

MORAY FIRTH RENEWABLES ADVISORY GROUP (MFRAG) ORNITHOLOGY SUB-GROUP MEETING MINUTES

Meeting	MFRAG-Ornithology (MFRAG-O)	
Date	8 th March 2023; 14:00 – 17:00	
Location	Teams call	
Attendees	Marine Scotland Science (MSS)	Jared Wilson (JW)
	NatureScot (NS)	Erica Knott (EK), Jenna Lane (JL), Kate Thompson (KT)
	Marine Scotland Licensing and Operations Team (MS-LOT)	Gayle Holland (GH)
	Marine Scotland Policy	Alexander Gilliland (AG)
	BOWL	Joseph Deimel (JD)
	Moray East	Eliana Mercy (EM)
	Moray West	Nuria Abad Oliva (NA), Chris Newman (CN)
	MacArthur Green (Moray West Ornithology Advisor)	Ross McGregor (RM)
MacArthur Green (BOWL Ornithology Advisor)	Mark Trinder (MT)	
Apologies	Catherine Kelham (RSPB); Aly McCluskie (RSPB); Orea Anderson and Julie Black (JNCC); Heather Shaw (HS); Rebecca Ross (RR), Marc MacFarlane (MM), Sue O’Brien (SO).	
Action Number	Action	Completion Date
1	MT to look into including consideration of applying the turbine avoidance method at a larger scale (i.e. the wind farm as a whole). This may be included in the revised monitoring report, or report back at next MFRAG-O	Either end May 2023 (if inc. in report) or next MFRAG-O
2	NS/MSS to send a written confirmation to BOWL that a scientific paper manuscript based on the HiDef data should be produced	TBC
3	MT to issue manuscripts and 2021 survey report to MFRAG-O for review	End of May 2023
4	MacArthur Green to contact BTO and update the position paper on GBBG	End of April 2023
5	MacArthur Green and Moray Firth Developers to append the GBBG position paper to a note to include conclusions discussed through MFRAG and approach for future reviews.	End of April 2023

6	MacArthur Green to update the Moray Firth digital aerial surveys approach position paper – consideration of the analysis and outputs that we would receive from these both and compatibility issues (transects adjustments, data from different providers).	TBC
7	Doodle Poll to be issued by Developers for the next MFRAG-O	September 2023
8	EA to include all MFRAG members to the list for future offshore visits to Moray East.	TBC
Date of Next Meeting	October 2023	

1. Introductions	
2. Meeting objectives and review actions from the previous meeting (8th November 2022)	
<p>Status of Actions from previous meeting:</p> <ol style="list-style-type: none"> MacArthur Green to look at outstanding aerial survey monitoring commitments of the 3 Moray Firth projects, and to produce a note with more details of a combined survey approach. MT and RM (MacArthur Green) to refer back to the key questions and what we are trying to achieve, and further update the proposal to make clear link to the proposed survey methods/design. <i>Complete. A position paper prepared by MacArthur Green describing potential future options for joint aerial surveys across the Moray Firth offshore wind farms was issued to MFRAG-O on 2nd March 2023. Further discussed under Item 7.</i> Developers to provide MacArthur Green with DAS dates and extract of data observation. <i>Complete – Developers provided DAS dates to MacArthur Green – no overlap between DAS dates and GBBG fieldwork carried out in 2022.</i> MacArthur Green to prepare a position paper, including what is known about connectivity of the ECC SPA GBBG with the wind farms, attempts undertaken to date to reduce knowledge gaps, and findings and achievements so far, and recommended next steps. Deadline end of Feb. <i>Complete. Issued to MFRAG-O on 1st March 2023. Further discussed under Item 6.</i> 	
Actions	None
3. Moray East Project	
3.1 Moray East project update	

EMA provided a project update.

Ongoing activities:

- OFTO transaction expected for the end of April.
- Ongoing major repairs. Campaign to be completed in the next few weeks.

Surveys:

- Aerial surveys completed May-July. Data processing completed. Data analysis being discussed with MacArthur Green, no date available yet for when the report should be available.

PEMP Review

Moray East PEMP has been reviewed and submitted to MS-LOT in March, to be circulated for consultation through MS-LOT. Updates capture post construction proposal under discussion through MFRAG-O, with clarification that this is still subject to approval and refinement through MFRAG-O. The questions aimed to be responded through the monitoring have been kept as previous version (2018), and these should be reviewed following analysis of the post construction surveys, when we should be able to confirm if questions have been satisfactorily responded, and also review if all questions are still relevant or our ability to address them.

Actions

None

4. BOWL Project

4.1 BOWL project update

JD provided BOWL update:

- Site works – on-going standard maintenance works.
- Cable joint repairs within the jacket structure – planned for summer 2023.

Monitoring update:

- 2021 surveys report – responding to comments received from MSS and NatureScot.
- During process, discovered missing transect data from the final 2021 survey (due to technical problems data from one of the camera feeds was only provided for 9 of the 16 transects).
- Missing data has been requested and HiDef will provide this data soon (1 week)
- As a consequence the spatial models will need to be repeated. However it is not anticipated that the turbine avoidance analysis will be affected (as these data were already supplied).

Discussing the option to prepare a scientific paper.

JW – asked whether there would be no report made publicly available until the scientific paper is available.

JD – confirmed that the 2021 surveys report would be published first, and then the scientific paper.

MT – the 2021 surveys report and the scientific paper would be prepared in parallel.

JW – could the turbine avoidance methods be scaled up to look at responses to the wind farm as a whole? E.g. apply a displacement buffer around the windfarm? This could consider whether there are any signs of displacement at a larger scale: birds may not be displaced by a single turbine but they might be displaced by the wind farm as a whole.

MT – to date this has not been done, and while in theory the same approach could be applied, the large scale (from turbine to wind farm) introduces complications – the surveyed area applies a constraint on how far you can randomly relocate the wind farm (i.e. you can't go beyond the surveyed area) which are much less limiting at the turbine scale. Also, you introduce considerations of whether the wider area is of an equivalent suitability (e.g. is relocating the wind farm by several km still in a suitable 'control' area?) which is much less likely to be a concern when moving turbines by <=500m.

RM – depending on the effect size you are looking for –the EIA assumed a 60% displacement rate, which should be very obvious.

EK – suggested we wait until we have HiDef data - spatial mapping and come back and discuss.

MT – will think about it and see whether it looks sensible to do this.

EK – can provide a letter to BOWL requesting a scientific paper.

JD – meeting minutes would help to present to BOWL board, but an email from NS, MSS, MS-LOT would be helpful

EK – **Action** on NS, MS to send a written confirmation to BOWL that a scientific paper manuscript based on the HiDef data should be produced.

GH – would be good to have the report as soon as it is available.

EK – asked when MT would be able to do the work? Anticipated end date would be useful to know.

MT – confirmed that the manuscript would be submitted within a couple of months, and similar timescales for the report to issue to MFRAG-O for review. Aiming for end of May 2023.

JD note that the puffin monitoring cameras are in place – looking to turn these on shortly.

Actions	<p>MT to look into including consideration of applying the displacement analysis to a larger scale. Will either include in the updated report or discuss at next MFRAG-O</p> <p>NS/MS to send a written confirmation to BOWL that a scientific paper manuscript based on the HiDef data should be produced.</p> <p>MT aiming to issue manuscripts and report by the end of May 2023</p>
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5. Moray West Project

5.1 Moray West project update

NA provided updates on Moray West.

Consent plans:

Revised Pilling Strategy to be submitted by the end of March.

Wind Farm Cable Plan waiting for approval from MS-LOT, consultation undertaken.

Offshore works:

- UXO clearance (identification and disposal if required). So far no disposal required.
- Boulder clearance

Additional licences under consultation/ application:

- Safety zone application
- Weather buoy
- Buckie harbour pontoon
- Temporary reduction of navigational depth

Schedule of next activities:

- HDD works at landfall commenced in Feb 2023
- Offshore cable installation work is due to commence in July/August 2023
- Installation of scour protection is anticipated to commence in June 2023
- Monopile installation is anticipated to commence from August/ September 2023

EK – Informed that NatureScot have received the safety zone application for comments. She asks for clarifications in relation to access for research purposes such as PrePARED.

CN – Clarified that if consent is granted, 500m safety zones would be in place around wind farm structures (i.e. WTGs and OSPs, not around vessels themselves) for specific activities when a construction or major maintenance vessel is in position at the structure and is Restricted Ability to Manoeuvre (RAM status) only. This is expected to be for short periods only during certain types of construction activity (for reference, WTG installation at each location is expected to take 2-3 days which is likely to longest duration of any construction activity that would trigger a safety zone) and the safety zone consent will define the maximum number of 500m safety zones that can be active simultaneously (the application is for seven during construction and two during major maintenance). The 50m pre-commissioning safety zones would be around all structures. Information on where and when safety zones are active will be promulgated to all marine users, although due to the nature of the works that trigger safety zones this will be at short notice. Therefore, unless access for research works is required within 500m of Moray West structures on a frequent basis, safety zones should not present a significant constraint.

Any engagement regarding to PrePARED can be done with Darren Jameson (Moray West Development Manager), or directly with NA/CN. Contacting the Moray West Development Team email address (development@moraywest.com) is the quickest way to get a response (e.g. if individuals are on annual leave).

EK – Notes that Piling Strategy should be issued for consultation the sooner the better. Caroline Carter leaving NatureScot on 6th April. NA may share a draft version of the revised Piling Strategy for her to review and comment in advance, to allow incorporating any of her comments/ suggestions.

Actions	None
6. ECC SPA Great black-backed gull	
<p>A note on the Connectivity with breeding great black-backed gull colonies was shared in advance to this call on 01 March 2023. The note summarises GBBG tracking studies results from ECC and information other similar tracking studies undertaken in different geographies. It concludes that best available evidence shows that GBBG were typically coastal during the breeding season, and connectivity between the ECC SPA and the offshore wind farms is unlikely. Further monitoring either through tagging or observations unlikely to be relevant at this stage.</p> <p>RM also pointed that many of the questions posed in early stage may no longer be relevant or achievable, as these were done with the understanding at the time. For example, flight height data from the digital aerial surveys are unlikely to be sufficiently accurate or precise. Assessment on change of behaviour would therefore be limited to 2 dimensions only, with no data on vertical avoidance effect. Published research by the BTO on lesser black-backed gulls in Liverpool Bay avoid WTG by changing flight height. By not accounting for flight height and only using two-dimensional information there is a risk of arriving at incorrect conclusions. Tracking results from ECC and published tracking information that could be found was summarised.</p> <p>Additional information on GBBG diet and observation of foraging behaviours from the ECC SPA have been provide in 2022.</p> <p>The available evidence strong indicates that breeding adult GBBG are coastal during the breeding season and not likely to be flying offshore either in the Moray Forth, or anywhere else, and as such no further works would be needed to determine connectivity between ECC SPA and Moray Firth wind farms.</p> <p>JW – the flight height (FH) data from DAS Is not particularly reliable?</p> <p>RM – to date the FH data, for this purpose, is not precise and accurate enough to inform avoidance at the scale we might need it.</p> <p>EK – really useful summary. Good audit trail on what has been done over the years. Not at the stage to be comfortable to answer some of the questions that would come up at the application stage. Agree there is no value on further monitoring for the time being, although this position should be kept under annual review as there might be technology advance that could permit further investigation on this topic. Mindful that this species may be a concern for other locations so the Moray Firth could have a role in future studies.</p> <p>KT – useful review. There is actually not a lot of data from tracking GBBG from anywhere. Overall conclusion that GBBG indeed tend to forage coastally, but sample size is small. This might be something that can be revisited, but given that tagging is not an option agree that there would not be much value in doing the</p>	

same work (vantage point observations) carried out in 2022. However, this leaves the question as to origins of the GBBGs in adult plumage seen at the OWFs unresolved.

MT – a method for checking that design variations were \leq consented GBBG collisions was agreed as part of the BOWL condition. Critically, this used a much lower collision avoidance rate (98%) than has been the accepted value for several years (99.5% or more recently 99.4%). This means that the methodological revisions in CRM have already ‘reduced’ the predicted impacts and therefore the imperative to monitor GBBG is also less.

EK – agreement in the group of re-working the figures based on the revised avoidance rates for GBBG. But we still see GBBG in the wind farms so there remains a question about their origins. Strategically, there might be something this group could do to gather further evidence around this point. Questions in the appropriate assessment haven’t been answered yet. This needs to be reviewed. Even if this is not relevant here, they may have a relevance on building knowledge for future development.

MT – this does not mean there is connectivity with ECC SPA. And also, connectivity does not automatically mean there is an impact.

GH - agree with EK. Conditions are put at the consent when the consent is granted, but these things are changing with knowledge. Get this information together, and agree on a collective view whether this monitoring would need to continue for a specific project or whether would help decision making for future projects. Conditions are given in a specific moment, but the group can advise further projects. These are all valid points.

RM – Other elements that have changed, that would change the potential result.

JW – re-doing the assessment for GBBG. This would be to redoing the assessment. In such case, would we redo assessment of everything. How is density of the GBBG on site compared to pre-construction?

MT – we can’t use the more recent monitoring data as this is only collected in May/June/July – the assessment considered collisions across the whole year, with apportioning to the SPA population from the breeding and non-breeding seasons. But re-running impact assessment calculations is understood to be one of the purposes of the Cumulative Effects Framework (CEF) tool which is soon to be completed – that can be used to look at this question.

EK – no need to re-run the assessment for GBBG.

JW – the CEF could be used for this. CEF would allow you to run a CIA.

MT – also of note that the Aberdeen Bay camera and radar study results are relevant – with no recorded collisions, although there is no GBBG colony nearby.

GH – BOWL condition 5 – intention was not to re-run the assessment following new info being available – it was to check that new design parameters were within the consented limits (for collisions).

GH - asked if the GBBG note under discussion can be published. would like to get this report publicly available.

RM to add more strategic consideration on this note.

EK – Noted that there are outstanding question related to where the birds in the wind farms are coming from, if not from the ECC SPA. GBBG monitoring requirements might need to be revised in the future, perhaps under ScotMER.

EA – asked how future commitments for the developers should be approached, given that most of them related to potential impacts with the ECC SPA, which seems to be unlikely.

EK – treat this as strategic issue. Future works on GBBG should be considered under a strategic monitoring point of view. This is to be reviewed regularly through MFRAG-O, as new evidences and technologies become available (relative to capturing birds at sea, and tagging)

CN – what would be the drivers for MFRAG-O to decide whether strategic work on GBBG would be required or not.

RM – parking things until technology for catching GBBG or tagging is achievable, and able to answer the questions on where these birds are coming from.

EK – agree with CN. It is important to note what is agreed at these meetings.

MT – suggested adding a summary in the position paper to capture agreements made at the MFRAG-O around GBBG monitoring,

CN – agreed.

RM – agreed.

JD – agreed. This position paper can also be referenced in the projects PEMPs.

AG – should this report be included as evidence in the ScotMER evidence maps?

JW – ok.

Conclusion agreed with the MFRAG-O group:

Evidence collected to date suggests connectivity between ECC SPA and wind farms in the Moray Firth during the breeding season is at a very low level. For this reason, it was agreed that there is little value in undertaking further monitoring studies on GBBG at the ECC SPA for the foreseeable future, but this would be kept under review.

In response to questions posed in the previous MFRAG-O call, there is no requirement to undertake GBBG observation fieldwork at the ECC SPA in 2023.

Noted that there are outstanding question related to where the GBBG found in the wind farms come from, if not from the ECC SPA. Future works on GBBG should be considered under a strategic monitoring point of

view (for example, through ScotMer). This is to be reviewed regularly through MFRAG-O, as new evidence and technologies become available (relative to capturing birds at sea, and tagging, etc.)

Actions

MacArthur Green to contact BTO/UHI and update the position paper.
 MacArthur Green /Moray Firth Developers–append GBBG position paper to a note to include conclusions discussed through MFRAG and approach for future reviews.

7. Digital Aerial Survey – Moray Firth combined survey approach

A note on the Join Aerial Surveys Post construction was shared in advance to this call on 02 March 2023.

The note compiles aerial digital surveys future level of commitments across the 3 projects and discuss two different approaches going forward: combined or separate surveys.

MT – provided a summary of the note.

Evolution of the previous version of the MF combined survey approach, and future level of commitments for all the three projects. Two options:

1. Join the transects together to cover a bigger area in a single survey campaign
2. Continue to survey each separately.

What would be the gain from one or the other approach. Difference between the two

- Joint approach would be larger area but fewer years
- Separate would be smaller (WF) but over longer span of years

JW – transect would be retained, as these were aligned?

MT – correct, all survey transects are aligned.

MT – surveys to date have been a combination of APEM, HiDef data so there may be some compatibility issues with retrospective analysis for one or other developer

KT – useful note. The only concern is on what added uncertainties the joint option would introduce. For example transects, how the data was collected, type of images it has been collected, species ID rates and confidence. But we do have time to make this decision as next surveys not due until 2025.

MT – combined analysis will not be able to do a before/after comparison at scale of whole site as the individual sites collected their baselines at different times and various methods so we have no unified before.

JW – but this only applies to the spatial modelling, not the turbine avoidance approach that BOWL have taken for avoidance; for that you don’t need “before” data, correct?

MT – confirmed this is correct.

JW – decision is still to be made on future requirements – it might be that surveys are asked every 5 years. The 2 years is only combining the planned surveys. Noted that habitat changes as more WF are built. Other considerations could be variation in response to different ages of turbines.

KT – there is a compelling argument in support of the combined option. Ideally maximise what we can get out of this approach and not to complicate the before/after comparison.

JW – combine makes sense, but it would be good to understand whether the existing transect, how many turbines they encounter (for the turbine avoidance analysis across ME and MW).

EK - Collective preference is combined surveys – information on how the before/after

MT – add in the note what sort of the data would be collected and how it could be analysed collectively, but also could be chopped up for analysis at individual project scale if desired.

JW – add limitations and challenges.

EK – FATRAG did something similar, but there it was only one provider so easier to combine surveys, not the same variations we have here.

KT – no fundamental issue with splitting the 6 surveys for BOWL in 3 surveys in two years.

RM – looking to future, at some point monitoring for the proposed Caledonia WF will also need to fit

Actions

MT to update the position paper – consideration of the analysis and outputs that we would receive from these both and compatibility issues (transects adjustments, data from different providers).

8. Strategic Work Updates

PrePARED – ramping up with fieldwork for 2023.

Fish tag received from Moray Firth – lot of detections of tags. Looks like is both from smolt and marine fish.

Movement of fish between turbines.

ScotMER funding – decision on this – 3 main birds:

- tagging in the breeding season,
- GLS tagging auks to see winter movement,
- Seabird colony counts.

Tagging feasibility study – BTO – coming toward an end – draft report will be ready in a couple of weeks and published in the next couple of months.

NS – marine mammal monitoring on-going discussions.

A couple of reports recently published in the NatureScot website for Moray Firth Inshore Wintering Waterfowl.

Actions	None
8. AOB and close	
<p>Developers have agreed to chair MFRAG-O and MFRAG-MM meetings.</p> <p>GH – consultation on the marine consenting and licencing guidance.</p> <p>EK – NatureScot have new team members – chances of operational visits very welcome from NS</p> <p>EA – in Moray East are planning visits for 2023. Action on EA – include all MFRAG members in the list for offshore visits.</p> <p>CN – plan a visit onshore to onshore HDD works at Moray West landfall.</p> <p>Next meeting - 6 months – Developers to issue a Doodle poll</p>	

List of Abbreviations	
BOWL	Beatrice Offshore Windfarm Ltd
DAS	Digital Aerial Survey
ECC	East Caithness Cliffs
ECoW	Ecological / Environmental Clerk of Works
GBBG	Great Black-Backed Gull
Moray East	Moray Offshore Windfarm (East) Limited
Moray West	Moray Offshore Windfarm (West) Limited
MFRAG	Moray Firth Regional Advisory Group
MFRAG-O	Moray Firth Regional Advisory Group – Ornithology Subgroup
MS-LOT	Marine Scotland Licensing Operations Team
MSS	Marine Scotland Science
NatureScot	Previously called Scottish Natural Heritage (SNH)
PEMP	Project Environmental Monitoring Programme
ScotMER	Scottish Marine Energy Research
SPA	Special Protection Area (designation under the European Union Directive on the Conservation of Wild Birds)
WTG	Wind Turbine Generator