

Our Case Number: ABP-318446-23
Planning Authority Reference Number:



**An
Bord
Pleanála**

Jacqueline Walsh
The Elms
Convent Road
Cahir
Co. Tipperary
E21 YN72

Date: 30 January 2024

Re: Proposed construction of Coumnagappul Wind Farm consisting of 10 no. turbines and associated infrastructure.
In the townlands of Coumnagappul, Carrigbrack, Knockavanniamountain, Barricreemountain Upper and Glennaneanemountain, Skeeheans, Lagg, Co. Waterford.
(www.coumnagappulwindfarmSID.ie)

Dear Sir / Madam,

An Bord Pleanála has received your recent submission in relation to the above mentioned proposed development and will take it into consideration in its determination of the matter. Please accept this letter as a receipt for the fee of €50 that you have paid.

The Board will revert to you in due course with regard to the matter.

Please be advised that copies of all submissions / observations received in relation to the application will be made available for public inspection at the offices of the local authority and at the offices of An Bord Pleanála when they have been processed by the Board.

More detailed information in relation to strategic infrastructure development can be viewed on the Board's website: www.pleanala.ie.

If you have any queries in the meantime please contact the undersigned officer of the Board. Please quote the above mentioned An Bord Pleanála reference number in any correspondence or telephone contact with the Board.

Yours faithfully,

Niamh Hickey
Executive Officer
Direct Line: 01-8737145

Teil
Glaao Áitiúil
Facs
Láithreán Gréasáin
Ríomhphost

Tel (01) 858 8100
LoCall 1890 275 175
Fax (01) 872 2684
Website www.pleanala.ie
Email bord@pleanala.ie

64 Sráid Maoilbhríde
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

Observation Made by : Jacqueline Walsh

Address The Elms, Convent Road, Cahir, Co. Tipperary, E21yn72

Email 

Case : Coomnagappal Windfarm, Ballymacarby, Co. Waterford Case No 318446

Case no : 318446 Coomnagappul wind farm

Introduction

I would like to make an observation in relation to the proposed Coomnagappal Windfarm Case No 318446.

I have a deep familiarity with the proposed development area and a particular interest in birdlife and I was particularly interested in the Ornithological elements of the Environmental Impact Assessment.

Having reviewed Chapter 10, Appendix 10.1 and Appendix 10.2, I have identified a number of issues, summarized here and detailed further in the document. The primary issue I found pertains to the apparent discrepancy between the numerous statements asserting adherence to the best practice guidance of Scottish Natural Heritage (SNH) in "Recommended bird survey methods to inform impact assessment of onshore windfarms" (2017) and the actual implementation of the bird surveys

Specifically,

1. Exclusion of the Comeragh Special Area of Conservation from the Zone of Interest when scoping the Survey
2. Vantage Point Survey to determine flight activity
 - a. The location of Vantage Points which per the maps provided, a viewshed of 500m beyond the turbine was not achieved for all turbines– despite frequent statements that this was the case
 - b. The integrity of the observation data – location, movement, weather conditions and timing as outlined below
 - c. Of the 1,080 survey hours conducted to observe flight activity on the site, only the data from 828 hours of observation or 76.66% was used in the Collision Risk Model. This was due to only VP1, VP2 and VP3 data being used as well as the final year of VP4 observations.
 - d. Within the restricted subset of VP observations to be input into the Collision Risk Model, it seems that the full subset was not input into the model based on comparing the flight times as outlined in Appendix 10.2 per species and the original observations as outlined in Appendix 10.1 (Golden Plover, Peregrine falcon and Snipe were checked)
 - e. Use of spurious avoidance rate for Golden Plover of 99.8% instead of the standard 98%.
3. Breeding and Abundance Survey
 - a. Use of Walkover, Hinterland and Transect survey methodology instead of the species specific survey methodology outlined by Scottish National Heritage (2017) which also sets out significantly greater required survey areas and survey effort than undertaken
 - b. Structure and timing of the Nocturnal survey which was at odds with the guidance for Owl surveys as outlined by SNH(2017) – the most likely species to be present.
 - c. Structure and timing of the field surveys

Given these, I believe there is a legitimate concern around the data presented and the conclusions which are drawn from it specifically, regarding the output from the collision risk impact modelling and the overall assessment of impact on the birdlife of the area due to the constrained nature of the breeding and abundance surveying conducted.

I urge An Bord Pleanála to consider these points in assessing the impact of the proposed development on the birdlife of this special area.

Exclusion of Comeragh SAC from the Zone of Interest.

In both the overview of Chapter 10 and specifically in Volume 3 Appendix 10.1

Relevant guidance from Scottish Natural Heritage (SNH) in relation to birds such as SNH Recommended bird survey methods to inform impact assessment of onshore windfarms (2017), 'Survey Methods for use in assessing the impacts of onshore wind farms on bird communities (2005 & 2010)' and 'Assessing the cumulative impact of onshore wind energy developments (2012)' have also been applied. [Extract from Volume 2 Chapter 10]

This determination of the Zone of Interest for the ornithological survey completely ignores the existence of the Comeragh Special Area of Conservation (SAC) which abuts the site and where one of the turbine locations is approx. 700m from the boundary of the SAC.

Ireland has commitments to protect its avifauna and their habitats through the Birds and Habitats Directives, 2009/147/EC, EEC 92/43 (1992). This protection afforded wild birds in Ireland goes beyond the Natura 2000 network (which includes Special protection Areas (SPAs) and Special Areas of Conservation (SACs)). European Case law has also clarified obligations to protect Annex I migratory, wetland and other Annex I bird species and to protect habitat requirements of birds outside of designated sites. The Birds Directive makes special provision for wetlands and wetland birds while the Habitats Directive makes particular reference to corridors for the movement and dispersal of species in the wider countryside, including 'stepping stones' of habitats to support the Natura 2000 network of SACs and SPAs. A 2007 ruling of the European Court of Justice against Ireland (ECJ c.418-04) stated that Ireland has failed to '...fully transpose and apply the requirements of the second sentence of Article 4(4)' of the Birds Directive which states that '....Outside these protection areas (SPAs), Member States shall also strive to avoid pollution or deterioration of habitats'.

From Chapter 10 Ornithology in the EAR

10.3.2.2 Sites of International Importance

Note only Special Protection Areas (relating to birds) are addressed in this chapter. Special Areas of Conservation (relating to habitats, plants, mammals, and all other non-avian taxa of note) are covered in the Chapter 9 (Biodiversity). The same logic applies to sites of national importance.

While the report does consider the location of Special Protection Areas (SPA), Nature Reserves and Ramsar locations as part of the pre survey desktop review, it ignores the Special Area of Conservation which adjoins the proposed location. In my view, this is clearly not in line with the SNH guidelines or at least not in line with the spirit of the guidelines.

From the Scottish National Heritage "Recommended bird survey methods to inform impact assessment of onshore wind farms (2017)" outlining the sites to be considered in the desktop review

2.1.2 Designated sites There are three types of designated site for birds in Scotland:

- Site of Special Scientific Interest (SSSI) under the Wildlife and Countryside Act 1981 (as amended);
- Special Protection Areas (SPA) under the EC Wild Birds Directive; and
- Ramsar sites under the Ramsar Convention (all Ramsar sites are either SPAs or SSSIs).

A wind farm proposal must not adversely affect the interests of these designated sites. However, the requirements relating to an SPA are much more stringent (see <https://www.nature.scot/professional-advice/planning-anddevelopment/environmental->

assessment/habitats-regulations-appraisal-hra). Consequently, more comprehensive survey is likely to be required for these areas.

Site of Special Scientific Interest (SSSI) is a legal definition under the UK legislation - Wildlife and Countryside Act 1981.

From the UK Department of Environment, Food and Rural Affairs guidance on Natura 2000: European wildlife sites notes

"This leaflet provides information on the law relating to European Union designations to protect wildlife and habitats in England, called Special Protection Areas and Special Areas of Conservation."

Further in the guidance it notes that

"Almost all European sites on land, including areas of foreshore, are also Sites of Special Scientific Interest (SSSI). The European designations are unlikely to greatly affect the day to day management of SSSIs that are already being managed to conserve their biodiversity."

The Nature Scott link which is in the SNH guidance in relation to birds and windfarm impacts links to this site and opens with the below header and specifically calls out the requirement to consider SAC's as well as SPA's in assessing windfarm impact on birds.

Habitats Regulations Appraisal (HRA)

This precautionary, rigorous and legally binding procedure protects Scotland's European sites.

How to consider plans and projects that could affect European sites (SPAs and SACs)

While it might be argued there are no SSSI sites in the proposed development area, as SSSI is a UK term and as the SSSI clearly maps to both SPA and SAC per the DEFRA guidance, the Comeragh Special Conservation Area should have been considered in preparation of the ornithological survey. This would have set a higher threshold in terms of the surveying required. It is difficult to understand how the existence of the Comeragh Special Area of Conservation has been completely discounted in this ornithological survey which is in direct contravention of the spirit of the guidance provided in the SNH document.

Vantage Point Survey

In relation to the Vantage Point Watch for flight survey methodology itself, there are a number of observations that I would like ABP to consider as part of its deliberations.

Area to be surveyed for Vantage Point Survey to determine flight activity

In EAR Chapter 10, it states:-

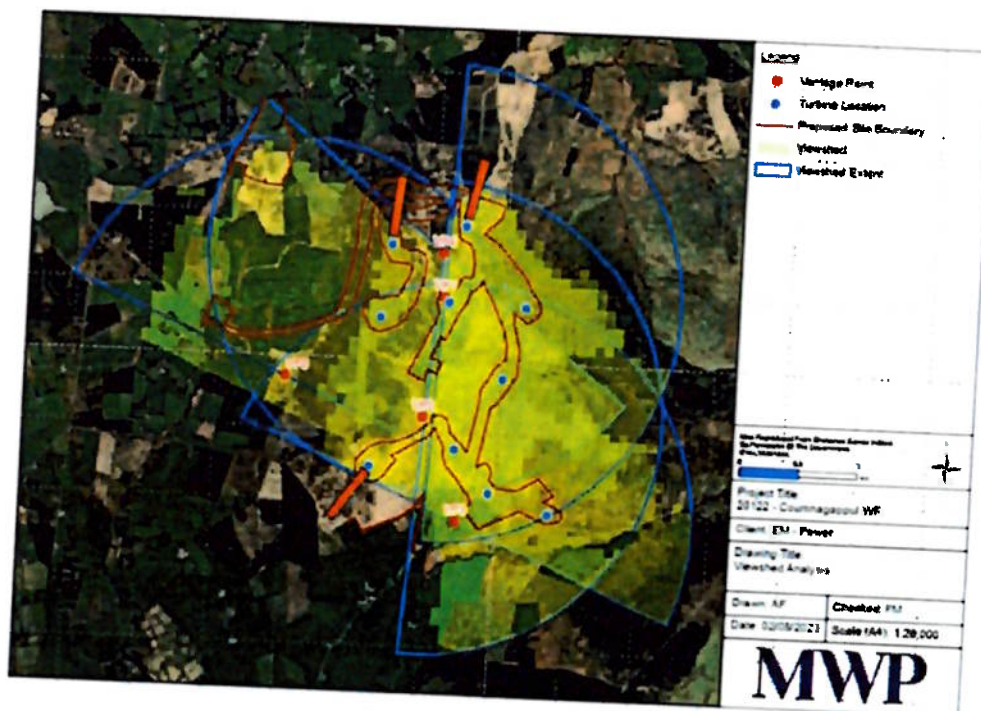
10.3.3.1 Target Species Observation (Flight Activity Surveys) As per SNH guidance (2017) the Site, for the purposes of flight activity surveys (vantage point surveys) is defined not by the planning boundary for the Proposed Development but by a 500m radius circle (buffer) around the proposed wind turbine locations. The proposed turbine locations form the centre point of each of these 500m radius buffers. This study area is called the 'flight activity survey area' and is unique to this survey type. Any target species passing within this 500m buffer from proposed turbine locations (flight activity survey area) is considered within the Site under the SNH (2017) guidance.

Volume 3 Appendix 10.1 further states: -

The survey area is defined as the maximum extent of potential turbine layout for the proposed Coomnagappul Wind Farm plus a 500m buffer extending away from the boundary of the potential development area as per SNH 2017 (see Figure 4).

This suggests that a greater area is surveyed than outlined in Chapter 10 – as 500m beyond the development boundary would be greater than 500m radius buffer from the proposed Turbine location. However, neither was actually achieved.

The scale on Figure 6 shows a 500m scale which shows that the viewshed does not extend 500m past the proposed turbine location for Turbines 1, Turbine 2 and Turbine 10. As the flight data from this Vantage Point survey is the key input into the Collision Risk Model, it raises questions as to the integrity of any modelling based on this data which is incomplete.



The Survey Hours

From Chapter 10

- VP watches undertaken over 3.5 years at five VPs (winter 19/20, winter 20/21, winter 21/22, summer 2019, summer 2020, summer 2021, and summer 2022)

From Appendix 10.1 of the EAR - 2.3.1.2 Flight Data Recording

A total of 5 vantage points were surveyed and each one was watched for a total of six hours per month. This resulted in a total of 30 survey hours per month and 180 survey hours in total over an entire season. The watches were divided into three-hour periods for each individual watch. A minimum of 36 hours of survey effort was achieved at each VP per survey season, in line with SNH (2017). Further detailed vantage point survey information can be found in Appendix 4.

This is disingenuous as it implies that there were 5 vantage points in operation over the period of the survey and it implies, in the way it is written that it was 180 survey hours over the entire seasons surveyed. I reviewed the data provided in Appendix 4. This showed that there were no observations from VP5 until Winter 20/21 and there were no observations from VP4 during Breeding 2019

Despite what is said in the document, the only period where each VP was watched for 6 hours per month was during Summer 2022 June to September.

Vantage Point	Breeding 2019	Winter 2019/20	Breeding 2020	Winter 2020/21	Breeding 2021	Winter 2021/22	Breeding 2022
1	36	36	36	36	36	36	36
2	36	36	36	36	36	36	36
3	36	36	36	36	36	36	36
4**		36	72	36	36	36	36
5						36	36
Total	108	144	180	144	144	180	180

**VP4 was positioned in three separate locations.

The Applicant says in Appendix 10 that VP5 was implemented "To maximise coverage of the west/south-western corner of the proposed development site, a fifth VP was added (VP5) at the beginning of season 6 (winter 2021/22)." The question arises as to why this wasn't done from the start?

In addition, per table 6 in Appendix 10.1 Ornithology Report - VP4 was moved 3 times – it is not clear where VP4 was located during Winter 2019/2020. It was then moved and in situ for 3 breeding seasons for Summer 2020, Winter 2020/2021 and Summer 2021 – it was then moved to its current location for Winter 2021/2022 and Summer 2022. This does not inspire confidence in relation to the coverage of the survey. According to the Applicant, this was due to the changes in the proposed location of Turbines – however, per -SNH, Vantage Point locations should have been selected to survey the maximum extent of potential turbine layout rather than changing locations of Vantage Points to reflect changes in proposed Turbine location.

NB I subsequently discovered that the flight data from only 76% of the observations was input into the Collision Risk Model. Only flight data from 828 hours of the total survey effort of 1080 hours was used

3.8.3 Area of Flight Activity Survey Information is collected during timed watches from strategic vantage points (VPs). This should cover the defined survey area encompassing the proposed turbine envelope if known, or the maximum extent of potential turbine layouts. This should extend to 500m beyond the outermost proposed turbines to deal with inaccuracies of position for flight line observations. This will also reduce the risk of failing to record birds that use the wind farm area only occasionally.

While the rationale used was that proposed turbine location changed, the viewshed should have been restated. Again, SNH guidance is very clear

3.8.2.2 Terrain Some areas may be hidden from view due to terrain and/or vegetation. Observers should re-use the exact VP location in successive watches as small changes in VP location can produce significantly different visible areas. Changing the VP location complicates collision risk analysis and assumptions cannot be made that viewshed (the view visible from the VP location) areas will be the same. It is therefore critical that the spatial coordinates of VP positions are measured to the highest level of accuracy possible using a GPS. The VP locations and associated viewsheds referred to in the environmental statement must be those used in the field.

Summary Chapter 10, overstates the extent of the surveying actually undertaken when compared with the Appendix 10.1, which similarly overstates the observations that were input into the Collision Risk Model,

Some unusual features in the observations recorded. These include but are not limited to :-

- Only a few minutes between a watch ending in one VP and a watch starting in another VP – example below where 10 minutes is allowed to travel between VP 3 to 4, a distance, as the crow flies, of 2.5km (based on Google map ruler and co-ordinates provided) and between VP 2 and VP 3 – a distance of almost 2km as the crow flies. Sample below highlighted in Breeding 2020 extract – but there are several instances of similar in the data provided in Appendix 10.1

VP	Date	Observer	Start Time	Finish Time	Length of VP watch (hours)	Weather
1	23/04/2020	ED	10:15	11:15	3	Warm, hazy sunshine, northeast wind f2, temp 14oC, visibility excellent
1	24/04/2020	ED	11:50	14:50	3	Hazy sunshine, northeast wind f2, temp 14oC, visibility excellent
2	25/04/2020	ED	15:00	18:00	3	Hazy sunshine, southeast wind f3, temp 18oC, visibility excellent
2	26/04/2020	ED	08:35	11:35	3	Calm and misty, southwest wind f1, temp 12oC, visibility very good
3	26/04/2020	ED	13:40	16:40	3	Calm conditions, hazy sunshine, northeast wind f2, temp 12oC, visibility excellent
4	23/04/2020	ED	11:20	16:20	3	Calm, misty conditions, southwest wind f1, temp 12oC, visibility very good
4	24/04/2020	ED	08:45	11:45	3	Hazy sunshine, calm conditions, northeast wind f2, temp 14oC, visibility excellent
4	24/04/2020	ED	14:55	17:55	3	Hazy sunshine, light winds, northeast wind f2, temp 14oC, visibility excellent
					3	Overcast but mild, east wind f2, temp 13oC, visibility excellent

Malachy Webb and Partners

Appendix 4

Vantage Point Survey Summary

VP	Date	Observer	Start Time	Finish Time	Length of VP watch (hours)	Weather
4	24/04/2020	ED	08:45	17:55	3	Hazy sunshine and warm, Wind E f2, temp 17oC, visibility excellent

- Multiple examples of two watches at the same location with no break – suggesting a 6 hour non stop watch – which is not in line with the guidance – Sample below highlighted in Winter 2020/2021

Vantage Point Survey Summary

Winter 2020/21						
VP	Date	Observer	Start Time	Finish Time	Length of VP watch (hours)	Weather
1	01/12/2020	ED	10.15	11.15	1	Misty, calm conditions, northwest wind f2, temp 8oC, visibility moderate
1	02/12/2020	ED	12.55	15.55	3	Calm, some drizzle/mist and sunny spells, west wind f2, temp 6oC, visibility very good
2	03/12/2020	ED	12.35	15.35	3	Cold with wintry showers, wind increasing, northwest wind f4, temp 2oC
2	04/12/2020	ED	09.10	12.10	3	Calm, overcast, and misty, north wind f4, temp 1oC, visibility good
3	03/12/2020	ED	09.25	12.25	3	Cold, misty/drizzle conditions, northwest wind f2, temp 3oC, visibility moderate
3	04/12/2020	ED	12.30	15.30	3	Cold and overcast with wintry showers, north wind f5, temp 1oC
4	01/12/2020	ED	13.20	16.20	3	Calm and misty, northwest wind f2, temp 8oC, visibility good
4	02/12/2020	ED	09.50	12.50	3	Calm, westerly wind f1, temp 6oC, visibility excellent
1	22/01/2021	EOC	08.30	11.30	3	Light snow underfoot. West wind f1, temp 0oC, visibility good
1	22/01/2021	EOC	11.30	14.30	3	Light snow under foot and light snow falling until 13.20. West wind f1, temp 0oC, visibility poor.
2	20/01/2021	EOC	08.30	11.30	3	A dry day, westerly wind f1, temp 10oC, visibility good
2	20/01/2021	EOC	12.00	15.00	3	Dry day, westerly wind f3, temp 10oC, visibility good
3	21/01/2021	EOC	08.30	11.30	3	Rainy day, southwest wind f5, temp 8oC, visibility poor
3	21/01/2021	EOC	12.30	15.30	3	Rainy day, southwest wind f5, temp 8oC, visibility poor
4	20/01/2021	EOC	08.30	11.30	3	Raining to begin and cleared up throughout the morning. Southwest wind f5, temp 1oC, visibility poor
4	20/01/2021	EOC	12.30	15.30	3	Raining Southwest wind f5, temp 2oC, visibility poor
1	19/01/2021	EOC	08.30	11.30	3	Cloudy day, southwest wind f5, temp 3oC, visibility moderate
1	19/01/2021	EOC	12.00	15.00	3	Cloudy day, southwest wind f5, temp 3oC, visibility moderate
2	09/02/2021	EOC	09.30	12.30	3	Dry and overcast, southwest wind f3, temp 7oC, visibility moderate
3	09/02/2021	EOC	12.00	15.00	3	Dry and overcast, southwest wind f3, temp 7oC, visibility moderate
3	15/02/2021	EOC	09.30	12.30	3	Good, southwest wind f2, temp 3oC, visibility good
3	15/02/2021	EOC	12.30	15.30	3	Good, southwest wind f2, temp 3oC, visibility good

In the SNH guidance on Vantage Point

3.8.7 Vantage Point Watch Durations

There should be suitable breaks of at least 30 minutes between watches to minimise observer fatigue. Watches can be suspended and then resumed to take account of changes in visibility, e.g. fluctuations in the cloud base, passing rain shower or for the observer to rest. A combination of more than 9 hours VP watches should not be carried out by the same observer(s) over the course of a single 24 hour period. The time taken to move between VP locations must be factored into the survey schedule so that there is sufficient time for surveyors to move around the site without risking disturbance impacts on birds or if a small team of surveyors is involved to other VPs being watched. Similarly, there should be a short 'settling in' period of approximately 10 minutes at each VP, before watches start to allow surveyor familiarisation and ensure any disturbance from observers moving around the site has passed.

The above sample of observations also show another point which is relevant – highlighted in blue. A key requirement per the survey guidance is that watches are undertaken in conditions of good visibility and that where visibility is poor, that the watch is suspended – as demonstrated in the Appendix within the SNH Guidance – so the hours during that poor visibility period are not to be included.

From the SNH guidance

3.8.5 Vantage Point Watch Timings

...Watches should be taken under conditions of good ground visibility (>2km) and can be undertaken on showery days providing showers are not too frequent or prolonged. The cloud base should be high enough to allow observation of the collision risk volume. Ideally such observations should be made in a range of wind conditions.

As highlighted above [redacted] as an example on the extract of observations (Appendix 4 within Appendix 10.1), there were a number of observation hours undertaken in conditions of poor visibility. Watches should have been suspended or these watches discontinued as hours surveyed – and that did not happen. A review of the observation data shows that over 13% of the watches were conducted in visibility which was described by the Observer as poor. If the observations where visibility is

described as “moderate” are also included, over 25% of the observations have limitations in regard to visibility.

Given that the purpose of the survey is to identify the number and flight heights of birds that could be impacted by the presence of turbines, this is a concern and again does not follow the guidance and raises questions about the actual extent of the surveying and its reliability as an input into the Collision Risk Model.

Timing of Survey

SNH (2017) notes that all VP watches for flight survey

Watches should be tailored to the ecology of the target bird species involved. This should provide a spread over the full daylight period available (from official local sunrise to sunset times) which will vary depending on the time of year. Watches should be spread across all calendar months when the species is present or likely to be so. The watches should be stratified according to the ecology of the target species present and should give a representative sample of site use.

I took data from sunrise.maplogs.com for Ballymacarby Co. Waterford. This provides the time of Sunrise and Sunset for historic periods. I calculated the start and end time of each watch from Sunrise in minutes. I then mapped the data, with Sunrise set to 0, the start of the watch as the time in minutes from sunrise on that particular date, the end time of the watch as the time in minutes from sunrise for that particular date and the sunset time in minutes from sunrise. As can be clearly seen from the graph below – which is based on the watch dates and times provided in Appendix 10.1 – Watches were not spread over the full daylight period. Where watches started before noon, they started on average two and a half hours after sunrise. Only during the winter periods was there observation over full daylight hours.

Interestingly, observations of hen harriers were 50% greater during the 2021 breeding season compared with other breeding seasons – the only period where observations were spread more evenly through the daylight period.

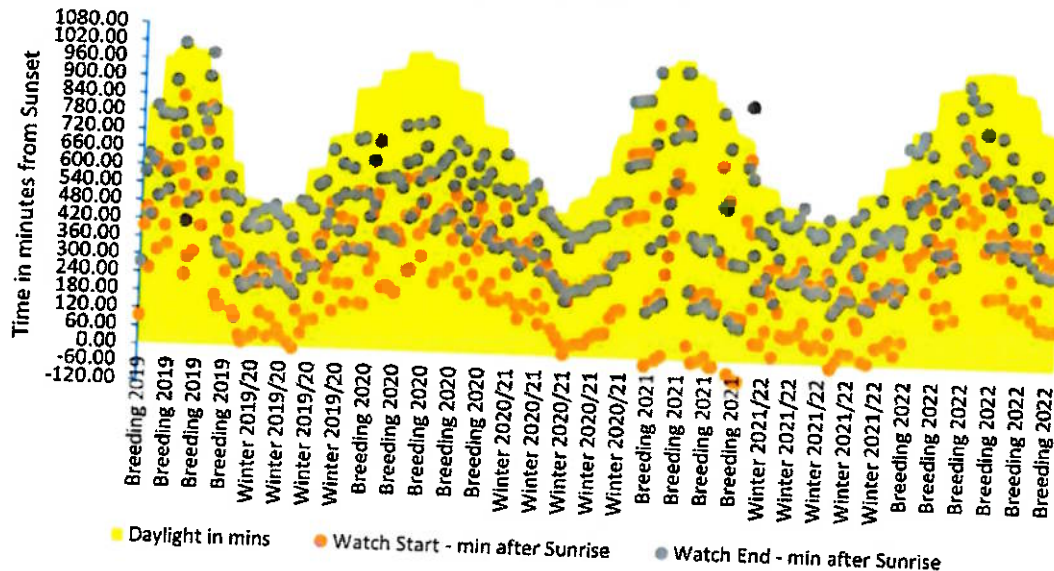
There were a number of observations which had a start time of before Sunrise or an end time after sunset. As an example, see table below

Observations where Start time was more than an hour before Sunrise or more than an hour after Sunset

Observation date	Start time of observation	Sunrise Time
13/09/2021	6:00:00 am	7:03:17 am
15/09/2021	6:00:00 am	7:06:34 am
16/09/2021	6:00:00 am	7:08:13 am

Observation date	End Time of observation	Sunset Time
07/08/2019	10:30 pm	9:11pm
19/09/2021	9:30 pm	7:33pm

Observation Start(orange) and End(Grey) mapped against Daylight hours - 0 = Sunrise. Watches that started before Sunrise were set to 0



Summary of issues identified between Chapter 10 and Appendix 10.1 re Vantage Point Survey

The Applicant states in numerous places that the SNH(2017) guidance *Recommended bird survey methods to inform impact assessment of onshore windfarms (2017)* has been followed. This is the current best practice approach as evidenced by the Chartered Institute of Ecology and Environmental Management which includes this as part of a suite of best practice guidance for designing and carrying out bird surveys and assessments. While there is no specific Irish guidance, the SNH(2017) is widely accepted as the standard as evidenced by its reference in almost every Windfarm Planning application.

Given that the purpose of the Vantage point survey is to identify the species and flight patterns of birds that could be impacted by the presence of Wind Turbines and this data is the primary input into the Collision Risk Model, the shortcomings that I have identified :-

- Viewshed of 500m outside proposed location of each Turbine not achieved
- Movement of Vantage point 4 multiple times – no indication where the VP was previously and in any event, only the last 72 hours of observations brought into the CRM
- Timing of VP watches – in only one of the breeding seasons, were some of the watches started within 2 hours of sunrise which is a period when some species are most active. Interestingly, the only season where daylight hours were covered as per SNH Guidance, which was Breeding 2021, had 50% more observations of hen harriers.
- Maintaining and recording VP hours when visibility was poor when watches should have been paused or stopped
- Recording of VP hours where observers were able to move from one VP to another several KM away within a couple of minutes

This must call into question the integrity, completeness and reliability of the data which is the primary input into the Collision Risk Model.

High Level Review of Appendix 10.2 the Collision Risk Model with reference to data input from Appendix 10.1

I read Appendix 10.2 and identified the following :-

While the summary in Chapter 10 and Appendix 10.1 focussed on the extent of the survey effort, the hours, the additional VP5 added to ensure coverage of the South Western corner etc, the data actually used in the Collision Risk Model is only for a subset of that period – in effect, 828 hours of the total survey effort of 1080 hours was used

Appendix 10.2 states that

The data for this assessment was obtained from vantage point (VP) surveys carried out on site at Coomnagappul from April 2019 to September 2022, inclusive, at three fixed vantage point locations, and from October 2021 to September 2022, inclusive, at a fourth fixed vantage point.

So only observations from VP1, VP2, VP3, and from October 2021 from VP4 are included. Earlier VP4 observations are excluded. This is at odds with the summary information in Chapter 10 which excludes Winter 2019/202 from the description and in Appendix 10.1, which infers that all the flight survey data will be used in the Collision Risk Model.

All observations from VP5 are excluded. In terms of viewshed coverage, the comparison of the two maps in relation to viewshed, amply demonstrates the difference in coverage. The Map on the left is from Appendix 10.1 demonstrating the extent of the area surveyed (not withstanding its failure to cover the 500m buffer zone), the Map on the right is from Appendix 10.2, covering the viewpoints of the observational data that was actually considered for input into the model. There is restricted flight impact data of all the turbines on the Western part of the site. Appendix 10.2 does not indicate in percentage terms – defined by SNH(2017) – how much of the flight survey area was actually covered when the subset of Vantage Points was used. However, its clear that while in Appendix 10.1, there were issues around the viewshed extending to the 500m boundary for proposed Turbine 1, 2, and 10, the Map from the Appendix 10.2 shows that there was not adequate data relating to Turbine 3 either. Therefore, the data associated with 40% of the proposed locations is limited and not adhering to the guidelines, or to what was said in the text.

This should cover the defined survey area encompassing the proposed turbine envelope if known, or the maximum extent of potential turbine layouts. This should extend to 500m beyond the outermost proposed turbines to deal with inaccuracies of position for flight line observations

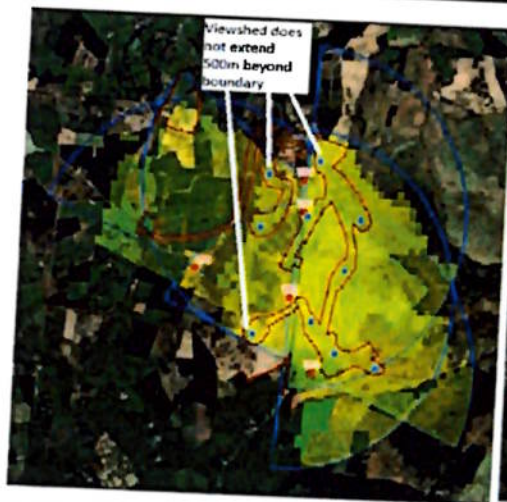


Figure 6. Vantage Point location and corresponding viewsheds

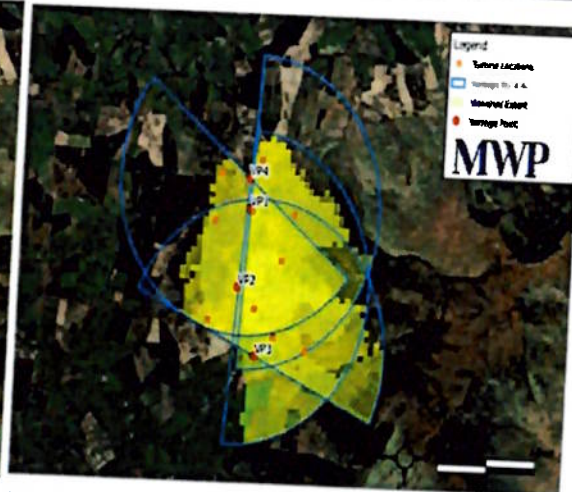


Figure 7. Vantage point sites and viewshed extents at proposed Coomnagappul Wind Farm site

It also seems strange that it was acceptable to use 1 years data from VP4 from its last placement but that the 18 months data from the previous placement which covered 2 breeding seasons and one winter season was excluded from the Collision Risk Model dataset. Had the GPS co-ordinates from these earlier locations been recorded, this data could have been included and would have theoretically presented a more complete input.

Both Chapter 10 and Appendix 10.1 cover in detail the length of time spent in observation and the vantage points. The table below summarises the actual position

Survey Hours	Breeding 2019	Winter 2019/20	Breeding 2020	Winter 2020/21	Breeding 2021	Winter 2021/22	Breeding 2022	TOTAL
Total hours watch inferred in Chapter 10	180	180	180	180	180	180	180	1,260
Total Hours watch from Appendix 10.1 – observations	108	144	180	144	144	180	180	1080
Total hours watch included in CRM model								
Total	108	108	108	108	108	144	144	828

Given the inaccuracies and, in my view, cavalier approach to data already identified, I decided to look in further detail, specifically at observations in Appendix 10.1 for Golden Plover to determine if, at least, this subset of data had been captured fully.

Table 3. Bird-seconds spent at Potential Collision Height (20 - 200 metres)

Species	Total bird-secs at PCH over entire survey period	Bird-seconds in flight at PCH (20 – 200 m)								
		2019/2020			2020/2021			2021/2022		
		Breeding	Winter	Total	Breeding	Winter	Total	Breeding	Winter	Total
Buzzard	2,360	815	455	1,270	195	225	420	110	65	175
Golden plover	76,270	0	0	0	0	75,300	75,300	0	970	970
Great black-backed gull	25	0	0	0	25	0	25	0	0	0
Hen harrier	130	0	0	0	0	0	0	60	0	60
										70

Appendix 10.2 identified that there were 75,300 seconds at potential collision height for Golden Plover identified from the observation set.

However, a review of the subset of observations identified

- There was 87,020 seconds of Golden Plover flight at the PCH compared to 76,270 used in the CRM model.
- 5000 seconds excluded as it was from VP5 – which brings the total to 82,020 seconds
- 4000 seconds from an observation at VP1 on 21/10/2019 were excluded from CRM erroneously it would appear – as all VP1 data was to be included.
- 950 seconds total excluded from VP4 observations on 15/11/2021 and 04/03/2022 which per their own criteria should also have been included.

From Appendix 10.2
Peregrine falcon

Date	VP	Sex	Age	Map Ref	Habitat	Peregrine falcon		Flight Height (m)	Non-flight	Time (sec) in Height Category					
						No. Of Birds	Time of Flight/ Obs.			0-20m	20 - 50m	50- 100m	100- 180m	>180m	
Winter 2019/20															
29/11/2019	4	Unknown	Adult	1	Grassland moorland	1	11.21	Flying	17.18	-	28	-	-	-	-
19/12/2019	3	Unknown	Juvenile	2	Grassland moorland	1	12.01	Flying	30	-	15	-	-	-	-
20/01/2020	2	Unknown	Unknown	3	Improved grassland, Grassland moorland	1	-	Flying	80-100	-	-	-	-	-	-
16/02/2020	3	Unknown	Adult	4	Grassland moorland	1	09.55	Flying	100-250	-	-	35	-	-	-
Summer 2020															
24/04/2020	1	Male	Adult	5	Grassland moorland	1	14.34	Flying	15	-	20	-	-	40	-
Winter 2020/21															
10/10/2020	4	Unknown	Adult	6	Grassland moorland	1	14.40	Flying, mobbing	35	-	-	25	-	-	-
Winter 2021/22															
08/02/2022	2	Female	Adult	7	Grassland moorland	1	13.10	Flying	30	-	-	20	-	-	-
01/03/2022	4	Male	Adult	8	Grassland moorland	1	13.02	Flying, perched	2-150	20	40	30	50	20	-

I then looked at the Snipe figures as this was a low volume. And again, approx. only 84% of the observations were used as an input in the CRM model. From the summary table above of data used in the CRM model, the total seconds for Snipe recorded at PCH, was 43 seconds. So looking at the observation data from Appendix 10.1, and excluding VP4 data from before Oct 2021, and VP5 data, the total actual recorded was 69 seconds. So this means that 62% of the observational data was used.

Snipe

Date	VP	Sex	Age	Map Ref	Habitat	No. of Birds	Time of Flight/ Obs.	Activity	Flight Height (m)	Non-flight	Time (sec) in Height Category					
												0-20m	20-50m	50-100m	100-180m	>180m
Summer 2019																
07/08/2019	1	Unknown	Unknown	1	Improved grassland	1	10.04	Calling, flying	20-30	-	-	11	-	-	-	-
Winter 2019/20																
22/10/2019	1	Unknown	Adult	2	Improved grassland	1	10.09	Flying	80	-	-	-	-	-	-	-
29/11/2019	4	Unknown	Unknown	3	Grassland moorland, heather moorland	1	11.37	Flying	10-12	-	8	-	-	-	-	-
30/11/2019	4	Unknown	Unknown	4	Grassland moorland, heather moorland	1	12.45	Flying (flushed)	2-4	-	9	-	-	-	-	-
Summer 2020																
24/04/2020	4	Unknown	Adult	5	Grassland moorland	1	09.50	Display	15	-	35	-	-	-	-	-
24/04/2020	4	Unknown	Adult	6	Grassland moorland	1	15.25	Display	40	-	25	-	-	-	-	-
25/04/2020	4	Unknown	Adult	7	Grassland moorland	1	13.20	Display	30	-	20	-	-	-	-	-
12/05/2020	4	Unknown	Adult	8	Grassland moorland	1	10.25	Display	20-30	-	35	-	-	-	-	-
15/05/2020	4	Unknown	Adult	9	Rough grassland	1	14.15	On ground	-	300	-	-	-	-	-	-
10/06/2020	4	Unknown	Adult	10	Grassland moorland	1	10.25	Flying	35	-	15	-	-	-	-	-
11/06/2020	4	Unknown	Adult	11	Grassland moorland	1	13.30	Perched, displaying	-	600	-	-	-	-	-	-
12/06/2020	4	Unknown	Adult	12	Grassland moorland	1	-	Perched, displaying	-	150	-	-	-	-	-	-
Winter 2020/21																
09/10/2020	1	Unknown	Unknown	13	Grassland moorland	1	16.30	Flying	5	-	10	-	-	-	-	-
22/01/2021	1	Unknown	Unknown	14	Scrub	1	09.13	Flying	1-2	-	30	-	-	-	-	-
Summer 2021																
27/04/2021	2	Unknown	Unknown	15	Grassland moorland	1	14.01	Flying	80	-	-	-	-	-	-	-
Winter 2021/22																
05/12/2021	3	Unknown	Unknown	16	Grassland moorland	1	10.55	Flying	-	-	-	40	-	-	-	-

Excl as VP4

Unfortunately, I do not have the time to go through all the rest of the data to determine what other errors there are. But of the three that I checked – Golden plover, Peregrine Falcon and Snipe – the data input into the CRM model per Appendix 10.2 does not match the data provided in Appendix 10.1. In all cases, the data input into the model was less than that recorded in the observations – after excluding VP5 data and VP4 data October 2021.

In summary,

- Of the observed data which according to both Chapter 10 and Appendix 10.1, was included in the CRM modelling, 23% was excluded from the model due to the exclusion of VP5 and including VP4 data from Oct 2021 – discounting the two previous years of data.
- Of the species checked, 13%, 38% and 54% of the flight time in seconds at the Potential Collision Height of the reduced data set data was excluded for the three species.

This does not inspire confidence in the robustness of the inputs and therefore how can the output of the CRM model be deemed reliable.

In Appendix 10.2, another key element in the Collision Risk Model is the avoidance rate.

4.3.1 Collision Rates with Application of Specific Avoidance Rates The final phase of the collision risk assessment is to apply known avoidance rates to the predicted collision rates from Table 9, above, to correct for a bird's ability to identify and move around turbines. An avoidance rate of between 95% and 99.5% was used as recommended by SNH (2018) and Furness (2019) for all species apart from golden plover where an avoidance rate of 99.8% was applied.

SNH(2018) guidance advises that a 98% avoidance rate should be applied to any species not specifically identified in the table. The applicant uses a 99.8% and cites Gittings, T(2020). The bibliography shows that the reference is to a submission

Gittings, T. (2020). Ummeras Wind Farm Collision Risk Model (Report Number: 2008-F1, Revision 6). Appendix 6- 4 in Volume III – Appendices (Part 1 of 2) of Ummeras Wind Farm Environmental Impact Assessment Report (Planning Application Number at Kildare County Council: 2184)

This is part of the ornithological study included in the Ummeras Wind Farm Planning application conducted by Mr Gettings on behalf of the Applicant. In determining this avoidance rate, Mr Gettings reviewed some post construction reporting for 3 windfarms in the UK and came to this avoidance rate. This does not appear to be a published peer reviewed paper and I could find no reference to it in Google Scholar. It therefore does not seem appropriate that the research conducted by Scottish National Heritage should be discounted. This avoidance rate of 99.8% was also not accepted by the APB Inspector for Ummeras Wind Farm.

Unfortunately, I have not been in a position to review the rest of the data or the calculation but the discrepancies in relation to what is said in the Chapter 10 summary, then in Appendix 10.1 versus what is in Appendix 10.2, does not inspire confidence.

When all the items are taken together in relation to the Flight Survey data, there is, what can only be described, as a cavalier approach to data and its integrity and the approach cannot be described as robust or in line with best practice. Given the importance of the Collision risk Model output as determining the impact that the proposed windfarm will have on the birdlife in the area, it is hard to see how this result can be relied upon in any way.

Distribution and Abundance Survey

Reading Chapter 10 and the associated Appendix 10.1, there are a number of areas of concern where again, what is said in the Summary Chapter 10 is not aligned with the detail provided in Appendix 10.1. The introduction in Chapter 10 of the EAR states :-

Bird surveys of the study area following SNH (2017) guidance were carried out during the winters of 2019/2020, 2020/2021 and 2021/2022, as well as summers of 2019, 2020, 2021 and 2022 by Malachy Walsh and Partners, see Appendix 10.1 and 10.2, Volume III for full details.

It is also worth noting that per SNH(2017), VP Watches for flight data recording cannot count towards observation time during a distribution survey : *"the two methods are not consistent in design or objectives."*

Area Surveyed

In terms of identifying bird distribution, transect surveys were used.

From Appendix 10.1 2.3.2.1 Transect Surveys

The overall aim of the transect surveys was to assess general bird distribution throughout the site and gather data on bird usage of the site.....All bird species seen or heard, typically within 100m of the transect route, were recorded, although the topography of the landscape often allowed for the detection of birds at greater distances. Details on each survey carried out including survey date, time and weather conditions can be found in Appendix 8.

From Chapter 10 Non Technical Summary

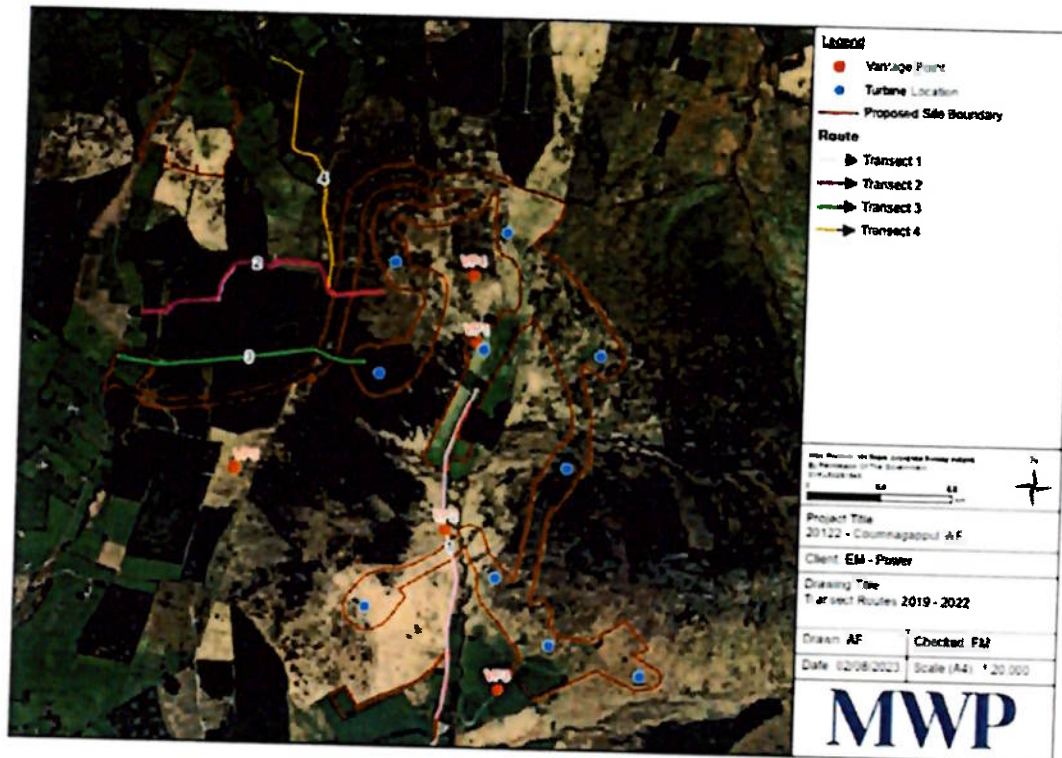
Transect Route 1 followed an existing private access track which runs through the middle of the site from south to north. During the summer 2021 season, additional transect routes (2, 3 and 4) were added in the western area of the site to capture the relocation of proposed turbines. The habitat in this area differed slightly from the site's predominantly occurring habitats (mixture of conifer forestry and agricultural grassland)..

Transect Route 1 is a farm track, in the lowland portion of the proposed development, in the valley. Transect 2,3 and 4 in the western area are in a mixture of conifer and agri grassland. It is difficult to understand how a habitat of conifer and agricultural grassland could be identified as differing only "slightly" from the predominantly occurring habitats of wet heath (57.99ha) and dry heath (51.83) on the site. This paragraph is written in a potentially misleading way and could infer that the site's predominantly occurring habitats was conifer forestry and agricultural grassland not heath.

It seems odd that given 6 of the 10 turbines proposed are on the eastern boundary of the site and yet the transect routes do not engage with this area at all – particularly given the stated aim of assessing general bird distribution throughout the site. Based on the maps, all the turbines are actually located on heath, yet the transect surveys are based in grassland and conifer areas and through agricultural land. Only the early part of Transept No 1 appears to within 100m of heath.

At the very least, this would suggest that the likelihood of encountering birds which will be impacted by the development on the heath will be minimised

Figure 7. Transect survey routes



The use of establishing a distribution survey by a 100m overview from the transect route is a significant departure from the SNH (2017) guidance which identifies the survey area for a breeding and distribution survey area of 500m beyond the planning boundary.

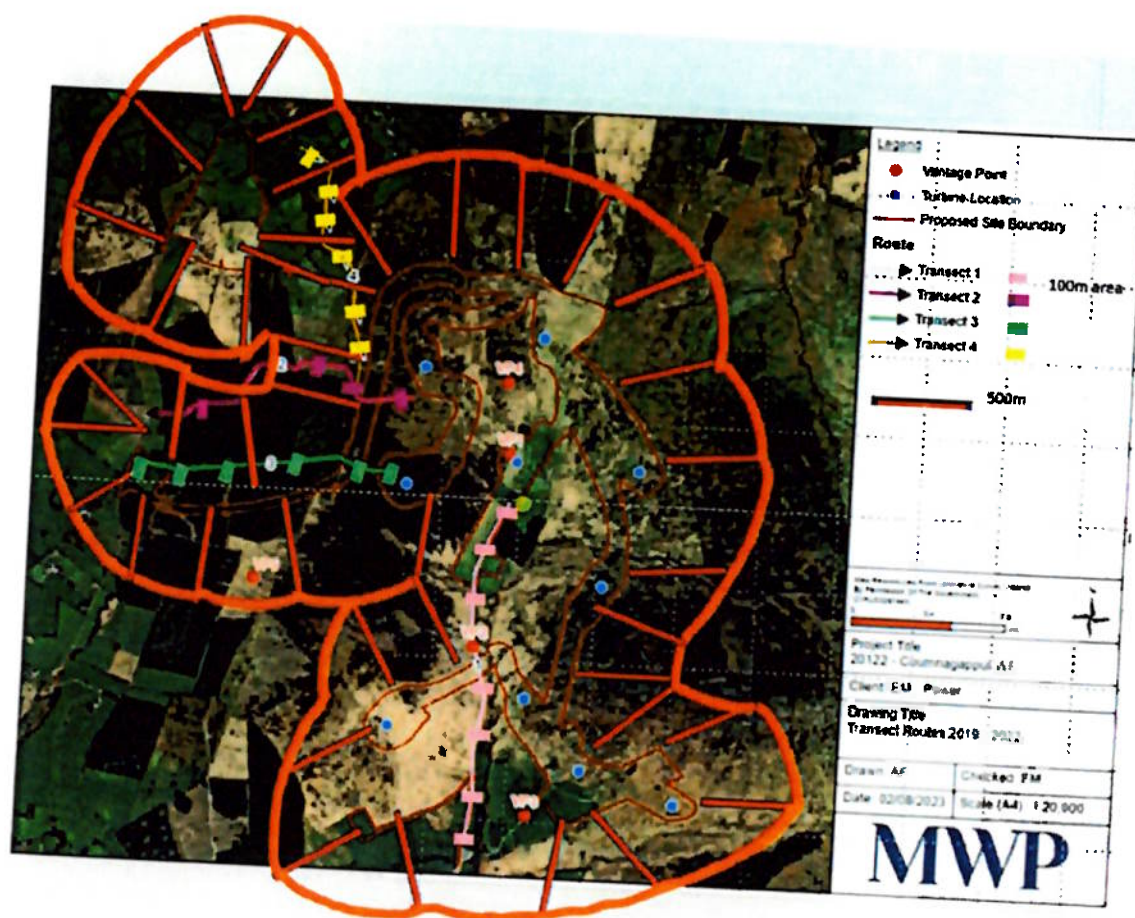
From SNH(2017)

3.3 Area of Survey Required

The survey area and design must adequately cover the entire development area, i.e. the largest possible layout, all the alternative layouts and ancillary structures and works. This includes access tracks; borrow pits, electrical substations and grid connections (both underground and overhead). Potential collision risk, habitat loss and displacement could affect birds out with the proposal site. Therefore, the main breeding and wintering bird survey areas should extend at least 500m beyond the development/planning application boundary. For access tracks and grid connections, the survey area should be 500m either side of the proposed limits of variation of the route. However, depending on the species using the area, there may be a need for further species or species group-specific survey to establish nest, roost or display sites up to 6km from the proposed development site (See details in Annex 1, Table 1.6).

Interestingly, the Comeragh Special Area of Conservation abuts this site on the Eastern Boundary and is – according to the documentation – 740m from the Turbine location. It is not clear whether or not the Turbine hub diameter of 104m has been factored into this distance calculation.

The map below which is crude but reasonably accurate – and I have tried to demonstrate the difference between the approach adopted and the recommended one. Using the scale provided, I have overlain the minimum area recommended for survey, which is 500m from the boundary – red curves and lines measuring 500m. SNH (2017) requires additional distance for some species. I have also shown blocks on the transect route representing 100m which is the area surveyed. I believe this graphically illustrates the shortcoming in the abundance and distribution survey.



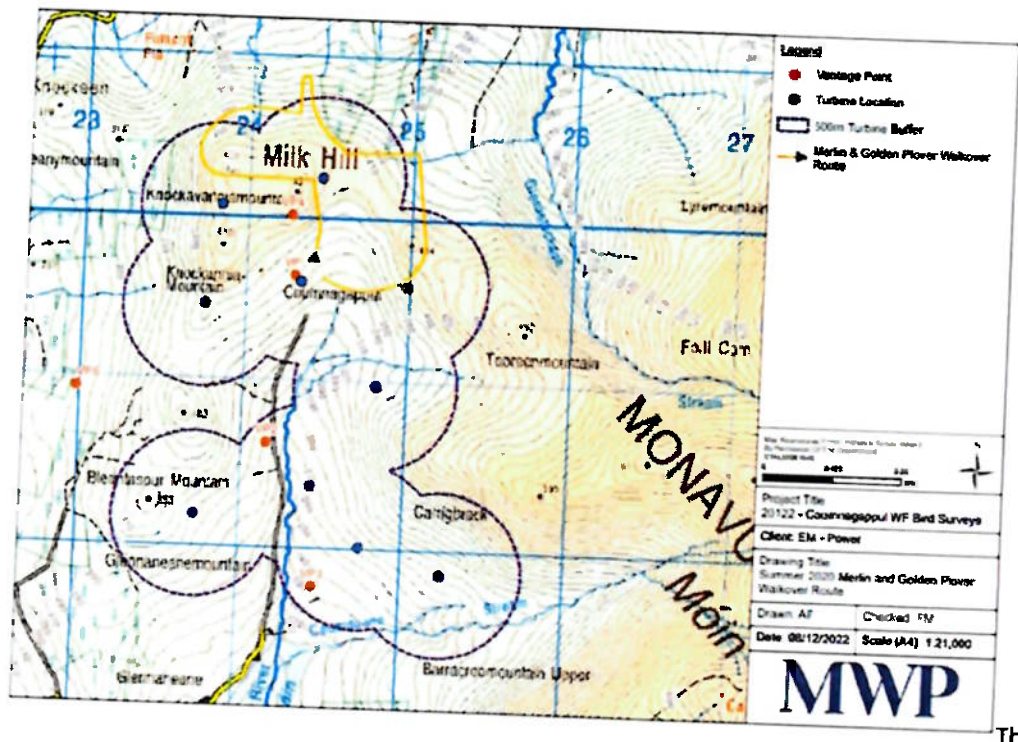
Type of survey for Moorland Breeding Birds

In addition to the transept as a general overview of birds in a very specific habitat, Appendix 10.1 advised that a walkover was conducted to establish the presence of Merlin, Golden Plover, Red Grouse

This walkover route show below was identified for Merlin, Golden Plover and Red Grouse. This is primarily within the northern part of the site. The route was followed on the 9th June 2020 and 17th July 2020 to survey for Merlin, Golden Plover and Red Grouse. The route was repeated on 2nd June 2022 and 5th July 2022 to survey for Breeding Red Grouse.

There are a number of issues with this. Red Grouse was heard as a secondary observation during the Flight survey calling on two occasions to the east of VP2 in the early breeding season of April & June 2021. Yet the walkover route was almost as far away as possible from this location. Furthermore, in relation to the timing of these surveys - as was noted in both Chapter 10 and Appendix 10.1

It is acknowledged that the timing of the red grouse surveys undertaken in 2020 and 2022 resulted in the start of the red grouse breeding season (April to early May) to be missed. Due to these survey limitations, a precautionary approach should be taken with regard to the 2020 and 2022 survey findings.



The

They further note that extensive surveys for Red Grouse were carried out in April and May of 2023. They do not provide any further information in terms of methodology or results.

Again, this is not the recommended technique per SNH(2017). In the approach adopted, Moorland Breeding Bird and Raptor were surveyed together. SNH(2017) provides very different guidance for the surveying of these. The SNH(2017) guidance in relation to the survey methodology required for Moorland Breeding Birds would therefore apply to **Lapwing, Golden Plover, Snipe and Red Grouse** which were identified as Target species in Chapter 10.

The SNH(2017) guidance states:-

3.7.1 Moorland breeding birds The survey method outlined is suitable for many moorland and open country species including, waders, skuas, gulls, **red grouse and some wildfowl species**. We generally do not recommend survey of moorland passerines. In previous guidance we recommended the Brown & Shepherd (1993) method but, based on recommendations set out in Calladine et al. (2009), we now require an adapted **Brown & Shepherd method with four survey visits at least seven days apart**. These should cover the whole breeding season between mid-April and early July, and be done between 8:30 hours and 18:00 hours. They should be carried out in a wind of Beaufort force 4 or less, and in dry weather. Timing of breeding varies between species and geographically across Scotland and this should be borne in mind when planning survey. **Mistimed survey visits will fail to record many birds and will not be of an acceptable standard**. All survey visits should be undertaken in the same season; splitting survey visits between years is not acceptable (e.g. first visit in year 1, second visit in year 2).

The Brown and Shepherd methodology is based on a constant search method involving spending 25 minutes in each 500 m x 500 m quadrant within the breeding bird survey area which is defined as being 500m beyond the boundary of the proposed development

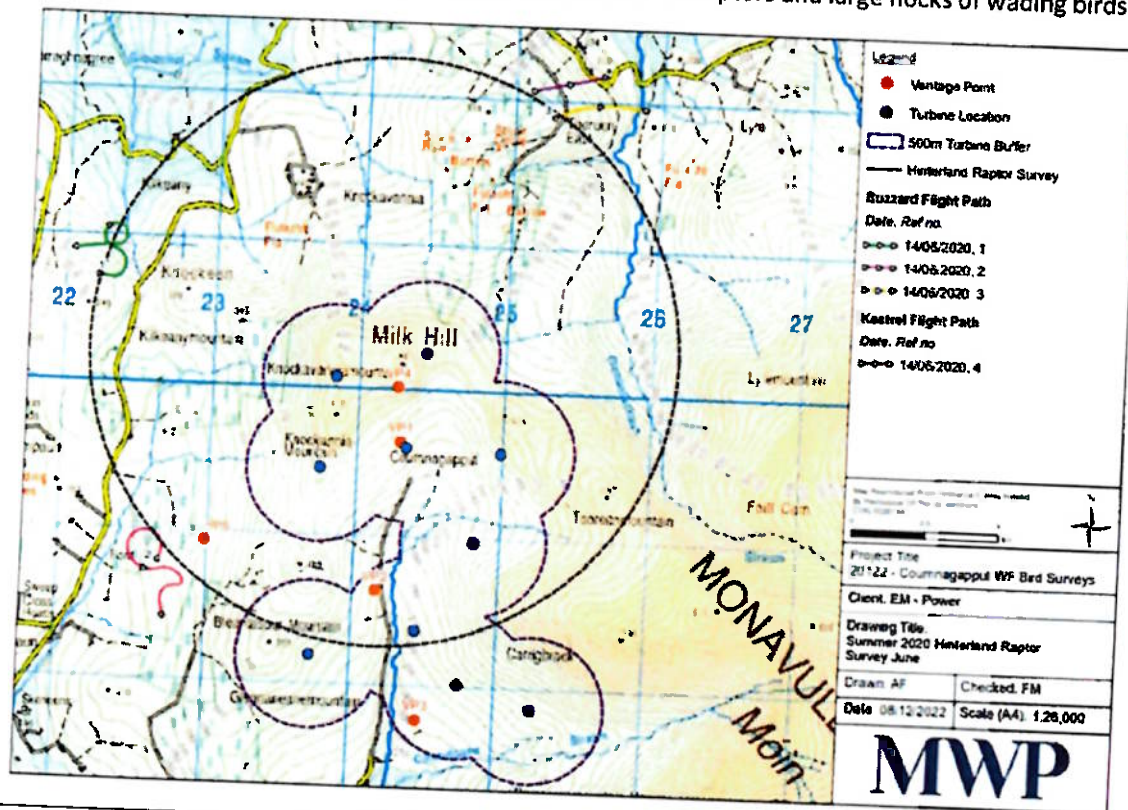
According to **The Chartered Institute of Ecology and Environmental Management CEEIM**

Brown, A. F. and Shepherd, K. B. (1993) *A method for censusing upland breeding waders*. Bird Study, 40, pp. 189-195 provides a detailed methodology for undertaking upland breeding moorland wader surveys. It is cited as best practice survey methodology for this group of birds within UK bird and windfarm guidance.

This is very different and much more comprehensive approach to the walkover methodology as outlined in Appendix 10.1

Raptor Survey

A hinterland survey was used to determine the presence of raptors and large flocks of wading birds



Per Appendix 10.1 Accessible roads within this area were driven stopping intermittently where suitable views for activity could be observed.

There is one road to the left of the area. There are two smaller tracks, one to the south is a farm track and one to the north east of the site, is a narrow track. It is not clear from Appendix 10.1 what roads were actually driven or what that vantage area was. This was done for 6 hours on two dates during summer 14th June 2020 and 19th July 2020. Both surveys were commenced approx. 4 hours after sunrise.

As can be clearly seen from the map, the area around the three turbines to the south was completely excluded and interestingly VP3 was where most of the observations of Hen Harriers were seen during the flight survey.

The Report identified **Peregrine Falcon, Hen Harrier and Merlins** as target Species. The SNH(2017) guidance makes additional requirements when Raptors are among the target species and requires that the survey be conducted 2km beyond the boundary of the proposed location.

According to SNH(2017), the survey should be undertaken over 2 years, over the breeding season for Peregrine and Merlin and all year round for Hen Harrier. So the actual surveying effort falls significantly short of this.

3.7.2 Raptors and short-eared owls

Recommended survey techniques are described in Hardey et al., 2009. The Area of Interest will exceed the standard 500m buffer to take account of wide ranging birds. Species-specific distances are given in Annex 1 Table 1.6.It is also important to note that areas without breeding pairs can be used by immature and non-breeding birds. These are important in supporting the wider population as they will include birds that will breed in future. Several raptor species, especially red kite, white-tailed eagle and hen harriers, form communal roosts mostly outwith the breeding season. Any roost sites within 2km of a proposed wind farm site should be identified.

Annex 1 Table 1.6 from the SNH Guidance identifies

Table 1.6 Non VP survey summary for most regularly encountered species or species groups

Species	Survey Period	Distance outwith proposal site within which data should be collected	Notes
Red-throated diver	Breeding	Within 1km radius	Occupied water bodies. Use of lochs as small as 15m long. Assess non-breeding birds present. Two years' survey is required unless shorter survey period has been justified.
Black-throated diver	Breeding	Within 1km radius	Occupied water bodies. Use of lochs as small as 100m long. Assess non-breeding birds present. Two years' survey is required unless shorter survey period has been justified.
Golden eagle	Breeding	Within 6km radius for breeding sites. Within 2km for roost sites.	Breeding territories. Two years' survey is required unless shorter survey period has been justified.
White-tailed eagle	All year	Within 6km radius for breeding sites. Within 2km for roost sites.	Breeding territories & communal roosts. Two years' survey is required unless shorter survey period has been justified.
Peregrine	Breeding	Within 2km radius	Breeding territories. Two years' survey is required unless shorter survey period has been justified.
Merlin	Breeding	Within 2km radius	Breeding territories. Two years' survey is required unless shorter survey period has been justified.
Hen harrier	All year	Within 2km radius for breeding sites and for roost sites.	Breeding territories & communal roosts. Two years' survey is required unless shorter survey period has been justified.
Red kite	All year	Within 2km radius for breeding sites and roost sites.	Breeding territories & communal roosts. Two years' survey is required unless shorter survey period has been justified.

Following the SNH(2017) guidance meant that :-

- The abundance and distribution survey should take account of the fact that Raptors were on the Target species list and be surveyed accordingly.
- The zone of interest should be extended to 2 km beyond the boundary of the proposed development
- The survey period is all year round for Hen Harrier and the breeding period for peregrine and Merlin. Two years survey effort is required. The form of survey per Hardy is short Vantage Point watches.

Conclusion

The breeding and abundance survey has not been conducted in accordance with the SNH (2017) guidelines. While there is no specific ornithological guidance for Ireland, the applicant stated that this was the SNH(2017) methodology followed.

In particular, the use of a walkover survey in the north of the proposed site to identify Golden Plover, Merlin or Red Grouse is outside the guidelines. As noted in both Chapter 10 and Appendix 10.1, the results of the Red Grouse survey undertaken – which was extremely limited – need to be treated with caution.

Per the SNH guidance, a separate survey should have been conducted to identify the abundance and breeding of moorland breeding birds, the survey methodology as outlined in Brown and Shephard should have been used and the area surveyed should have extended 500m beyond the proposed development site, with 4 visits are required per breeding season.

In order to survey raptors – Merlin, Hen Harriers and Peregrine Falcons, per the SNH(2017) guidance, the recommended zone of interest should be extended from 500m beyond the proposed site boundary to 2km. This would indicate that the Comeragh Special Area of Conservation should have been included in the survey.

University College Cork (Wilson et al. 2015), actually suggest that the Breeding Raptor Survey area be extended to 5km from the wind farm site boundary rather than the 2km given by SNH (2017), in order to account for foraging distance recorded for hen harrier in Ireland. Given that Hen Harriers were recorded in the Flight Survey, including juvenile birds, the use of a drive around survey seems very inadequate, unless of course, you didn't want to find Hen harriers.

The SNH is also very clear that the guidance must be followed unless there is a very strong argument to use some other methodology.

Given the methodologies outlined and the approach adopted, the limited areas surveyed, the timing of the walkover breeding survey and the hinterland survey, it is clear that the survey is significantly less thorough than is recommended by SNH(2017) guidance. It is hardly surprising that there was limited success in finding any of the species targeted.

Nocturnal Survey

In Appendix 10.1, it is noted

Nocturnal Survey Nocturnal activity may pose greater hazards for birds at wind farms therefore nocturnal species should be surveyed (SNH, 2017). Gilbert et al 1998 provide guidelines to survey nightjar in which the surveyor will listen for calling birds around dusk in the months of May-July (inclusive). These surveys were carried out for nightjar (*Caprimulgus europaeus*), woodcock (*Scolopax rusticola*) and owls. The survey followed the same route as Transect 1 (Figure 7 above). Nocturnal surveys were carried out on the following dates:

- 9 th June 2020
- 16th July 2020

Details on each survey carried out including survey date, time and weather conditions and the results can be found in Appendix 11.

The Applicant conducted a nocturnal survey along Transect 1 – which is in the valley in the centre of the proposed site. This is a track through farmland. This would not appear to be a likely habitat to encounter the nightjar or woodcock given that nightjars are, according to the National Biodiversity Data centre, “most commonly associated with upland habitats in Ireland such as heathlands, moorland, open woodland and recently planted or clear-felled conifer plantations” and woodcock are wading bird in Ireland that is adapted to breed in woodland

Of the three species identified as target species, the most likely to be present on site was owl, given that, per Chapter 10, the presence of Nightjar and woodcock were identified from the desktop survey as historical records which meant that they were not key indicator species, particularly since an Owl was heard on one occasion at VP3.

OWL Survey

The applicant used the same nocturnal transect survey over 2 nights as evidence for lack of presence of owls. However, the SNH guidance sets very specific survey guidance criteria for owls in particular – and requires the survey methodology as outlined by Hardey et al. A breeding survey is required and the area to be surveyed is 1km outside the boundary of the proposed site. Again, this indicates that parts of the SAC which adjoin the site would fall into the area to be surveyed.

Per the SNH (2017) guidance,

3.7.6 Nocturnal species, especially owls Species which are exclusively or largely nocturnal pose special problems for survey as activity and use of the site occurs mainly under conditions of restricted visibility. Nocturnal activity may pose greater hazards for birds at wind farms therefore nocturnal species should be surveyed. Breeding survey should be undertaken and should extend out to 500m beyond the proposed site for non-owl species, and 1km for owls. Survey methods have been published for owls (Hardey et al., 2009), and nightjar (Gilbert et al 1998)..... Owls and nightjar can be surveyed by listening for calling birds around dusk at appropriate times of year: early spring from February onwards for owls, and May-July for nightjar. For owls, late evening survey for calling juveniles in May-July can also be useful in detecting successful pairs. Adults may also be active during this time. Surveys for owls can be complemented by signs of occupation, such as moulted feathers and pellets.

Table 1.6 Non VP survey summary for most regularly encountered species or species groups

BREEDING, WINTERING and MIGRATION SURVEY SUMMARY TABLE			
Species	Survey Period	Distance outwith proposal site within which data should be collected	Notes
Short-eared owl	All year	Within 2km radius for breeding sites and roost sites.	Breeding territories & communal roosts. Two years' survey is required unless shorter survey period has been justified.
Other owls	Breeder		Breeding territories. Two years' survey is required unless shorter survey period has been justified.

From Hardy et al – Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. & Thompson, D. (2013). *Raptors: a field guide to survey and monitoring* (3rd Edition).

To survey for Owls, Hardy et al, recommends 4 visits

- Visit 1 February to March To check for occupancy (locate territorial males, find roosts)
- Visit 2 Early April to late May To locate territorial males and nests (extreme care should be taken not to flush the owls from the nest)
- Visit 3 May to June To check for young
- Visit 4 June to early July To count fledged young (several visits may be require

Fieldworkers should visit their survey area between February and the beginning of May to locate calling territorial males. The visits should be made between dusk and two hours after sunset (Clark & Anderson, 1997) although it is possible that long-eared owls may call later in areas where tawny owls are present. Male long-eared owls call sporadically during October, November and December. This song builds up through January to March and April before declining into May (Scott, 1997) but may continue into June.

In conclusion, the SNH guidance is clear that the owls and nightjars can be surveyed by listening for the calls. The most likely species to be present was Owl as there was a juvenile long eared owl heard in May 2019 at VP3. However, the survey dates were in June and July – where as noted above from the guidance, the peak calling period for Owls is January to April and starting to decline in May. Therefore again, the probability of detection is minimised.

So a breeding survey was **not** conducted for Owls and the use of a transect to identify the presence of Owls was conducted outside the period of the year most likely to hear Owls.

CONCLUSION

In the submission, the ornithological report claims to follow the Scottish National Heritage(2017) guidance which is recognised as best practice. There were a significant number of issues :-

- Survey area used was not as outlined in the SNH(2017) guidance. Even if it had been excluded for the VP survey, it should have been included for a number of the other surveys given the distance guidelines set by SNH for Raptors particularly.
- Discrepancy between information in Chapter 10, Appendix 10.1 and Appendix 10.2
- Location of Vantage points, the recording of observations, the use of data from observations in the Collision Risk Model and exclusion of all VP5 data and most VP4 data
- The dropping of observed flight seconds at Potential Collision Height data for the Golden Plover flight time for the Collision Risk Model
- The dropping of observed flight seconds at Potential Collision Height for the Peregrine Falcon flight time for the Collision Risk Model
- The dropping of observed flight seconds at Potential Collision Height for the Snipe flight time for the Collision Risk Model
- The use of a spurious avoidance rate for the Golden Plover
- Not following the survey methodology and zone of interest guidelines for the breeding and abundance surveys, the species specific methodologies outlined for Raptors, Moorland breeding birds including Grouse, and the owl survey

It is truly difficult to have confidence that this is a robust study of the impact of a windfarm on the ornithological life of this very special place.

The collision Risk Model output is a key factor in determining what the impact of the turbines will be on the bird life in the area. The way in which the data was determined initially, the subsequent selection of a subset of that data and based on only three detailed analysis, the dropping of further data does not inspire confidence in the reliability of the output.

The fact that this is one of the rarest landscapes is minimised in the Application by indicating that heath was burnt or that the environment is low value- in their view. However, it was this exact area that was the subject of a European funded Comeragh Uplands Project, the aim of which is to protect and improve the habitat that we have. The recent arrival of the Golden Eagle on site demonstrates how important this habitat is. It was observed in this area on over 10 occasions – unfortunately not captured within the survey.

In conclusion, I do not believe that, given the issues identified above, the findings of the Ornithological Survey conducted for the Coomnagapall Windfarm can be considered robust. I hope that these observations will be taken into account when considering whether or not to approve this application.



Tom Shevlin @tertials · Aug 16, 2023

Golden Eagle drifting over Comeragh Mountains, Co. Waterford this afternoon

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No.	Ref.	Date	Common Name	Scientific Name	Number	Location	County	Photos
1.	IB177485	25 Nov 23	Golden Eagle (1)	<i>Aquila chrysaetos</i> (1)	1	Comeragh Mountains / Shléibhte an Chomaraigh	Waterford	
2.	IB175708	21 Oct 23	Golden Eagle (1)	<i>Aquila chrysaetos</i> (1)	1	Comeragh Mountains / Shléibhte an Chomaraigh	Waterford	
3.	IB173294	09 Sept 23	Golden Eagle (1)	<i>Aquila chrysaetos</i> (1)	1	Comeragh Mountains / Shléibhte an Chomaraigh	Waterford	
4.	IB173000	05 Sept 23	Golden Eagle (1)	<i>Aquila chrysaetos</i> (1)	1	Comeragh Mountains / Shléibhte an Chomaraigh	Waterford	
5.	IB172009	16 Aug 23	Golden Eagle (1)	<i>Aquila chrysaetos</i> (1)	1	Comeragh Mountains / Shléibhte an Chomaraigh	Waterford	
6.	IB171998	15 Aug 23	Golden Eagle (1)	<i>Aquila chrysaetos</i> (1)	1	Comeragh Mountains / Shléibhte an Chomaraigh	Waterford	
7.	IB171892	13 Aug 23	Golden Eagle (1)	<i>Aquila chrysaetos</i> (1)	1	Comeragh Mountains / Shléibhte an Chomaraigh	Waterford	
8.	IB171560	07 Aug 23	Golden Eagle (1)	<i>Aquila chrysaetos</i> (1)	1	Comeragh Mountains / Shléibhte an Chomaraigh	Waterford	
9.	IB171526	06 Aug 23	Golden Eagle (1)	<i>Aquila chrysaetos</i> (1)	1	Comeragh Mountains / Shléibhte an Chomaraigh	Waterford	
10.	IB170195	02 Jul 23	Golden Eagle (1)	<i>Aquila chrysaetos</i> (1)	1	Comeragh Mountains / Shléibhte an Chomaraigh	Waterford	

Case no : 318446 Coomnagappul wind farm