	6	2	2	0	0
02/08/2021	11	MW	0945	1245	3	4	SSW	0	6	2	2	0	0
05/08/2021	10	MW	0600	0900	1	3	SSW	0	8	2	2	0	0
05/08/2021	10	MW	0600	0900	2	3	SSW	0	8	2	2	0	0
05/08/2021	10	MW	0600	0900	3	4	SSW	0	7	2	2	0	0
05/08/2021	10	MW	0930	1230	1	4	SSW	0	7	2	2	0	0
05/08/2021	10	MW	0930	1230	2	4	SSW	0	6	2	2	0	0
05/08/2021	10	MW	0930	1230	3	4	SSW	0	6	2	2	0	0

C.2 Moorland Breeding Bird Surveys

Moorland breeding bird surveys were undertaken during the 2011, 2012 and 2013 breeding seasons. **Table C-4** details survey dates and weather data recorded. Refer to **Annex B** for survey methodology and **Annex D** for survey results.

Table C-4: Meteorological Conditions During Breeding Bird Surveys at the Proposed Development (sorted chronologically)

Date	Survey visit	Observer	Survey Start Time	Survey Finish time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
25/04/2011	1	RP	No weather data										
06/06/2011	2	RP	0850	1740	All day	-	N	-	7	-	-	-	-
16/05/2012	3	BA,GT	0550	1130	1	0	0	0	0	2	2	0	0
16/05/2012	3	BA,GT	0550	1130	2	1	W	0	0	2	2	0	0
16/05/2012	3	BA,GT	0550	1130	3	2	W	0	2	2	2	0	0
16/05/2012	3	BA,GT	0550	1130	4	3	W	2	4	2	2	0	0
16/05/2012	3	BA,GT	0550	1130	5	3	W	2	6	2	2	0	0
22/04/2013	1	PR	1345	1630	1	8	SW	1	8	2	1	0	0
22/04/2013	1	PR	1345	1630	2	9	SW	1	8	0	0	0	0
22/04/2013	1	PR	1345	1630	3	6	SW	0	8	2	1	0	0
24/04/2013	1	PR	0930	1240	1	5	SSW	1	8	1	0	0	0
24/04/2013	1	PR	0930	1240	2	5	SW	1	8	0	0	0	0
24/04/2013	1	PR	0930	1240	3	7	SW	4	8	0	0	0	0
22/05/2013	2	RS/CS	0845	1230	1	3	NW	0	7	2	2	0	0
22/05/2013	2	RS/CS	0845	1230	2	2	NW	0	4	2	2	0	0
22/05/2013	2	RS/CS	0845	1230	3	2	NW	0	5	2	2	0	0
22/05/2013	2	RS/CS	0845	1230	4	2	NW	0	5	2	2	0	0
18/06/2013	3	RS/MO	0550	0905	1	1	S	0	8	2	2	0	0
18/06/2013	3	RS/MO	0550	0905	2	1	S	0	8	2	2	0	0
18/06/2013	3	RS/MO	0550	0905	3	1	S	0	8	2	2	0	0
11/07/2013	4	ND	1400	2030	1	2	W	0	0	2	2	0	0
11/07/2013	4	ND	1400	2030	1	2	W	0	0	2	2	0	0
11/07/2013	4	ND	1400	2030	2	2	W	0	0	2	2	0	0
11/07/2013	4	ND	1400	2030	3	2	W	0	0	2	2	0	0
11/07/2013	4	ND	1400	2030	4	2	E	0	0	2	2	0	0
11/07/2013	4	ND	1400	2030	5	1	SW	0	0	2	2	0	0
11/07/2013	4	ND	1400	2030	6	1	SW	0	1	2	2	0	0
12/07/2013	4	ND	1130	1730	1	3	W	0	6	2	2	0	0
12/07/2013	4	ND	1130	1730	2	4	SW	0	5	2	2	0	0
12/07/2013	4	ND	1130	1730	3	4	W	0	5	2	2	0	0
12/07/2013	4	ND	1130	1730	4	4	SW	0	6	2	2	0	0
12/07/2013	4	ND	1130	1730	5	4	NW	0	7	2	2	0	0
12/07/2013	4	ND	1130	1730	6	4	WNW	0	6	2	2	0	0

C.3 Winter Walkover Surveys

Winter walkover surveys were undertaken during the 2011/2012, 2012/2013 and 2020/2021 non-breeding seasons. **Table C-5** details survey dates and weather data recorded. Refer to **Annex B** for survey methodology and **Annex D** for survey results.

Table C-5: Meteorological Conditions During Winter Walkover Surveys at the Proposed Development (sorted chronologically)

Date	Survey visit	Observer	Survey Start Time	Survey Finish time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
27/12/2011	1	TC/MD	0930	1330	1	2	WNW	0	4	1	2	0	0
27/12/2011	1	TC/MD	0930	1330	2	2	WNW	0	4	1	2	0	0

Date	Survey visit	Observer	Survey Start Time	Survey Finish time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
27/12/2011	1	TC/MD	0930	1330	3	2	WNW	0	4	1	2	0	0
27/12/2011	1	TC/MD	0930	1330	4	2	WNW	0	4	1	2	0	0
25/01/2012	2	TC	0915	1245	1	3	SW	1	8	1	1	0	0
25/01/2012	2	TC	0915	1245	2	3	SSW	0	8	1	1	0	0
25/01/2012	2	TC	0915	1245	3	3	SSW	0	8	1	1	0	0
25/01/2012	2	TC	0915	1245	4	3	SSW	2	8	1	1	0	0
05/02/2012	3	JN	1020	1225	1	1	SW	0	6	2	2	2	1
05/02/2012	3	JN	1020	1225	2	2	SW	0	4	2	2	2	1
05/02/2012	3	RW	1015	1215	1	2	WSW	0	5	2	2	0	1
03/12/2012	4	SS/ZS	1150	1550	1	4	W	0	3	2	2	1	1
03/12/2012	4	SS/ZS	1150	1550	2	4	W	0	5	2	2	1	1
03/12/2012	4	SS/ZS	1150	1550	3	3	W	1	8	1	1	1	1
03/12/2012	4	SS/ZS	1150	1550	4	3	W	1	6	1	2	1	1
04/12/2012	4	ZS	0915	1415	1	3	WSW	0	6	2	2	1	1
04/12/2012	4	ZS	0915	1415	2	3	WSW	0	5	2	2	1	1
04/12/2012	4	ZS	0915	1415	3	3	WSW	0	4	2	2	1	1
04/12/2012	4	ZS	0915	1415	4	2	WSW	0	7	2	2	1	1
04/12/2012	4	ZS	0915	1415	5	2	WSW	0	8	1	2	1	1
14/01/2013	5	KJ	1100	1530	1	2	N	0	5	2	2	0	2
14/01/2013	5	KJ	1100	1530	2	4	N	0	6	2	2	0	2
14/01/2013	5	KJ	1100	1530	3	4	N	0	6	2	2	0	2
14/01/2013	5	KJ	1100	1530	4	5	N	0	7	2	2	0	2
14/01/2013	5	KJ	1100	1530	5	5	N	0	7	2	2	0	2
14/01/2013	5	AR	1100	1530	1	2	w	0	4	2	2	0	0
14/01/2013	5	AR	1100	1530	2	1	w	0	6	2	2	0	0
14/01/2013	5	AR	1100	1530	3	2	w	0	6	2	2	0	0
14/01/2013	5	AR	1100	1530	4	2	w	0	6	2	2	0	0
15/01/2013	5	KJ	0900	1400	1	2	SW	0	6	2	2	2	2
15/01/2013	5	KJ	0900	1400	2	2	SW	0	5	2	2	2	2
15/01/2013	5	KJ	0900	1400	3	2	SW	0	5	2	2	2	2
15/01/2013	5	KJ	0900	1400	4	2	SW	0	5	2	1	2	2
15/01/2013	5	KJ	0900	1400	5	2	SW	0	5	2	1	2	2
15/01/2013	5	AR	0900	1400	1	1	0	0	6	2	2	1	1
15/01/2013	5	AR	0900	1400	2	2	0	0	6	2	2	1	1
15/01/2013	5	AR	0900	1400	3	1	0	0	5	2	2	1	1
15/01/2013	5	AR	0900	1400	4	2	0	0	5	2	2	1	1
25/02/2013	6	AR/ZS	1145	1645	1	4	NE	0	5	2	2	2	1
25/02/2013	6	AR/ZS	1145	1645	2	4	NE	0	5	2	2	2	1
25/02/2013	6	AR/ZS	1145	1645	3	4	NE	0	4	2	2	2	1
25/02/2013	6	AR/ZS	1145	1645	4	4	NE	0	4	2	2	2	1
25/02/2013	6	AR/ZS	1145	1645	5	4	NE	0	4	2	2	2	2
26/02/2013	6	ZS	1015	1415	1	3	0	0	8	1	2	2	1
26/02/2013	6	ZS	1015	1415	2	3	0	0	8	2	2	2	2

Date	Survey visit	Observer	Survey Start Time	Survey Finish time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
26/02/2013	6	ZS	1015	1415	3	2	0	0	6	2	2	2	2
26/02/2013	6	ZS	1015	1415	4	2	0	0	6	2	2	2	2
27/02/2013	6	AR	1230	1500	1	2	NW	0	2	2	2	2	2
27/02/2013	6	AR	1230	1500	2	2	NW	0	2	2	2	2	2
28/02/2013	6	AR	0815	1115	1	1	N	0	8	0	1	2	2
28/02/2013	6	AR	0815	1115	2	2	N	0	8	0	1	2	2
28/02/2013	6	AR	0815	1115	3	3	N	0	8	0	2	2	2
12/11/2013	1	PR/AW	0900	1500	1	3	SW	0	2	2	2	0	0
12/11/2013	1	PR/AW	0900	1500	2	3	SW	0	4	2	2	0	0
12/11/2013	1	PR/AW	0900	1500	3	3	SW	0	3	2	2	0	0
12/11/2013	1	PR/AW	0900	1500	4	2	SW	0	1	2	2	0	0
12/11/2013	1	PR/AW	0900	1500	5	3	SW	0	2	2	2	0	0
12/11/2013	1	PR/AW	0900	1500	6	3	SW	0	3	2	2	0	0
24/01/2014	2	FD/AW	0950	1450	1	2	SE	0	6	2	2	1	0
24/01/2014	2	FD/AW	0950	1450	2	3	SE	0	7	2	2	1	0
24/01/2014	2	FD/AW	0950	1450	3	4	SE	0	7	2	2	1	0
24/01/2014	2	FD/AW	0950	1450	4	4	SE	0	7	2	2	0	0
24/01/2014	2	FD/AW	0950	1450	5	4	S	0	7	2	2	0	0
12/11/2020	1	MW	0800	1400	1	5	SSW	0	8	2	2	0	0
12/11/2020	1	MW	0800	1400	2	5	SSW	0	8	2	2	0	0
12/11/2020	1	MW	0800	1400	3	5	SSW	0	7	2	2	0	0
12/11/2020	1	MW	0800	1400	4	6	SSW	0	7	2	2	0	0
12/11/2020	1	MW	0800	1400	5	6	SSW	0	7	2	2	0	0
12/11/2020	1	MW	0800	1400	6	5	SSW	0	8	2	2	0	0
02/12/2020	2	MW	0800	1400	1	3	SW	3	7	2	2	0	0
02/12/2020	2	MW	0800	1400	2	3	SW	0	6	2	2	0	0
02/12/2020	2	MW	0800	1400	3	2	SW	0	4	2	2	0	0
02/12/2020	2	MW	0800	1400	4	3	SW	0	3	2	2	0	0
02/12/2020	2	MW	0800	1400	5	2	WSW	0	3	2	2	0	0
02/12/2020	2	MW	0800	1400	6	2	WSW	0	3	2	2	0	0
25/02/2021	3	MW	0700	1200	1	4	SW	0	8	2	2	0	2
25/02/2021	3	MW	0700	1200	2	4	SW	0	7	2	2	0	2
25/02/2021	3	MW	0700	1200	3	5	SW	0	6	2	2	0	2
25/02/2021	3	MW	0700	1200	4	5	SW	0	7	2	2	0	2
25/02/2021	3	MW	0700	1200	5	4	SW	0	7	2	2	0	2
12/11/2020	1	MW	0800	1400	1	5	SSW	0	8	2	2	0	0
12/11/2020	1	MW	0800	1400	2	5	SSW	0	8	2	2	0	0
12/11/2020	1	MW	0800	1400	3	5	SSW	0	7	2	2	0	0
12/11/2020	1	MW	0800	1400	4	6	SSW	0	7	2	2	0	0
12/11/2020	1	MW	0800	1400	5	6	SSW	0	7	2	2	0	0
12/11/2020	1	MW	0800	1400	6	5	SSW	0	8	2	2	0	0
02/12/2020	2	MW	0800	1400	1	3	SW	3	7	2	2	0	0
02/12/2020	2	MW	0800	1400	2	3	SW	0	6	2	2	0	0

Date	Survey visit	Observer	Survey Start Time	Survey Finish time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
02/12/2020	2	MW	0800	1400	3	2	SW	0	4	2	2	0	0
02/12/2020	2	MW	0800	1400	4	3	SW	0	3	2	2	0	0
02/12/2020	2	MW	0800	1400	5	2	WSW	0	3	2	2	0	0
02/12/2020	2	MW	0800	1400	6	2	WSW	0	3	2	2	0	0
25/02/2021	3	MW	0700	1200	1	4	SW	0	8	2	2	0	2
25/02/2021	3	MW	0700	1200	2	4	SW	0	7	2	2	0	2
25/02/2021	3	MW	0700	1200	3	5	SW	0	6	2	2	0	2
25/02/2021	3	MW	0700	1200	4	5	SW	0	7	2	2	0	2
25/02/2021	3	MW	0700	1200	5	4	SW	0	7	2	2	0	2

C.4 Scarce Breeding Bird Surveys

Scarce breeding bird surveys were undertaken during the 2012, 2013 2015 and 2021 breeding seasons. **Table C-6** details survey dates and weather data recorded. Refer to **Annex B** for survey methodology and **Annex D** for survey results.

Table C-6: Meteorological Conditions During Scarce Breeding Bird Surveys at the Proposed Development (sorted chronologically)

Date	Survey visit	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
15/03/2012	1	KDS	0935	1605	1	2	SSW	0	8	2	2	0	0
15/03/2012	1	KDS	0935	1605	2	3	SSW	0	8	2	2	0	0
15/03/2012	1	KDS	0935	1605	3	3	SSW	0	8	2	2	0	0
15/03/2012	1	KDS	0935	1605	4	4	SSW	0	8	1	2	0	0
15/03/2012	1	KDS	0935	1605	5	4	SSW	1	8	1	1	0	0
15/03/2012	1	KDS	0935	1605	6	4	SSW	0	8	2	2	0	0
15/03/2012	1	KDS	0935	1605	7	5	SSW	0	7	2	2	0	0
28/03/2012	1	KDS	0905	1650	1	1	SW	0	2	2	2	0	0
28/03/2012	1	KDS	0905	1650	2	1	SW	0	1	2	2	0	0
28/03/2012	1	KDS	0905	1650	3	2	SW	0	1	2	2	0	0
28/03/2012	1	KDS	0905	1650	4	2	SW	0	1	2	2	0	0
28/03/2012	1	KDS	0905	1650	5	2	SW	0	2	2	2	0	0
28/03/2012	1	KDS	0905	1650	6	3	SW	0	2	2	2	0	0
28/03/2012	1	KDS	0905	1650	7	3	SW	0	2	2	2	0	0
28/03/2012	1	KDS	0905	1650	8	4	SW	0	3	2	2	0	0
17/04/2012	2	PC	0845	1145	1	4	NW	0	7	2	2	0	0
17/04/2012	2	PC	0845	1145	2	4	NW	0	7	2	2	0	0
17/04/2012	2	PC	0845	1145	3	4	NW	0	7	2	2	0	0
31/05/2012	3	KDS	1045	1640	1	1	SE	2	8	2	2	0	0
31/05/2012	3	KDS	1045	1640	2	1	SE	2	8	2	2	0	0
31/05/2012	3	KDS	1045	1640	3	1	SE	2	8	2	2	0	0
31/05/2012	3	KDS	1045	1640	4	1	SE	2	8	2	2	0	0
31/05/2012	3	KDS	1045	1640	5	1	SE	1	8	2	2	0	0
31/05/2012	3	KDS	1045	1640	6	1	SE	0	8	2	2	0	0
31/05/2012	3	KDS	1045	1640	7	1	SE	0	8	2	2	0	0
15/06/2012	4	KDS	0840	1440	1	2	E	0	6	2	2	0	0
15/06/2012	4	KDS	0840	1440	2	3	E	2	7	2	2	0	0
15/06/2012	4	KDS	0840	1440	3	3	E	3	8	2	2	0	0
15/06/2012	4	KDS	0840	1440	4	4	E	3	8	2	1	0	0
15/06/2012	4	KDS	0840	1440	5	4	E	4	8	1	1	0	0
15/06/2012	4	KDS	0840	1440	6	5	E	4	8	1	1	0	0
18/06/2012	4	KDS	0930	1550	1	2	E	0	4	2	2	0	0
18/06/2012	4	KDS	0930	1550	2	2	E	0	3	2	2	0	0
18/06/2012	4	KDS	0930	1550	3	2	E	0	2	2	2	0	0
18/06/2012	4	KDS	0930	1550	4	2	E	0	3	2	2	0	0
18/06/2012	4	KDS	0930	1550	5	2	E	0	4	2	2	0	0

Date	Survey visit	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
18/06/2012	4	KDS	0930	1550	6	3	E	0	5	2	2	0	0
18/06/2012	4	KDS	0930	1550	7	3	E	0	5	2	2	0	0
19/07/2012	5	KDS	1110	1750	1	2	NW	0	7	2	2	0	0
19/07/2012	5	KDS	1110	1750	2	2	NW	0	7	2	2	0	0
19/07/2012	5	KDS	1110	1750	3	2	NW	0	7	2	2	0	0
19/07/2012	5	KDS	1110	1750	4	2	NW	0	6	2	2	0	0
19/07/2012	5	KDS	1110	1750	5	2	NW	0	6	2	2	0	0
19/07/2012	5	KDS	1110	1750	6	2	NW	0	7	2	2	0	0
19/07/2012	5	KDS	1110	1750	7	2	NW	0	6	2	2	0	0
20/07/2012	5	KDS	0850	1615	1	1	0	0	5	2	2	0	0
20/07/2012	5	KDS	0850	1615	2	1	0	0	6	2	2	0	0
20/07/2012	5	KDS	0850	1615	3	1	0	0	5	2	2	0	0
20/07/2012	5	KDS	0850	1615	4	1	0	0	5	2	2	0	0
20/07/2012	5	KDS	0850	1615	5	1	0	0	4	2	2	0	0
20/07/2012	5	KDS	0850	1615	6	1	0	0	5	2	2	0	0
20/07/2012	5	KDS	0850	1615	7	1	0	0	5	2	2	0	0
20/07/2012	5	KDS	0850	1615	8	1	0	0	4	2	2	0	0
27/03/2013	6	SS	0950	1330	1	6	E	2	8	1	1	2	1
27/03/2013	6	SS	0950	1330	2	6	E	3	8	1	1	2	1
27/03/2013	6	SS	0950	1330	3	6	E	0	8	2	2	2	1
27/03/2013	6	SS	0950	1330	4	6	E	1	8	2	2	2	1
16/05/2013	7	KDS	1055	1802	1	1	SW	0	5	2	2	0	0
16/05/2013	7	KDS	1055	1802	2	1	SW	0	5	2	2	0	0
16/05/2013	7	KDS	1055	1802	3	1	SE	0	6	2	2	0	0
16/05/2013	7	KDS	1055	1802	4	1	SE	0	7	2	2	0	0
16/05/2013	7	KDS	1055	1802	5	1	SE	3	7	2	2	0	0
16/05/2013	7	KDS	1055	1802	6	1	SE	0	7	2	2	0	0
16/05/2013	7	KDS	1055	1802	7	1	S	0-4	8	1	1	0	0
17/05/2013	7	KDS	0600	0815	1	1	NE	0	8	2	2	0	0
17/05/2013	7	KDS	0600	0815	2	1	NE	0	8	2	2	0	0
17/05/2013	7	KDS	0900	1505	1	2	NE	0	5	2	2	0	0
17/05/2013	7	KDS	0900	1505	2	2	NE	0	4	2	2	0	0
17/05/2013	7	KDS	0900	1505	3	2	NE	0	4	2	2	0	0
17/05/2013	7	KDS	0900	1505	4	2	NE	0	3	2	2	0	0
17/05/2013	7	KDS	0900	1505	5	2	NE	0	2	2	2	0	0
17/05/2013	7	KDS	0900	1505	6	1	E	0	2	2	2	0	0
13/06/2013	8	KDS	1040	1800	1	2	SW	0	3	2	2	0	0
13/06/2013	8	KDS	1040	1800	2	2	SW	0	3	2	2	0	0
13/06/2013	8	KDS	1040	1800	3	2	SW	0	3	2	2	0	0
13/06/2013	8	KDS	1040	1800	4	2	SW	0	4	2	2	0	0
13/06/2013	8	KDS	1040	1800	5	3	SW	0	5	2	2	0	0
13/06/2013	8	KDS	1040	1800	6	2	SW	0	6	2	2	0	0

Date	Survey visit	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
13/06/2013	8	KDS	1040	1800	7	2	SW	0	5	2	2	0	0
13/06/2013	8	KDS	1040	1800	8	2	SW	0	5	2	2	0	0
14/06/2013	8	KDS	0905	1645	1	2	SW	0	2	2	2	0	0
14/06/2013	8	KDS	0905	1645	2	2	SW	0	3	2	2	0	0
14/06/2013	8	KDS	0905	1645	3	2	SW	0	4	2	2	0	0
14/06/2013	8	KDS	0905	1645	4	3	SW	0	4	2	2	0	0
14/06/2013	8	KDS	0905	1645	5	3	SW	0	5	2	2	0	0
14/06/2013	8	KDS	0905	1645	6	3	SW	2	7	2	2	0	0
14/06/2013	8	KDS	0905	1645	7	4	SW	3	8	2	2	0	0
14/06/2013	8	KDS	0905	1645	8	4	SW	3	8	1	1	0	0
26/07/2013	9	KDS	1140	1850	1	3	SE	0	3	2	2	0	0
26/07/2013	9	KDS	1140	1850	2	3	SE	0	3	2	2	0	0
26/07/2013	9	KDS	1140	1850	3	4	SE	0	4	2	2	0	0
26/07/2013	9	KDS	1140	1850	4	4	SE	0	4	2	2	0	0
26/07/2013	9	KDS	1140	1850	5	4	SE	0	4	2	2	0	0
26/07/2013	9	KDS	1140	1850	6	3	SE	0	5	2	2	0	0
26/07/2013	9	KDS	1140	1850	7	3	SE	0	5	2	2	0	0
27/07/2013	9	KDS	0400	1600	1	1	SE	0	0	2	2	0	0
27/07/2013	9	KDS	0400	1600	2	1	SE	0	0	2	2	0	0
27/07/2013	9	KDS	0400	1600	3	1	SE	0	1	2	2	0	0
27/07/2013	9	KDS	0400	1600	4	2	SE	0	3	2	2	0	0
27/07/2013	9	KDS	0400	1600	3	1	SE	0	1	2	2	0	0
27/07/2013	9	KDS	0400	1600	4	2	SE	0	3	2	2	0	0
27/07/2013	9	KDS	0400	1600	5	2	SE	0	5	2	2	0	0
27/07/2013	9	KDS	0400	1600	6	2	SE	0	7	2	2	0	0
27/07/2013	9	KDS	0400	1600	7	1	SE	0	5	2	2	0	0
27/07/2013	9	KDS	0400	1600	8	2	SE	0	4	2	2	0	0
27/07/2013	9	KDS	0400	1600	9	1	SE	0	5	2	2	0	0
27/07/2013	9	KDS	0400	1600	10	1	SE	0	6	2	2	0	0
27/07/2013	9	KDS	0400	1600	11	2	SE	2	5	2	2	0	0
27/07/2013	9	KDS	0400	1600	12	2	SE	3	8	2	2	0	0
21/04/2015	10	AWT	0850	1645	1	1	NW	0	0	2	2	0	0
21/04/2015	10	AWT	0850	1645	2	2	NE	0	0	2	2	0	0
21/04/2015	10	AWT	0850	1645	3	2	NE	0	0	0	2	0	0
21/04/2015	10	AWT	0850	1645	4	2	NE	0	0	0	2	0	0
21/04/2015	10	AWT	0850	1645	5	3	NE	0	0	0	2	0	0
21/04/2015	10	AWT	0850	1645	6	2	NE	0	0	0	2	0	0
21/04/2015	10	AWT	0850	1645	7	2	NE	0	0	0	2	0	0
21/04/2015	10	AWT	0850	1645	8	2	NE	0	0	0	2	0	0
16/05/2015	11	AWT	0850	1700	1	4	NW	0	7	2	2	0	0
16/05/2015	11	AWT	0850	1700	2	4	NW	0	7	2	2	0	0
16/05/2015	11	AWT	0850	1700	3	5	W	0	6	2	2	0	0
16/05/2015	11	AWT	0850	1700	4	5	W	0	6	2	2	0	0
16/05/2015	11	AWT	0850	1700	5	5	W	0	6	2	2	0	0

Date	Survey visit	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
16/05/2015	11	AWT	0850	1700	6	5	W	0	5	2	2	0	0
16/05/2015	11	AWT	0850	1700	7	5	W	0	5	2	2	0	0
16/05/2015	11	AWT	0850	1700	8	5	W	0	5	2	2	0	0
29/05/2015	11	AWT	0805	1700	1	2	W	1	8	1	2	0	0
29/05/2015	11	AWT	0805	1700	2	2	W	0	7	2	2	0	0
29/05/2015	11	AWT	0805	1700	3	2	W	0	6	2	2	0	0
29/05/2015	11	AWT	0805	1700	4	2	W	0	6	2	2	0	0
29/05/2015	11	AWT	0805	1700	5	2	W	0	6	2	2	0	0
29/05/2015	11	AWT	0805	1700	6	2	W	2	6	2	2	0	0
29/05/2015	11	AWT	0805	1700	7	2	W	3	6	2	2	0	0
29/05/2015	11	AWT	0805	1700	8	2	W	3	7	2	2	0	0
29/05/2015	11	AWT	0805	1700	9	2	W	2	6	2	2	0	0
15/06/2015	12	AWT	0815	1600	1	1	W	0	5	2	2	0	0
15/06/2015	12	AWT	0815	1600	2	2	W	0	7	2	2	0	0
15/06/2015	12	AWT	0815	1600	3	2	W	0	8	2	2	0	0
15/06/2015	12	AWT	0815	1600	4	2	W	0	8	2	2	0	0
15/06/2015	12	AWT	0815	1600	5	2	W	0	8	2	2	0	0
15/06/2015	12	AWT	0815	1600	6	2	W	0	8	2	2	0	0
27/06/2015	12	AWT	0815	1600	1	3	SW	0	6	2	2	0	0
27/06/2015	12	AWT	0815	1600	2	3	SW	0	7	2	2	0	0
27/06/2015	12	AWT	0815	1600	3	3	SW	0	7	2	2	0	0
27/06/2015	12	AWT	0815	1600	4	4	SW	0	6	2	2	0	0
27/06/2015	12	AWT	0815	1600	5	3	SW	0	6	2	2	0	0
27/06/2015	12	AWT	0815	1600	6	3	SW	1	7	2	2	0	0
05/07/2015	13	AWT	0830	1630	1	2	SW	0	5	2	2	0	0
05/07/2015	13	AWT	0830	1630	2	2	SW	0	5	2	2	0	0
05/07/2015	13	AWT	0830	1630	3	2	SW	0	7	2	2	0	0
05/07/2015	13	AWT	0830	1630	4	3	SW	0	7	2	2	0	0
05/07/2015	13	AWT	0830	1630	5	3	SW	0	8	2	2	0	0
05/07/2015	13	AWT	0830	1630	6	3	SW	0	7	2	2	0	0
23/07/2015	13	AWT	0900	1645	1	3	SW	0	4	2	2	0	0
23/07/2015	13	AWT	0900	1645	2	4	SW	0	6	2	2	0	0
23/07/2015	13	AWT	0900	1645	3	4	SW	0	7	2	2	0	0
23/07/2015	13	AWT	0900	1645	4	4	SW	0	7	2	2	0	0
23/07/2015	13	AWT	0900	1645	5	4	SW	0	7	2	2	0	0
23/07/2015	13	AWT	0900	1645	6	4	SW	0	7	2	2	0	0
23/07/2015	13	AWT	0900	1645	7	4	SW	0	7	2	2	0	0
16/03/2021	1	MW	0700	1300	1	3	NNW	0	4	2	2	0	0
16/03/2021	1	MW	0700	1300	2	3	NNW	0	4	2	2	0	0
16/03/2021	1	MW	0700	1300	3	4	NNW	0	3	2	2	0	0
16/03/2021	1	MW	0700	1300	4	4	NNW	0	3	2	2	0	0
16/03/2021	1	MW	0700	1300	5	5	NNW	0	3	2	2	0	0

Date	Survey visit	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
16/03/2021	1	MW	0700	1300	6	6	NNW	0	3	2	2	0	0
17/03/2021	1	MW	0700	1300	1	2	NNW	0	8	2	2	0	0
17/03/2021	1	MW	0700	1300	2	3	NNW	0	6	2	2	0	0
17/03/2021	1	MW	0700	1300	3	4	NNW	0	6	2	2	0	0
17/03/2021	1	MW	0700	1300	4	5	NNW	0	5	2	2	0	0
17/03/2021	1	MW	0700	1300	5	5	NNW	0	4	2	2	0	0
17/03/2021	1	MW	0700	1300	6	5	NNW	0	4	2	2	0	0
13/04/2021	2	MW	0800	1100	1	3	WNW	0	3	2	2	0	0
13/04/2021	2	MW	0800	1100	2	3	WNW	0	4	2	2	0	0
13/04/2021	2	MW	0800	1100	3	3	WNW	0	6	2	2	0	0
14/04/2021	2	MW	0700	1300	1	1	NE	0	1	2	2	1	0
14/04/2021	2	MW	0700	1300	2	2	NE	0	2	2	2	1	0
14/04/2021	2	MW	0700	1300	3	3	NE	0	3	2	2	0	0
14/04/2021	2	MW	0700	1300	4	3	NE	0	4	2	2	0	0
14/04/2021	2	MW	0700	1300	5	3	NE	0	4	2	2	0	0
14/04/2021	2	MW	0700	1300	6	4	NE	0	4	2	2	0	0
15/04/2021	2	MW	0645	1245	1	1	NE	0	1	2	2	1	0
15/04/2021	2	MW	0645	1245	2	1	NE	0	1	2	2	1	0
15/04/2021	2	MW	0645	1245	3	2	NNE	0	1	2	2	0	0
15/04/2021	2	MW	0645	1245	4	3	NNE	0	1	2	2	0	0
15/04/2021	2	MW	0645	1245	5	3	NNE	0	2	2	2	0	0
15/04/2021	2	MW	0645	1245	6	3	NNE	0	2	2	2	0	0
16/04/2021	2	MW	0540	1140	1	1	NNE	0	0	2	2	1	0
16/04/2021	2	MW	0540	1140	2	1	NNE	0	1	2	2	1	0
16/04/2021	2	MW	0540	1140	3	1	NNE	0	1	2	2	0	0
16/04/2021	2	MW	0540	1140	4	2	NNE	0	1	2	2	0	0
16/04/2021	2	MW	0540	1140	5	2	NNE	0	1	2	2	0	0
16/04/2021	2	MW	0540	1140	6	2	NNE	0	1	2	2	0	0
03/05/2021	3	MW	0700	1300	1	3	SSE	0	8	2	2	0	0
03/05/2021	3	MW	0700	1300	2	4	SSE	0	8	2	2	0	0
03/05/2021	3	MW	0700	1300	3	5	SSE	0	8	2	2	0	0
03/05/2021	3	MW	0700	1300	4	5	SSE	4	8	2	2	0	0
03/05/2021	3	MW	0700	1300	5	5	SSE	4	8	2	2	0	0
03/05/2021	3	MW	0700	1300	6	5	SSE	4	8	2	2	0	0
04/05/2021	3	MW	0700	1300	1	5	NW	4	8	2	2	0	0
04/05/2021	3	MW	0700	1300	2	5	NW	4	8	2	2	0	0
04/05/2021	3	MW	0700	1300	3	5	NW	4	8	2	2	0	0
04/05/2021	3	MW	0700	1300	4	5	NW	4	8	2	2	0	0
04/05/2021	3	MW	0700	1300	5	5	NW	3	8	2	2	0	0
04/05/2021	3	MW	0700	1300	6	5	NW	3	8	2	2	0	0
05/05/2021	3	MW	0700	1300	1	5	NW	0	7	2	2	1	0
05/05/2021	3	MW	0700	1300	2	5	NW	0	6	2	2	0	0

Date	Survey visit	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
05/05/2021	3	MW	0700	1300	3	6	NW	0	5	2	2	0	0
05/05/2021	3	MW	0700	1300	4	6	NW	0	6	2	2	0	0
05/05/2021	3	MW	0700	1300	5	6	NW	0	6	2	2	0	0
05/05/2021	3	MW	0700	1300	6	6	NW	0	6	2	2	0	0
01/06/2021	4	MW	0730	1330	1	4	SSE	0	1	2	2	0	0
01/06/2021	4	MW	0730	1330	2	4	SSE	0	1	2	2	0	0
01/06/2021	4	MW	0730	1330	3	5	S	0	2	2	2	0	0
01/06/2021	4	MW	0730	1330	4	5	S	0	3	2	2	0	0
01/06/2021	4	MW	0730	1330	5	5	S	0	3	2	2	0	0
01/06/2021	4	MW	0730	1330	6	5	S	0	4	2	2	0	0
02/06/2021	4	MW	0630	1200	1	5	NE	0	1	2	2	0	0
02/06/2021	4	MW	0630	1200	2	5	NE	0	2	2	2	0	0
02/06/2021	4	MW	0630	1200	3	5	NE	0	3	2	2	0	0
02/06/2021	4	MW	0630	1200	4	6	NE	0	3	2	2	0	0
02/06/2021	4	MW	0630	1200	5	6	NE	0	3	2	2	0	0
02/06/2021	4	MW	0630	1200	6	6	NE	0	3	2	2	0	0
03/06/2021	4	MW	0600	1200	1	5	NE	0	8	2	2	0	0
03/06/2021	4	MW	0600	1200	2	5	NE	0	8	2	2	0	0
03/06/2021	4	MW	0600	1200	3	5	NE	0	8	2	2	0	0
03/06/2021	4	MW	0600	1200	4	6	ENE	0	7	2	2	0	0
03/06/2021	4	MW	0600	1200	5	6	ENE	0	7	2	2	0	0
03/06/2021	4	MW	0600	1200	6	6	ENE	0	7	2	2	0	0
07/07/2021	5	MW	0600	1200	1	4	SW	0	8	2	2	0	0
07/07/2021	5	MW	0600	1200	2	4	SW	0	7	2	2	0	0
07/07/2021	5	MW	0600	1200	3	5	SW	0	7	2	2	0	0
07/07/2021	5	MW	0600	1200	4	5	SW	0	7	2	2	0	0
07/07/2021	5	MW	0600	1200	5	5	SW	0	6	2	2	0	0
07/07/2021	5	MW	0600	1200	6	5	SW	0	6	2	2	0	0
08/07/2021	5	MW	0600	1200	1	1	WSW	0	7	2	2	0	0
08/07/2021	5	MW	0600	1200	2	2	WSW	0	7	2	2	0	0
08/07/2021	5	MW	0600	1200	3	1	WSW	0	6	2	2	0	0
08/07/2021	5	MW	0600	1200	4	2	WSW	0	6	2	2	0	0
08/07/2021	5	MW	0600	1200	5	3	WSW	0	7	2	2	0	0
08/07/2021	5	MW	0600	1200	6	3	WSW	0	6	2	2	0	0
03/08/2021	6	MW	0600	1200	1	1	SW	0	4	2	2	0	0
03/08/2021	6	MW	0600	1200	2	2	SW	0	4	2	2	0	0
03/08/2021	6	MW	0600	1200	3	3	SW	0	3	2	2	0	0
03/08/2021	6	MW	0600	1200	4	4	SW	0	3	2	2	0	0
03/08/2021	6	MW	0600	1200	5	4	SW	0	4	2	2	0	0
03/08/2021	6	MW	0600	1200	6	4	SW	0	6	2	2	0	0
04/08/2021	6	MW	0630	1230	1	3	SW	0	3	2	2	0	0
04/08/2021	6	MW	0630	1230	2	3	SW	0	2	2	2	0	0

Date	Survey visit	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
04/08/2021	6	MW	0630	1230	3	4	SW	0	2	2	2	0	0
04/08/2021	6	MW	0630	1230	4	4	SW	0	2	2	2	0	0
04/08/2021	6	MW	0630	1230	5	4	SW	0	3	2	2	0	0
04/08/2021	6	MW	0630	1230	6	4	SW	0	3	2	2	0	0

C.5 Black Grouse Surveys

Black grouse surveys were undertaken during the 2012, 2013 and 2021 breeding seasons. **Table C-7** details survey dates and weather data recorded. Refer to **Annex B** for survey methodology and **Annex D** for survey results.

Table C-7: Meteorological Conditions During Black Grouse Surveys at the Proposed Development (sorted chronologically)

Date	Survey visit	Observer	Survey Start Time	Survey Finish Time	Survey Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Visibility	Frost	Snow
19/04/2012	1	ARC	0505	1000	1	1	SW	0	8	2	2	0	0
19/04/2012	1	ARC	0505	1000	2	1	SW	0	8	2	2	0	0
19/04/2012	1	ARC	0505	1000	3	1	SW	0	7	2	2	0	0
19/04/2012	1	ARC	0505	1000	4	1	SW	0	6	2	2	0	0
11/05/2012	2	ARC	0425	0845	1	1	NE	1	8	2	1	0	0
11/05/2012	2	ARC	0425	0845	2	1	NE	2	8	2	1	0	0
11/05/2012	2	ARC	0425	0845	3	1	NE	2	8	2	1	0	0
11/05/2012	2	ARC	0425	0845	4	1	NE	2	8	2	1	0	0
23/04/2013	3	RC	0500	0700	1	6	SW	0	8	2	1	0	0
23/04/2013	3	RC	0500	0700	2	4	SW	0	7	2	1	0	0
23/04/2013	3	PR	0500	0700	1	6	SW	0	8	2	1	0	0
23/04/2013	3	PR	0500	0700	2	4	SW	0	7	2	1	0	0
23/05/2013	4	RS	0415	0730	1	2	N	0	8	2	2	0	0
23/05/2013	4	RS	0415	0730	2	2	N	1	8	2	2	0	0
23/05/2013	4	RS	0415	0730	3	2	N	0	7	2	2	0	0
23/05/2013	4	CS	0415	0730	1	2	N	0	8	2	2	0	0
23/05/2013	4	CS	0415	0730	2	2	N	1	8	2	2	0	0
23/05/2013	4	CS	0415	0730	3	2	N	0	7	2	2	0	0
13/04/2021	1	MW	0500	0800	1	1	WNW	0	1	2	2	1	0
13/04/2021	1	MW	0500	0800	2	2	WNW	0	2	2	2	1	0
13/04/2021	1	MW	0500	0800	3	3	WNW	0	3	2	2	1	0
06/05/2021	2	MW	0400	0700	1	3	N	0	3	2	2	1	1
06/05/2021	2	MW	0400	0700	2	3	N	0	5	2	2	1	1
06/05/2021	2	MW	0400	0700	3	3	N	0	8	2	2	1	1
07/05/2021	2	MW	0400	0700	1	2	WNW	0	5	2	2	1	0
07/05/2021	2	MW	0400	0700	2	2	WNW	0	5	2	2	0	0
07/05/2021	2	MW	0400	0700	3	2	WNW	0	7	2	2	0	0

ANNEX D. ORNITHOLOGICAL SURVEY RESULTS

D.1 Flight Activity Records: Target Species

In accordance with NatureScot Guidance (2017), target species are those which may be considered to be at risk from the potential effects of wind farms. All flights of target species within the turbine area and the surrounding area were mapped and are detailed in **Table D-1** and **Table D-2.**

Table D-1: Details of Target Species Recorded During Flight Activity Surveys (sorted by species) 2011-2013

Date	VP	Flight Start Time	Species	No. of Birds	Duration (s)	Seconds per Height Band		
						0-20 m	21-125 m	>126 m
28/09/2011	2	0650	Peregrine falcon	1	65		65	
28/09/2011	3	0911	Peregrine falcon	1	20		20	
28/09/2011	3	1020	Peregrine falcon	2	25		25	
28/09/2011	3	1021	Peregrine falcon	1	18		18	
19/10/2011	2	1002	Pink footed goose	20	30		30	
19/10/2011	2	1056	Golden plover	200	45			45
19/10/2011	2	1139	Peregrine falcon	1	5		5	
01/12/2011	1	1055	Goshawk	1	15		15	
01/12/2011	1	1151	Merlin	1	5		5	
05/02/2012	1	1244	Goshawk	1	30	30		
05/02/2012	1	1301	Goshawk	1	15	15		
05/02/2012	1	1558	Goshawk	1	15		15	
06/02/2012	3	1437	Goshawk	1	75	15	60	
06/02/2012	3	1553	Goshawk	1	30		30	
07/02/2012	2	0938	Pink footed goose	85	135			135
07/02/2012	2	1250	Golden plover	1	45			45
07/02/2012	2	1257	Golden plover	7	45	15	25	5
09/03/2012	1	1223	Goshawk	1	60	30	30	
09/03/2012	1	1347	Goshawk	1	90	30	60	
09/03/2012	4	1157	Goshawk	1	60		60	
22/03/2012	1	1118	Curlew	1	10	10		
22/03/2012	2	1437	Curlew	1	25	15	10	
04/04/2012	3	1456	Hen harrier	1	150	150		
04/04/2012	3	1521	Goshawk	1	25	25		
05/04/2012	1	1413	Goshawk	1	145	145		
05/04/2012	1	1421	Goshawk	1	75		75	
05/04/2012	1	1516	Peregrine falcon	1	30		30	
05/04/2012	2	1156	Curlew	1	20	20		
05/04/2012	2	1523	Curlew	1	15	15		
15/05/2012	2	0914	Goshawk	1	20		20	
15/05/2012	3	0908	Goshawk	1	120	45	75	
25/06/2012	2	1714	Peregrine falcon	1	30		30	
25/07/2012	2	1245	Goshawk	1	30		30	
26/07/2012	3	1531	Goshawk	1	29		29	
23/08/2012	3	0728	Goshawk	1	60		60	

Date	VP	Flight Start Time	Species	No. of Birds	Duration (s)	Seconds per Height Band		
						0-20 m	21-125 m	>126 m
22/05/2013	7	1509	Curlew	1	13	13		
22/05/2013	7	2052	Curlew	1	10	10		
30/05/2013	7	0743	Curlew	1	20	20		
30/05/2013	7	0750	Curlew	2	100	40	60	
30/05/2013	7	1017	Red kite	1	20	5	15	
30/05/2013	7	1133	Red kite	1	180	30	150	
06/06/2013	7	1304	Curlew	2	10	10		

Table D-2: Details of Target Species Recorded During Flight Activity Surveys (sorted by species) 2020-2021

Date	VP	Flight Start Time	Species	No. of Birds	Duration (s)	Seconds per Height Band				
						0-20 m	21-40 m	41-100 m	101-150 m	>150 m
20/10/2020	11	1120	Goshawk	1	75	15	60			
23/02/2021	11	0940	Goshawk	1	35	35				
23/02/2021	11	1211	Golden plover	3	24		24			
24/02/2021	10	0933	Goshawk	1	20	20				
12/03/2021	11	0800	Goshawk	1	45	45				
12/03/2021	11	1040	Goshawk	2	120		105	15		
12/03/2021	11	1110	Goshawk	1	60	60				
18/03/2021	11	1158	Goshawk	1	45	45				
19/04/2021	11	0838	Snipe	1	5	5				
19/04/2021	11	0901	Snipe	1	22	22				
19/04/2021	11	1044	Lapwing	4	60		15	45		
19/04/2021	11	1051	Golden plover	38	35	35				
10/05/2021	11	0708	Peregrine falcon	1	35	35				
10/05/2021	11	0950	Merlin	1	30	30				
04/06/2021	10	0630	Goshawk	1	90	15	75			
04/06/2021	10	0900	Goshawk	1	95	20	75			
04/06/2021	10	1036	Goshawk	1	50	20	30			
07/06/2021	11	1014	Peregrine falcon	1	90		30	30	15	15
05/07/2021	10	0950	Snipe	1	60	15	45			
05/07/2021	10	1040	Goshawk	1	25	25				

D.2 Flight Activity Records: Secondary Species

Table D-3 and **Table D-4** detail secondary species recorded during flight activity surveys. Secondary species were recorded to give an indication of the use of the site by these species. Refer to **Annex B** for survey methodology and **Annex C** for weather data.

Table D-3: Summary of Secondary Species Recorded During Flight Activity Surveys 2011-2013

Species	Number of Records	Total Number of Birds
Black-headed gull	2	6
Buzzard	316	402
Canada goose	2	90
Great black-backed gull	1	1
Grey heron	5	5
Greylag goose	2	44
Herring gull	2	4
Kestrel	44	45
Lesser black-backed gull	11	107
Mallard	2	4
Raven	83	124
Snipe	2	2
Sparrowhawk	9	9

Table D-4: Summary of Secondary Species Recorded During Flight Activity Surveys 2020-2021

Species	Number of Records	Total Number of Birds
Buzzard	12	6
Kestrel	3	2
Raven	21	14
Snipe	1	1
Sparrowhawk	2	2

D.3 Winter Walkover Records

Table D-5, Table D-6, Table D-7 and **Table D-8** detail all the species recorded. Refer to **Annex B** for survey methodology and **Annex C** for weather data.

Table D-5: Winter Walkover Survey Records: 2011/2012 Non-Breeding Season

Visit 1 Species	Visit 1 Number of Birds	Visit 2 Species	Visit 2 Number of Birds	Visit 3 Species	Visit 3 Number of Birds
Blackbird	2	Blackbird	1	Blue tit	3
Blue tit	8	Blue tit	13	Buzzard	3
Buzzard	3	Bullfinch	2	Carrion crow	7
Carrion crow	11	Buzzard	3	Chaffinch	15
Chaffinch	37	Carrion crow	19	Coal tit	14
Coal tit	8	Chaffinch	63	Common crossbill	24
Common crossbill	68	Coal tit	23	Dunnock	1

Table D-6: Winter Walkover Survey Records: 2012/2013 Non-Breeding Season

Visit 1 Species	Visit 1 Number of Birds	Visit 2 Species	Visit 2 Number of Birds	Visit 3 Species	Visit 3 Number of Birds
Dunnock	1	Common crossbill	48	Fieldfare	14
Fieldfare	164	Dunnock	2	Goldcrest	1
Great spotted woodpecker	1	Fieldfare	28	Goldfinch	10
Great tit	1	Goldcrest	1	Goshawk	1
House sparrow	12	Goshawk	1	Jackdaw	27
Jackdaw	25	Great tit	3	Mallard	4
Jay	2	Lesser redpoll	7	Mistle thrush	2
Lapwing	1	Linnet	2	Raven	1
Linnet	4	Meadow pipit	1	Rook	51
Long-tailed tit	2	Mistle thrush	1	Siskin	5
Raven	3	Pheasant	1	Starling	95
Robin	6	Raven	2	Woodpigeon	2
Rook	36	Robin	3		
Siskin	1	Rook	220		
Snipe	2	Siskin	6		
Twite	12	Starling	35		
Woodpigeon	1	Wren	5		
Wren	2				

Table D-7 Winter Walkover Survey Records: 2013/2014 Non-Breeding Season

Visit 1 Species	Visit 1 Number of Birds	Visit 2 Species	Visit 2 Number of Birds	Visit 3 Species	Visit 3 Number of Birds
Buzzard	4	Buzzard	12	Buzzard	17
Kestrel	1	Carrion crow	33	Carrion crow	34
Raven	2	Fieldfare	30	Coal tit	1
		Raven	3	Grey wagtail	1
		Snipe	2	Jay	2
		Sparrowhawk	1	Mistle thrush	2
		Woodcock	1	Peregrine falcon	1
				Raven	1
				Rook	46
				Skylark	1
				Song thrush	1
				Sparrowhawk	1
				Wheatear	1
				Woodpigeon	30
				Wren	2

Visit 1 Species	Visit 1 Number of Birds	Visit 2 Species	Visit 2 Number of Birds
Carrion crow	8	Coal tit	2
Fieldfare	50	Fieldfare	1
Golden plover	42	Meadow pipit	6
Great spotted woodpecker	1	Rook	5
Kestrel	1	Snipe	10
Mistle thrush	1	Starling	5
Redwing	1	Woodpigeon	4
Robin	1	Wren	1
Rook	73		
Snipe	2		
Sparrowhawk	1		
Woodcock	1		
Woodpigeon	1		

Table D-8: Winter Walkover Survey Records: 2020/2021 Non-Breeding Season

Visit 1 Species	Visit 1 Number of Birds	Visit 2 Species	Visit 2 Number of Birds	Visit 3 Species	Visit 3 Number of Birds
Bullfinch	8	Buzzard	1	Blackbird	1
Carrion crow	1	Coal tit	1	Bullfinch	4
Chaffinch	1	Common crossbill	15	Buzzard	6
Coal tit	1	Goldcrest	1	Carrion crow	1
Dunnock	1	Lesser redpoll	40	Fieldfare	170
Fieldfare	10	Reed bunting	4	Goldcrest	1
Green woodpecker	1	Siskin	20	Goshawk	2
Lesser redpoll	1	Snipe	1	Great spotted woodpecker	8
Meadow pipit	15	Stonechat	4	Green woodpecker	1
Mistle thrush	1	Woodcock	3	Lesser redpoll	20
Raven	1	Woodpigeon	1	Meadow pipit	1
Redwing	8			Mistle thrush	1
Reed bunting	4			Peregrine falcon	1
Robin	1			Raven	1
Song thrush	1			Reed bunting	4
Woodcock	1			Robin	1
Woodpigeon	1			Siskin	10
Wren	1			Skylark	4
				Stonechat	1
				Wren	1

D.4 Scarce Breeding Bird Records

Table D-9 details all records of raptors and owls recorded during surveys, however only Annex 1[1] or Schedule 1[2] species are considered to be scarce breeding birds (i.e., target species). Refer to **Annex B** for survey methodology, **Annex C** for weather data and **Confidential Technical Appendix 9.2** for confidential data relating to goshawk and peregrine falcon.

Table D-9: Raptor and Owl Records: 2012, 2013, 2015 and 2021 Breeding Seasons

Date	Species	Number Recorded	Sex	Age	Nest ID	Notes
15/03/2012	Buzzard	6	-	-	-	spread across site
15/03/2012	Goshawk	1	Male	Adult	GI_1	13:21, flying at height band 2 for 17 seconds
27/03/2012	Buzzard	12	-	-	-	spread across site
27/03/2012	Goshawk	1	Male	Adult	-	1st year
27/03/2012	Goshawk	1	Male	Adult	GI_1	brief interaction with 1st year male
28/03/2012	Goshawk	1	Male	Adult	GI_1	
28/03/2012	Goshawk	1	Male	Adult	GI_1	displaying
28/03/2012	Goshawk	1	Male	Adult	-	different male displaying - very high, lost in clouds
17/04/2012	Buzzard	2	-	-	-	hunting
17/04/2012	Goshawk	1	Male	Adult	GI_1	full display for 4 minutes
17/04/2012	Goshawk	1	Male	Adult	-	second male in full display for 4 minutes
17/04/2012	Goshawk	1	Male	Adult	GI_1	carrying large prey, flew into trees near nest, likely carrying prey to female on nest
17/04/2012	Goshawk	1	-	Adult	GI_1	
17/04/2012	Sparrowhawk	1	Female	Adult		
31/05/2012	Buzzard	8	-	-	-	spread across site
31/05/2012	Goshawk	1	-	Adult	GI_1	
31/05/2012	Peregrine falcon	1	-	Adult	-	flying around for 7 minutes and interacting with buzzards/hunting
15/06/2012	Buzzard	8	-	-	-	spread across site
15/06/2012	Goshawk	1	-	Adult	GI_1	pair present at nest
15/06/2012	Goshawk	1	-	Adult	GI_3	pair present at nest
15/06/2012	Peregrine falcon	1	-	Adult	PE_1	present at nest site
15/06/2012	Sparrowhawk	1	-	Adult		
19/07/2012	Buzzard	8	-	-	-	spread across site, 5 pairs have young
19/07/2012	Goshawk	1	-	Juvenile	GI_1	juvenile in trees
19/07/2012	Goshawk	1	-	Adult	GI_1	pair present at nest
19/07/2012	Goshawk	1	-	Adult	GI_3	pair present at nest
19/07/2012	Goshawk	1	Male	Adult	GI_1	circling high
19/07/2012	Goshawk	1	Male	Adult	-	circling
19/07/2012	Kestrel	1	Male	Adult	-	hunting over clearfell on site
19/07/2012	Long-eared owl	2	-	Juvenile	-	minimum 2 juveniles located
27/03/2013	Buzzard	1	-	-	-	
27/03/2013	Buzzard	1	-	-	-	
27/03/2013	Peregrine falcon	1	Male	Adult	PE_1	peregrine falcon arrived from south west and perched ~20m higher up from nest face on a ledge also covered by whitewash. Gorse partially obscuring view of whole

[1] Annex 1 of the EU Bird Directive

[2] Schedule 1 of the Wildlife and Countryside Act 1981, as amended by the Nature Conservation Act (Scotland) 2004

Date	Species	Number Recorded	Sex	Age	Nest ID	Notes
						ledge, seems to be a well used perch, sat there for 18 minutes
27/03/2013	Peregrine falcon	1	Male	Adult	PE_1	same peregrine falcon flew off headed north west
27/03/2013	Peregrine falcon	1	Male/female	Adult	PE_1	male and female flying around and then landed in nest site area. Male went back to previous perch. Female perched just above potential nest site
16/05/2013	Buzzard	11	-	-	-	spread across site
16/05/2013	Goshawk	1	Male	Adult	GI_3	1st year, 15:30, height band 2 for 21 seconds
16/05/2013	Goshawk	1	Male	Adult	GI_3	1st year, 15:30, height band 2 for 18 seconds
16/05/2013	Kestrel	1	Male	Adult	-	
16/05/2013	Sparrowhawk	4	Male/female	Adult		2 pairs, likely to be more
17/05/2013	Goshawk	1	Male	Male	GI_1	07:16, height band 2 for 24 seconds. carrying small prey
17/05/2013	Goshawk	1	Male	Adult	GI_2	12:01, height bands 2 and 3 for 45 seconds. Different male to one seen at 07:16
17/05/2013	Goshawk	1	-	Adult	GI_2	12:11, height band 2 for 15 seconds
13/06/2013	Buzzard	11	-	-	-	
13/06/2013	Goshawk	1	Male	Adult	GI_1	11:30, height band 2
13/06/2013	Goshawk	1	Male	Adult	GI_1	12:11, height band 2 for 25 seconds. landed on prominent tree with prey
13/06/2013	Goshawk	1	-	Adult	GI_3	14:01, height band 2 for 18 seconds
13/06/2013	Goshawk	1	-	Adult	GI_3	1st year, 15:31, height band 2 for 18 seconds. carrying prey
13/06/2013	Long-eared owl	1	-	Adult	-	flushed from ground
13/06/2013	Sparrowhawk	4	Male/female	Adult		
13/06/2013	Tawny owl	2	Male/female	Adult	-	
13/06/2013	Tawny owl	2	Male/female	Adult	-	
14/06/2013	Kestrel	1	Male	Adult	-	12:04, height band 2 for 6 seconds
26/07/2013	Buzzard	24	-	-	-	14 pairs spread across study area, at least 12 successful
26/07/2013	Goshawk	1	-	Adult	GI_2	
26/07/2013	Goshawk	2	-	Juvenile	GI_1	young goshawks
26/07/2013	Goshawk	1	Male	Adult	GI_3	1st year, 16:40, height band 2 for 18 seconds
26/07/2013	Goshawk	1	-	Adult	GI_1	17:40, height band 3 for 90 seconds
26/07/2013	Long-eared owl	4	-	Juvenile	-	juveniles in thicket, thought to be 2 pairs with one pair successful
26/07/2013	Peregrine falcon	1	Female	Juvenile	PE_1	15:26, height band 2 for 90 seconds. interaction with buzzard
26/07/2013	Sparrowhawk	4	-	Adult		one breeding pair definitely successful
26/07/2013	Sparrowhawk	1	Female	Adult		seen in new area
26/07/2013	Tawny owl	5	-	Adult	-	spread across study area
21/04/2015	Buzzard	1	-	-	-	circling
21/04/2015	Buzzard	1	-	-	-	circling
21/04/2015	Buzzard	1	-	-	-	circling
21/04/2015	Buzzard	1	-	-	-	
21/04/2015	Goshawk	2	Male/female	Adult	GI_1	pair circling
21/04/2015	Goshawk	1	-	Adult	GI_2	seen flying in and then circling
16/05/2015	Buzzard	1	-	-	-	perched, then seen circling before flying off
16/05/2015	Buzzard	1	-	-	-	circling
16/05/2015	Kestrel	1	Male	Adult	-	perched then flying away
16/05/2015	Peregrine falcon	1	-	Adult	PE_1	perched and alarm calling, then flew off from cliff
29/05/2015	Buzzard	1	-	-	-	soaring
29/05/2015	Buzzard	1	-	-	-	soaring
29/05/2015	Buzzard	1	-	-	-	soaring
29/05/2015	Buzzard	1	-	-	-	soaring
29/05/2015	Goshawk	1	Male	Adult	GI_1	flew south west low over canopy
29/05/2015	Peregrine falcon	1	-	Adult	PE_1	single individual still present at nest site
15/06/2015	Buzzard	1	-	-	-	soaring
15/06/2015	Buzzard	1	-	-	-	soaring, mobbed by carrion crow
15/06/2015	Buzzard	1	-	-	-	soaring and drifted north
15/06/2015	Buzzard	1	-	-	-	flew in low, drifted west
15/06/2015	Buzzard	1	-	-	-	interacting with another buzzard travelling west
15/06/2015	Buzzard	1	-	-	-	interacting with another buzzard travelling west
15/06/2015	Buzzard	1	-	-	-	soaring high over hill
15/06/2015	Buzzard	1	-	-	-	short flight west of black hill
15/06/2015	Buzzard	1	-	-	-	soaring behind vantage point
15/06/2015	Peregrine falcon	1	-	Adult	PE_1	two short flights at nest site
27/06/2015	Buzzard	1	-	-	-	
27/06/2015	Buzzard	1	-	-	-	soaring to west of hill
27/06/2015	Buzzard	1	-	-	-	flew off east
27/06/2015	Buzzard	3	-	-	-	three buzzards interacting, flew in from south and flew north
27/06/2015	Buzzard	10	-	-	-	seen briefly, flying
27/06/2015	Peregrine falcon	2	-	Juvenile	PE_1	flying around nest site
05/07/2015	Buzzard	6	-	-	-	buzzards spotted throughout day, some interacting in pairs or threes
23/07/2015	Buzzard	1	-	-	-	interacting with kestrel
23/07/2015	Buzzard	1	-	-	-	flying
23/07/2015	Buzzard	1	-	-	-	flying
23/07/2015	Kestrel	1	-	Adult	-	interacting with buzzard
23/07/2015	Kestrel	1	-	Adult	-	single flight
16/03/2021	Goshawk	2	Male/Female	Adult	GI_2.1	Pair displaying.
16/03/2021	Buzzard	-	-	-	-	
16/03/2021	Sparrowhawk	-	-	-	-	
17/03/2021	Goshawk	2	Male/Female	Adult	GI_1.2	Pair displaying.
17/03/2021	Goshawk	2	Male/Female	Adult	GI_2.2	Pair displaying.
17/03/2021	Sparrowhawk	-	-	-	-	
17/03/2021	Kestrel	-	-	-	-	
17/03/2021	Buzzard	-	-	-	-	
13/04/2021	Tawny owl	-	-	-	-	
13/04/2021	Buzzard	-	-	-	-	
13/04/2021	Tawny owl	-	-	-	-	
14/04/2021	Buzzard	-	-	-	-	
15/04/2021	Goshawk	1	-	Adult	GI_2	Flying East by Burns Plantation.
15/04/2021	Buzzard	-	-	-	-	

Date	Species	Number Recorded	Sex	Age	Nest ID	Notes
16/04/2021	Goshawk	1	-	Adult	GI_2	Flying North by Burns Plantation.
03/05/2021	Buzzard	-	-	-	-	
04/05/2021	Buzzard	-	-	-	-	
07/05/2021	Tawny owl	-	-	-	-	
02/06/2021	Kestrel	-	-	-	-	
02/06/2021	Buzzard	-	-	-	-	
03/06/2021	Kestrel	-	-	-	-	
03/06/2021	Buzzard	-	-	-	-	
07/07/2021	Buzzard	-	-	-	-	
08/07/2021	Kestrel	4	-	-	-	
08/07/2021	Buzzard	-	-	-	-	
03/08/2021	Sparrowhawk	-	-	-	-	
03/08/2021	Buzzard	-	-	-	-	
04/08/2021	Buzzard	-	-	-	-	Pair displaying.

D.5 Bird Species Index

A total of 92 bird species or signs was recorded at, or adjacent, to the site during the ornithological surveys. **Table D-10** comprises a list of all these species along with their conservation status.

Table D-10: All Bird Species Recorded at Millmoor Rig (2011 - 2021)

Species	Conservation Status	Species	Conservation Status
Blackbird	BoCC[3] Green	Long-eared owl	BoCC Green
Blackcap	BoCC Green	Long-tailed tit	BoCC Green
Black-headed gull	BoCC Amber	Magpie	BoCC Green
Blue tit	BoCC Green	Mallard	BoCC Amber
Brambling	Schedule 1, BoCC Green	Meadow pipit	BoCC Amber
Bullfinch	BoCC Amber	Merlin	Annex 1, Schedule 1, BoCC Red
Buzzard	BoCC Green	Mistle thrush	BoCC Red
Canada goose	No status	Nuthatch	BoCC Green
Carrion crow	BoCC Green	Osprey	Annex 1, Schedule 1, BoCC Amber
Chaffinch	BoCC Green	Oystercatcher	BoCC Amber
Chiffchaff	BoCC Green	Peregrine falcon	Annex 1, Schedule 1, BoCC Green
Coal tit	BoCC Green	Pheasant	No status
Common crossbill	Schedule 1, BoCC Green	Pied flycatcher	BoCC Amber
Common gull	BoCC Amber	Pied wagtail	BoCC Green
Cuckoo	BoCC Red	Pink-footed goose	BoCC Amber
Curlew	BoCC Red	Raven	BoCC Green
Dipper	BoCC Amber	Red kite	Annex 1, Schedule 1, BoCC Green
Dunnock	BoCC Amber	Redwing	Schedule 1, BoCC Amber
Fieldfare	Schedule 1, BoCC Red	Reed bunting	BoCC Amber
Garden warbler	BoCC Green	Robin	BoCC Green
Goldcrest	BoCC Green	Rook	BoCC Amber
Golden plover	Annex 1, BoCC Green	Sand martin	BoCC Green
Goldfinch	BoCC Green	Sedge warbler	BoCC Amber
Goshawk	Schedule 1, BoCC Green	Siskin	BoCC Green
Grasshopper warbler	BoCC Red	Skylark	BoCC Red
Great black-backed gull	BoCC Amber	Snipe	BoCC Amber
Great grey shrike	No status	Song thrush	BoCC Amber
Great spotted woodpecker	BoCC Green	Sparrowhawk	BoCC Amber
Great tit	BoCC Green	Spotted flycatcher	BoCC Red
Green woodpecker	BoCC Green	Starling	BoCC Red
Greenfinch	BoCC Red	Stonechat	BoCC Green
Grey heron	BoCC Green	Swallow	BoCC Green
Grey wagtail	BoCC Amber	Swift	BoCC Red
Greylag goose	BoCC Amber	Tawny owl	BoCC Amber
Hawfinch	BoCC Red	Tree pipit	BoCC Red
Hen harrier	Annex 1, Schedule 1, BoCC Red	Treecreeper	BoCC Green
Herring gull	BoCC Red	Twite	BoCC Red
House martin	BoCC Red	Wheatear	BoCC Amber
House sparrow	BoCC Red	Whinchat	BoCC Red
Jackdaw	BoCC Green	Whitethroat	BoCC Amber
Jay	BoCC Green	Willow warbler	BoCC Amber
Kestrel	BoCC Amber	Wood warbler	BoCC Red
Lapwing	BoCC Red	Woodcock	BoCC Red
Lesser black-backed gull	BoCC Amber	Woodpigeon	BoCC Green
Lesser redpoll	BoCC Red	Wren	BoCC Green
Linnet	BoCC Red	Long-eared owl	BoCC Green

[3] BoCC – Birds of Conservation Concern (Stanbury *et al.* 2021)

ANNEX E. COLLISION RISK ASSESSMENTS

Delaunay Triangulation[1] from the proposed turbine locations was used to create a wind farm area[2] and from this the Collision Risk Analysis Area (CRAA) was created using a 500 m buffer (**Figure 9.1**, **Figure 9.2** and **Figure 9.3**). Using the larger 500 m area around the turbines accounts for possible inaccuracies in the recording of flightlines and ensures the assessment is precautionary. The Proposed Development consists of four hub heights (with the same rotor diameter) and as the turbine parameters are integral to the Collision Risk Model (CRM), a CRM was run with each hub height. These are presented below with the worst-case for each species used.

The ultimate aim is to have 100 % coverage of the turbines and associated CRAA by the viewsheds, however in practice this is often unachievable as a result of the topography of the site, presence of mature forestry and limited to no access outwith the site boundary. For the Proposed Development, although some small areas of the CRAA remain 'invisible' at 20 m above ground level (**Figure 9.1**, **Figure 9.2** and **Figure 9.3**), the habitat within these areas is of sufficient similarity such that the survey data collected and subsequently assessed are considered to be representative of the whole CRAA. In addition, there were no records made during any of the surveys which would suggest that this area was of any particular importance to target species. Furthermore, the flying time at risk height (secsHahr^{-1}) for each species is calculated as a single mean activity rate within the entirety of the CRAA.

Table E-1 to **Table E-3** present the parameters which apply to each Collision Risk Model (CRM).

Table E-1: Wind Farm Parameters

Size of Wind Farm Envelope	773.77				hectares (ha)
Number of Turbines	13				turbines
Rotor Diameter	163				metres (m)
Hub Height	148.5	128.5	118.5	98.5	m
Max. Rotor Depth	0.91				m (at 15° pitch angle)
Max. Chord	4.2				m
Pitch	6				degrees (°)
Rotation Period	5.77				seconds (secs)
Turbine Operation Time	85				percent (%)
Risk Height: Highest	230	210	200	180	m
Risk Height: Lowest	67	47	37	17	m
Flight Risk Volume	1261250609				m^3

Table E-2: CRM Parameters per Species

Species	Length (m)	Wingspan (m)	Assumed flight speed, v (ms^{-1})	Avoidance Rate	Probability of Collision	Bird Transit Time (secs)
Curlew	0.6	1	13	0.98	0.0562	0.1162
Goshawk	0.62	1.65	9.7	0.98	0.0665	0.1577
Merlin	0.28	0.56	13	0.98	0.0432	0.0915
Peregrine falcon	0.48	1.1	12.1	0.98	0.0534	0.1550
Pink-footed goose	0.675	1.525	17.3	0.998	0.0547	0.0916
Red kite	0.66	1.95	12	0.99	0.0634	0.1308

Table E-3: Visible Area Within the CRAA per Vantage Point

VP	Area (ha)	VP	Area (ha)	VP	Area (ha)
1	72.35	4	229.45	9	
2	334.65	6	441.39	10	
3	462.60	7	211.25	11	

Birds are assumed to be active during all the daylight hours and this is estimated by calculating the number of hours per day between sunrise and sunset (adjusting for correct latitude) for the survey seasons as defined in **Table E-4** below.

Table E-4: Season Definitions per Species/Species Group

Species	Breeding Season			Non-Breeding Season		
	Start Date	End Date	Hours Presumed Present	Start Date	End Date	Hours Presumed Present
Geese	15th May	31st August	1,790	1st September	14th May	2,705
Raptors	15th March	31st August	2,642	1st September	14th March	1,853
Waders	1st April	31st July	1,966	1st August	31st March	2,529

Outputs for the CRM for the following species are presented in the following order below:

- Curlew;
- Goshawk;
- Merlin;
- Peregrine falcon;
- Pink-footed goose; and
- Red kite.

[1] Delaunay triangulation is a form of mathematical/computational geometry where a given set of points (in this case the turbine locations) are all joined to create discrete triangles. Further information is available here: https://uk.mathworks.com/help/matlab/math/delaunay-triangulation.html

[2] This was adjusted where appropriate depending on the spatial location of the turbines in relation to other turbines.

E.1 Hub Height 148.8m

Goshawk

Non-Breeding Season 2011/2012

Table E-5: Goshawk Flight Activity

VP	Seconds at risk height	Observation effort (HaHr)	Flying time at risk height (secsHahr^{-1})
1	0.00	2532.24	0.00
2	0.00	12047.35	0.00
3	0.00	18041.23	0.00
4	30.63	8260.35	0.0000002

Table E-6: Goshawk Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0002	hr^{-1}
Total Combined Rotor Swept Volume	415049	m^3
Bird Occupancy	0.2984	hrs/season
Bird Occupancy of Rotor Swept Volume	0.3535	bird-sec
No. of Transits Through Rotors	2.2411	per season
Estimated Collisions	0.1490	per season
Estimated Collisions after Correction for Operation	0.1266	per season
Estimated Collisions after Avoidance factor	0.0025	per season
Equivalent to 1 bird every	394.80	seasons

Breeding Season 2012

Table E-7: Goshawk Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	2170.49	0.00
2	21.75	10039.46	0.0000002
3	75.40	17116.04	0.0000006
4	0.00	6883.63	0.00

Table E-8: Goshawk Mortality Estimates

Mean activity in Wind Farm at Rotor Height	0.0006	hr^{-1}
Total Combined Rotor Swept Volume	415049	m^3
Bird Occupancy	1.5235	hrs/season
Bird Occupancy of Rotor Swept Volume	1.8048	bird-sec
No. of Transits Through Rotors	11.4422	per season
Estimated Collisions	0.7607	per season
Estimated Collisions After Correction for Operation	0.6466	per season
Estimated Collisions After Avoidance Factor	0.0129	per season
Equivalent to 1 Bird Every	77.33	seasons

Non-Breeding Season 2020/2021

Table E-9: Goshawk Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
10	0.00	13218.51	0.00
11	2.84	8851.86	0.00000004

Table E-10: Goshawk Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.00003	hr^{-1}
Total Combined Rotor Swept Volume	415049	m^3
Bird Occupancy	0.0512	hrs/season
Bird Occupancy of Rotor Swept Volume	0.0607	bird-sec
No. of Transits Through Rotors	0.3848	per season
Estimated Collisions	0.0256	per season
Estimated Collisions After Correction for Operation	0.0217	per season
Estimated Collisions After Avoidance Factor	0.0004	per season
Equivalent to 1 Bird Every	2299.56	seasons

Peregrine Falcon

Non-Breeding Season 2011/2012

Table E-11: Peregrine Falcon Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	2532.24	0.00
2	0.00	12047.35	0.00
3	48.61	18041.23	0.0000003
4	0.00	8260.35	0.00

Table E-12: Peregrine Falcon Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0003	hr^{-1}
Total Combined Rotor Swept Volume	377071	m^3
Bird Occupancy	0.4736	hrs/season
Bird Occupancy of Rotor Swept Volume	0.5097	bird-sec
No. of Transits Through Rotors	4.4374	per season
Estimated Collisions	0.2369	per season
Estimated Collisions After Correction for Operation	0.2014	per season
Estimated Collisions After Avoidance Factor	0.0040	per season
Equivalent to 1 Bird Every	248.26	seasons

Breeding Season 2012

Table E-13: Peregrine Falcon Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	2170.49	0.00
2	5.43	10039.46	0.00000004
3	0.00	17116.04	0.00
4	0.00	6883.63	0.00

Table E-14: Peregrine Falcon Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.00003	hr^{-1}
Total Combined Rotor Swept Volume	377071	m^3
Bird Occupancy	0.0851	hrs/season
Bird Occupancy of Rotor Swept Volume	0.0916	bird-sec
No. of Transits Through Rotors	0.7973	per season
Estimated Collisions	0.0426	per season
Estimated Collisions After Correction for Operation	0.0362	per season
Estimated Collisions After Avoidance Factor	0.0007	per season
Equivalent to 1 Bird Every	1381.69	seasons

Breeding Season 2021

Table E-15: Peregrine Falcon Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
10	0.00	17482.54	0.00
11	13.42	7772.36	0.0000001

Table E-16: Peregrine Falcon Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0001	hr^{-1}
Total Combined Rotor Swept Volume	377071	m^3
Bird Occupancy	0.3018	hrs/season
Bird Occupancy of Rotor Swept Volume	0.3248	bird-sec
No. of Transits Through Rotors	2.8276	per season
Estimated Collisions	0.1510	per season
Estimated Collisions After Correction for Operation	0.1283	per season
Estimated Collisions After Avoidance Factor	0.0026	per season
Equivalent to 1 Bird Every	389.60	seasons

Pink-Footed Goose

Non-Breeding Season 2011/2012

Table E-17: Pink-Footed Goose Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	3183.39	0.00
2	142.43	15728.48	0.000001
3	0.00	23129.78	0.00
4	0.00	10325.44	0.00

Table E-18: Pink-Footed Goose Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0006	hr^{-1}
Total Combined Rotor Swept Volume	429970	m^3
Bird Occupancy	1.5813	hrs/season
Bird Occupancy of Rotor Swept Volume	1.9407	bird-sec
No. of Transits Through Rotors	21.1827	per season
Estimated Collisions	1.1594	per season
Estimated Collisions After Correction for Operation	0.9854	per season
Estimated Collisions After Avoidance Factor	0.0020	per season
Equivalent to 1 Bird Every	507.38	seasons

Red Kite

Breeding Season 2013

Table E-19: Red kite flight activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
6	0.00	15889.98	0.00
7	77.87	7604.83	0.000001
9	0.00	8100.49	0.00

Table E-20: Red kite mortality estimates

Mean Activity in Wind Farm at Rotor Height	0.0005	hr^{-1}
Total Combined Rotor Swept Volume	425900	m^3
Bird Occupancy	1.3994	hrs/season
Bird Occupancy of Rotor Swept Volume	1.7012	bird-sec
No. of Transits Through Rotors	13.0031	per season
Estimated Collisions	0.8247	per season
Estimated Collisions After Correction for Operation	0.7010	per season
Estimated Collisions After Avoidance Factor	0.0070	per season
Equivalent to 1 Bird Every	142.65	seasons

E.2 Hub Height 128.5m

Goshawk

Non-Breeding Season 2011/2012

Table E-21: Goshawk Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	2532.24	0.00
2	0.00	12047.35	0.00
3	0.00	18041.23	0.00
4	41.19	8260.35	0.0000003

Table E-22: Goshawk Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0002	hr^{-1}
Total Combined Rotor Swept Volume	415049	m^3
Bird Occupancy	0.4013	hrs/season
Bird Occupancy of Rotor Swept Volume	0.4754	bird-sec
No. of Transits Through Rotors	3.0139	per season
Estimated Collisions	0.2004	per season
Estimated Collisions After Correction for Operation	0.1703	per season
Estimated Collisions After Avoidance Factor	0.0034	per season
Equivalent to 1 Bird Every	293.57	seasons

Breeding Season 2012

Table E-23: Goshawk Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	2170.49	0.00
2	29.25	10039.46	0.0000002
3	101.40	17116.04	0.0000008
4	0.00	6883.63	0.00

Table E-24: Goshawk Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0008	hr^{-1}
Total Combined Rotor Swept Volume	415049	m^3
Bird Occupancy	2.0488	hrs/season
Bird Occupancy of Rotor Swept Volume	2.4272	bird-sec
No. of Transits Through Rotors	15.3878	per season
Estimated Collisions	1.0230	per season
Estimated Collisions After Correction for Operation	0.8696	per season
Estimated Collisions After Avoidance Factor	0.0174	per season
Equivalent to 1 Bird Every	57.50	seasons

Non-Breeding Season 2020/2021

Table E-25: Goshawk flight activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
10	0.00	13218.51	0.00
11	4.56	8851.86	0.0000001

Table E-26: Goshawk Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.00004	hr^{-1}
Total Combined Rotor Swept Volume	415049	m^3
Bird Occupancy	0.0823	hrs/season
Bird Occupancy of Rotor Swept Volume	0.0975	bird-sec
No. of Transits Through Rotors	0.6180	per season
Estimated Collisions	0.0411	per season
Estimated Collisions After Correction for Operation	0.0349	per season
Estimated Collisions After Avoidance Factor	0.0007	per season
Equivalent To 1 Bird Every	1431.80	seasons

Peregrine Falcon

Non-Breeding Season 2011/2012

Table E-27: Peregrine Falcon Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying time at Risk Height (secsHahr^{-1})
1	0.00	2532.24	0.00
2	0.00	12047.35	0.00
3	65.37	18041.23	0.0000004
4	0.00	8260.35	0.00

Table E-28: Peregrine Falcon Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0003	hr^{-1}
Total Combined Rotor Swept Volume	377071	m^3
Bird Occupancy	0.6369	hrs/season
Bird Occupancy of Rotor Swept Volume	0.6855	bird-sec
No. of Transits Through Rotors	5.9675	per season
Estimated Collisions	0.3186	per season
Estimated Collisions after Correction for Operation	0.2708	per season
Estimated Collisions after Avoidance Factor	0.0054	per season
Equivalent to 1 Bird Every	184.60	seasons

Breeding Season 2012

Table E-29: Peregrine Falcon Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	2170.49	0.00
2	7.30	10039.46	0.0000001
3	0.00	17116.04	0.00
4	0.00	6883.63	0.00

Table E-30: Peregrine Falcon Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.00004	hr^{-1}
Total Combined Rotor Swept Volume	377071	m^3
Bird Occupancy	0.1144	hrs/season
Bird Occupancy of Rotor Swept Volume	0.1232	bird-sec
No. of Transits Through Rotors	1.0722	per season
Estimated Collisions	0.0573	per season
Estimated Collisions After Correction for Operation	0.0487	per season
Estimated Collisions After Avoidance Factor	0.0010	per season
Equivalent to 1 Bird Every	1027.41	seasons

Breeding Season 2021

Table E-31: Peregrine Falcon Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
10	0.00	17482.54	0.00
11	15.58	7772.36	0.0000002

Table E-32: Peregrine Falcon Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0001	hr^{-1}
Total Combined Rotor Swept Volume	377071	m^3
Bird Occupancy	0.3504	hrs/season
Bird Occupancy of Rotor Swept Volume	0.3771	bird-sec
No. of Transits Through Rotors	3.2827	per season
Estimated Collisions	0.1753	per season
Estimated Collisions After Correction for Operation	0.1490	per season
Estimated Collisions After Avoidance Factor	0.0030	per season
Equivalent to 1 Bird Every	335.58	seasons

Pink-Footed Goose

Non-Breeding Season 2011/2012

Table E-33: Pink-Footed Goose Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	3183.39	0.00
2	191.54	15728.48	0.000001
3	0.00	23129.78	0.00
4	0.00	10325.44	0.00

Table E-34: Pink-footed goose mortality estimates

Mean Activity in Wind Farm at Rotor Height	0.0008	hr^{-1}
Total Combined Rotor Swept Volume	429970	m^3
Bird Occupancy	2.1266	hrs/season
Bird Occupancy of Rotor Swept Volume	2.6099	bird-sec
No. of Transits Through Rotors	28.4870	per season
Estimated Collisions	1.5591	per season
Estimated Collisions After Correction for Operation	1.3253	per season
Estimated Collisions After Avoidance Factor	0.0027	per season
Equivalent to 1 Bird Every	377.28	seasons

Red Kite

Breeding Season 2013

Table E-35: Red Kite Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
6	0.00	15889.98	0.00
7	104.72	7604.83	0.000001
9	0.00	8100.49	0.00

Table E-36: Red Kite Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0007	hr^{-1}
Total Combined Rotor Swept Volume	425900	m^3
Bird Occupancy	1.8820	hrs/season
Bird Occupancy of Rotor Swept Volume	2.2879	bird-sec
No. of Transits Through Rotors	17.4869	per season
Estimated Collisions	1.1091	per season
Estimated Collisions After Correction for Operation	0.9427	per season
Estimated Collisions After Avoidance Factor	0.0094	per season
Equivalent to 1 Bird Every	106.07	seasons

E.3 Hub Height 118.5m

Goshawk

Non-Breeding Season 2011/2012

Table E-37: Goshawk Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	2532.24	0.00
2	0.00	12047.35	0.00
3	0.00	18041.23	0.00
4	46.47	8260.35	0.0000003

Table E-38: Goshawk Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0002	hr^{-1}
Total Combined Rotor Swept Volume	415049	m^3
Bird Occupancy	0.4527	hrs/season
Bird Occupancy of Rotor Swept Volume	0.5363	bird-sec
No. of Transits Through Rotors	3.4003	per season
Estimated Collisions	0.2261	per season
Estimated Collisions After Correction for Operation	0.1922	per season
Estimated Collisions After Avoidance Factor	0.0038	per season
Equivalent to 1 Bird Every	260.21	seasons

Breeding Season 2012

Table E-39: Goshawk Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	2170.49	0.00
2	33.00	10039.46	0.0000003
3	114.40	17116.04	0.0000009
4	0.00	6883.63	0.00

Table E-40: Goshawk Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0009	hr^{-1}
Total Combined Rotor Swept Volume	415049	m^3
Bird Occupancy	2.3115	hrs/season
Bird Occupancy of Rotor Swept Volume	2.7383	bird-sec
No. of Transits Through Rotors	17.3606	per season
Estimated Collisions	1.1542	per season
Estimated Collisions After Correction for Operation	0.9811	per season
Estimated Collisions After Avoidance Factor	0.0196	per season
Equivalent to 1 Bird Every	50.97	seasons

Non-Breeding Season 2020/2021

Table E-41: Goshawk Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
10	0.00	13218.51	0.00
11	13.53	8851.86	0.0000002

Table E-42: Goshawk Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0001	hr^{-1}
Total Combined Rotor Swept Volume	415049	m^3
Bird Occupancy	0.2442	hrs/season
Bird Occupancy of Rotor Swept Volume	0.2893	bird-sec
No. of Transits Through Rotors	1.8341	per season
Estimated Collisions	0.1219	per season
Estimated Collisions After Correction for Operation	0.1036	per season
Estimated Collisions After Avoidance Factor	0.0021	per season
Equivalent to 1 Bird Every	482.40	seasons

Breeding Season 2021

Table E-43: Goshawk Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
10	24.40	17482.54	0.0000003
11	0.00	7772.36	0.00

Table E-44: Goshawk Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0002	hr^{-1}
Total Combined Rotor Swept Volume	415049	m^3
Bird Occupancy	0.5485	hrs/season
Bird Occupancy of Rotor Swept Volume	0.6498	bird-sec
No. of Transits Through Rotors	4.1196	per season
Estimated Collisions	0.2739	per season
Estimated Collisions After Correction for Operation	0.2328	per season
Estimated Collisions After Avoidance Factor	0.0047	per season
Equivalent to 1 Bird Every	214.78	seasons

Peregrine Falcon

Non-Breeding Season 2011/2012

Table E-45: Peregrine Falcon Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	2532.24	0.00
2	0.00	12047.35	0.00
3	73.75	18041.23	0.000001
4	0.00	8260.35	0.00

Table E-46: Peregrine Falcon Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0004	hr^{-1}
Total Combined Rotor Swept Volume	377071	m^3
Bird Occupancy	0.7186	hrs/season
Bird Occupancy of Rotor Swept Volume	0.7734	bird-sec
No. of Transits Through Rotors	6.7325	per season
Estimated Collisions	0.3595	per season
Estimated Collisions After Correction for Operation	0.3056	per season
Estimated Collisions After Avoidance Factor	0.0061	per season
Equivalent to 1 Bird Every	163.63	seasons

Breeding Season 2012

Table E-47: Peregrine Falcon Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	2170.49	0.00
2	8.23	10039.46	0.0000001
3	0.00	17116.04	0.00
4	0.00	6883.63	0.00

Table E-48: Peregrine Falcon Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.00005	hr^{-1}
Total Combined Rotor Swept Volume	377071	m^3
Bird Occupancy	0.1291	hrs/season
Bird Occupancy of Rotor Swept Volume	0.1390	bird-sec
No. of Transits Through Rotors	1.2097	per season
Estimated Collisions	0.0646	per season
Estimated Collisions After Correction for Operation	0.0549	per season
Estimated Collisions After Avoidance Factor	0.0011	per season
Equivalent to 1 Bird Every	910.66	seasons

Breeding Season 2021

Table E-49: Peregrine Falcon Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
10	0.00	17482.54	0.00
11	17.59	7772.36	0.0000002

Table E-50: Peregrine Falcon Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0001	hr^{-1}
Total Combined Rotor Swept Volume	377071	m^3
Bird Occupancy	0.3955	hrs/season
Bird Occupancy of Rotor Swept Volume	0.4257	bird-sec
No. of Transits Through Rotors	3.7053	per season
Estimated Collisions	0.1979	per season
Estimated Collisions After Correction for Operation	0.1682	per season
Estimated Collisions After Avoidance Factor	0.0034	per season
Equivalent to 1 Bird Every	297.31	seasons

Pink-Footed Goose

Non-Breeding Season 2011/2012

Table E-51: Pink-Footed Goose Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	3183.39	0.00
2	216.10	15728.48	0.000001
3	0.00	23129.78	0.00
4	0.00	10325.44	0.00

Table E-52: Pink-Footed Goose Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0009	hr^{-1}
Total Combined Rotor Swept Volume	429970	m^3
Bird Occupancy	2.3993	hrs/season
Bird Occupancy of Rotor Swept Volume	2.9445	bird-sec
No. of Transits Through Rotors	32.1392	per season
Estimated Collisions	1.7590	per season
Estimated Collisions After Correction for Operation	1.4952	per season
Estimated Collisions After Avoidance Factor	0.0030	per season
Equivalent to 1 Bird Every	334.41	seasons

Red Kite

Breeding Season 2013

Table E-53: Red Kite Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
6	0.00	15889.98	0.00
7	118.15	7604.83	0.000001
9	0.00	8100.49	0.00

Table E-54: Red Kite Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0008	hr^{-1}
Total Combined Rotor Swept Volume	425900	m^3
Bird Occupancy	2.1233	hrs/season
Bird Occupancy of Rotor Swept Volume	2.5812	bird-sec
No. of Transits Through Rotors	19.7288	per season
Estimated Collisions	1.2513	per season
Estimated Collisions After Correction for Operation	1.0636	per season
Estimated Collisions After Avoidance Factor	0.0106	per season
Equivalent to 1 Bird Every	94.02	seasons

E.4 Hub Height 98.5m

Curlew

Breeding Season 2012

Table E-55: Curlew Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	1953.44	0.00
2	0.36	9035.51	0.000000003
3	0.00	12490.08	0.00
4	0.00	6195.26	0.00

Table E-56: Curlew Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.000003	hr^{-1}
Total Combined Rotor Swept Volume	409624	m^3
Bird Occupancy	0.0051	hrs/season
Bird Occupancy of Rotor Swept Volume	0.0059	bird-sec
No. of Transits Through Rotors	0.0512	per season
Estimated Collisions	0.0029	per season
Estimated Collisions After Correction for Operation	0.0024	per season
Estimated Collisions After Avoidance Factor	0.0000	per season
Equivalent to 1 Bird Every	20433.00	seasons

Goshawk

Non-Breeding Season 2011/2012

Table E-57: Goshawk Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	2532.24	0.00
2	0.00	12047.35	0.00
3	0.00	18041.23	0.00
4	55.44	8260.35	0.0000004

Table E-58: Goshawk Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0003	hr^{-1}
Total Combined Rotor Swept Volume	415049	m^3
Bird Occupancy	0.5402	hrs/season
Bird Occupancy of Rotor Swept Volume	0.6400	bird-sec
No. of Transits Through Rotors	4.0572	per season
Estimated Collisions	0.2697	per season
Estimated Collisions After Correction for Operation	0.2293	per season
Estimated Collisions After Avoidance Factor	0.0046	per season
Equivalent to 1 Bird Every	218.08	seasons

Breeding Season 2012

Table E-59: Goshawk Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk hHeight (secsHahr^{-1})
1	0.00	2170.49	0.00
2	39.38	10039.46	0.0000003
3	147.00	17116.04	0.0000011
4	0.00	6883.63	0.00

Table E-60: Goshawk Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0011	hr^{-1}
Total Combined Rotor Swept Volume	415049	m^3
Bird Occupancy	2.9226	hrs/season
Bird Occupancy of Rotor Swept Volume	3.4624	bird-sec
No. of Transits Through Rotors	21.9511	per season
Estimated Collisions	1.4594	per season
Estimated Collisions After Correction For Operation	1.2405	per season
Estimated Collisions After Avoidance Factor	0.0248	per season
Equivalent to 1 Bird Every	40.31	seasons

Non-Breeding Season 2020/2021

Table E-61: Goshawk Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
10	3.00	13218.51	0.00000004
11	70.49	8851.86	0.00000089

Table E-62: Goshawk Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0007	hr^{-1}
Total Combined Rotor Swept Volume	415049	m^3
Bird Occupancy	1.3263	hrs/season
Bird Occupancy of Rotor Swept Volume	1.5713	bird-sec
No. of Transits Through Rotors	9.9617	per season
Estimated Collisions	0.6623	per season
Estimated Collisions After Correction for Operation	0.5629	per season
Estimated Collisions After Avoidance Factor	0.0113	per season
Equivalent to 1 Bird Every	88.82	seasons

Breeding Season 2021

Table E-63: Goshawk Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
10	173.71	17482.54	0.0000019
11	5.68	7772.36	0.0000001

Table E-64: Goshawk Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0015	hr^{-1}
Total Combined Rotor Swept Volume	415049	m^3
Bird Occupancy	4.0332	hrs/season
Bird Occupancy of Rotor Swept Volume	4.7780	bird-sec
No. of Transits Through Rotors	30.2922	per season
Estimated Collisions	2.0139	per season
Estimated Collisions After Correction for Operation	1.7118	per season
Estimated Collisions After Avoidance Factor	0.0342	per season
Equivalent to 1 Bird Every	29.21	seasons

Merlin

Breeding Season 2021

Table E-65: Merlin Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
10	0.00	17482.54	0.00
11	2.04	7772.36	0.00000002

Table E-66: Merlin Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.00002	hr^{-1}
Total Combined Rotor Swept Volume	322816	m^3
Bird Occupancy	0.0459	hrs/season
Bird Occupancy of Rotor Swept Volume	0.0423	bird-sec
No. of Transits Through Rotors	0.4621	per season
Estimated Collisions	0.0200	per season
Estimated Collisions After Correction for Operation	0.0170	per season
Estimated Collisions After Avoidance Factor	0.0003	per season
Equivalent to 1 Bird Every	2944.05	seasons

Peregrine Falcon

Non-Breeding Season 2011/2012

Table E-67: Peregrine Falcon Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	2532.24	0.00
2	0.00	12047.35	0.00
3	88.00	18041.23	0.000001
4	0.00	8260.35	0.00

Table E-68: Peregrine Falcon Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0005	hr^{-1}
Total Combined Rotor Swept Volume	377071	m^3
Bird Occupancy	0.8574	hrs/season
Bird Occupancy of Rotor Swept Volume	0.9228	bird-sec
No. of Transits Through Rotors	8.0331	per season
Estimated Collisions	0.4289	per season
Estimated Collisions After Correction for Operation	0.3646	per season
Estimated Collisions After Avoidance Factor	0.0073	per season
Equivalent to 1 Bird Every	137.13	seasons

Breeding Season 2012

Table E-69: Peregrine Falcon Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	2170.49	0.00
2	9.82	10039.46	0.0000001
3	0.00	17116.04	0.00
4	0.00	6883.63	0.00

Table E-70: Peregrine Falcon Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0001	hr^{-1}
Total Combined Rotor Swept Volume	377071	m^3
Bird Occupancy	0.1541	hrs/season
Bird Occupancy of Rotor Swept Volume	0.1658	bird-sec
No. of Transits Through Rotors	1.4434	per season
Estimated Collisions	0.0771	per season
Estimated Collisions After Correction for Operation	0.0655	per season
Estimated Collisions After Avoidance Factor	0.0013	per season
Equivalent to 1 Bird Every	763.22	seasons

Breeding Season 2021

Table E-71: Peregrine Falcon Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
10	0.00	17482.54	0.00
11	24.53	7772.36	0.0000003

Table E-72: Peregrine Falcon Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0002	hr^{-1}
Total Combined Rotor Swept Volume	377071	m^3
Bird Occupancy	0.5516	hrs/season
Bird Occupancy of Rotor Swept Volume	0.5937	bird-sec
No. of Transits Through Rotors	5.1679	per season
Estimated Collisions	0.2760	per season
Estimated Collisions After Correction for Operation	0.2346	per season
Estimated Collisions After Avoidance Factor	0.0047	per season
Equivalent to 1 Bird Every	213.16	seasons

Pink-Footed Goose

Non-Breeding Season 2011/2012

Table E-73: Pink-Footed Goose Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
1	0.00	3183.39	0.00
2	257.84	15728.48	0.000001
3	0.00	23129.78	0.00
4	0.00	10325.44	0.00

Table E-74: Pink-Footed Goose Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0011	hr^{-1}
Total Combined Rotor Swept Volume	429970	m^3
Bird Occupancy	2.8628	hrs/season
Bird Occupancy of Rotor Swept Volume	3.5134	bird-sec
No. of Transits Through Rotors	38.3479	per season
Estimated Collisions	2.0988	per season
Estimated Collisions After Correction for Operation	1.7840	per season
Estimated Collisions After Avoidance Factor	0.0036	per season
Equivalent to 1 Bird Every	280.27	seasons

Red Kite

Breeding Season 2013

Table E-75: Red Kite Flight Activity

VP	Seconds at Risk Height	Observation Effort (HaHr)	Flying Time at Risk Height (secsHahr^{-1})
6	0.00	15889.98	0.00
7	145.20	7604.83	0.000001
9	0.00	8100.49	0.00

Table E-76: Red Kite Mortality Estimates

Mean Activity in Wind Farm at Rotor Height	0.0010	hr^{-1}
Total Combined Rotor Swept Volume	425900	m^3
Bird Occupancy	2.6095	hrs/season
Bird Occupancy of Rotor Swept Volume	3.1722	bird-sec
No. of Transits Through Rotors	24.2463	per season
Estimated Collisions	1.5378	per season
Estimated Collisions After Correction for Operation	1.3071	per season
Estimated Collisions After Avoidance Factor	0.0131	per season
Equivalent to 1 Bird Every	76.50	seasons