

MORAY FIRTH RENEWABLES ADVISORY GROUP (MFRAG) MEETING NOTES

Meeting	MFRAG Marine Mammals Subgroup	
Date	31 st March 2023 08:30 – 16:00	
Location	Teams Call	
Invitees	Marine Scotland Science (MSS)	Jack Lucas (JL); Joe Onoufriou (JO); Evelyn Philips (EP)
	Marine Scotland Licencing and Operations Team (MS-LOT)	Gayle Holland (GH); Brendan Campbell (BC)
	Marine Scotland Planning & Policy (MS-PP)	Alexander Gilliland (AG); Joseph Onoufriou
	NatureScot	Erica Knott (EK); Caroline Carter (CC);
	Joint Nature conservation Council (JNCC)	Sarah Canning (SC)
	BOWL	Joe Deimel (JD);
	Moray East	Eliana Araujo (EA)
	Moray West	Chris Newman (CN); Nuria Abad (NA)
	University of Aberdeen	Paul Thompson (PT); Isla Graham (IG), Barbara Cheney (BC)
	Whale and Dolphin Conservation (WDC)	
Apologies	From MSS - Jared Wilson, Kate Brookes (KB), Hannah Millar (HM), From MS-LOT - Stephanie Sweeting (SS); Debbie England (DE) From NatureScot - Jenna Lane (JL), Fiona Manson (FM) From BOWL - Heather Shaw (HS) From WDC - Fiona Read (FR)	

Action Number	Action	Completion Date
1	Updates on the arrangements for future MMMP to be discussed in the next meeting.	Next MFRAG-MM Meeting

2	Action for discussions to take place amongst the projects that are deploying monitoring equipment, to identify if there are opportunities to coordinate deployments, to make best use of Moray First Marine vessel time.	To be ongoing during the MMMP works
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1. Introductions & Meeting Objectives
Introductions not required
2. Review actions from last meeting (22 September 2022)
<p>1. PrePARED team to liaise with developers to avoid interactions with major O&M activities.</p> <p>Engagement between PrePARED and Developers ongoing Updates on PrePARED works are covered in Item 6 of the agenda.</p> <p>2. Action for MFRAG-MM to review reports:</p> <ul style="list-style-type: none"> ○ Porpoise occurrence prior to pile-driving at two offshore wind farms (circulated 5/9/22) ○ Comparison of piling noise and porpoise responses at Beatrice and Moray East offshore wind farms (Circulated 27/7/22) <p>Comments received have been incorporated.</p> <p>3. Action for discussions to take place amongst the projects that are deploying monitoring equipment, to identify if there are opportunities to coordinate deployments, to make best use of Moray First Marine vessel time.</p> <p>A framework contract to be agreed with MFM vessel for provision of MMMP works. Action to be kept open, as MMMP and PrePARED campaigns will be ongoing in the summer.</p> <p>4. Action for NatureScot to respond to PT proposal on best design for a passive acoustic monitoring array</p> <p>Design of the passive acoustic monitoring array to be discussed at this meeting.</p> <p>5. CC and HM to discuss near-field (750m) noise monitors and feed back to NAO. To be covered in this meeting. No pre-meeting discussion took place.</p>

6. Action for developers to discuss progress on approaches to future coordination and management of WP1 and WP2, and to feed back to group.

On-going – developers in discussions.

7. Action on JW to provide summary of PrePARED progress to date to this group.

PrePARED progress to be provided in this meeting (see item 6).

8. PrePARED team to offer presentations to developers in Moray Firth on update.

PrePARED Annual Knowledge Exchange Meeting was held in Aberdeen on 24 Feb 2023.

3. MMMP Update- Campaign 2022

PT presented the results on the MMMP Campaign 2022

MMMP update on reporting:

- Porpoise response prior to piling – submitted.
- Comparison of piling noise at Beatrice and ME – circulated 27/7/22.
- Evasive response of small cetaceans to anthropogenic disturbance – published early 2023.
- Temporal variation in abundance and vital rates of harbour seals and bottle nose dolphins – in progress

WP4 – MM responses to windfarm operation – 2022

Comparing with the baseline data collected in 2009-2011 – How do marine mammals respond to fish distribution and abundance, and how is this affected by the presence of operational windfarms?

Results:

1. Broad-sale porpoise responses to operational windfarm presence:
 - All devices deployed were recovered – no losses.
 - Pre and Post construction data used to identify changes in porpoise occurrence since wind farms were built – 2009-2011 (before) and 2022 (after)
 - Deployments within Moray West site was used as control site/data.
 - More devices in 2022 than previous years. This enables looking at a wider area, rather than just WF sites.
 - An increase in the occurrence of porpoises identified after construction – driven by presence of wind farms.
 - There was not much difference in the foraging behaviour.
2. Fine-scale porpoise response to presence of windfarm structures:
 - CPODS were deployed near the WTG, and at mid-point between two WTGs. The aim was to identify if there were more occurrences close to the WF.
 - No difference between mid-point or near the structures – slight increase at the mid-point.
 - Comparing difference in detection or buzz positive mins/hour within each of the paired turbine and mid-point sites – even at fine-scale there was not significant difference – normal distribution.

CPODS would only detect porpoises if they are very close, and the clicks are directional – they need to be swimming towards the CPODs. This means that there could be animals foraging at the structures that are not detected. Aerial survey to provide additional inputs.

Questions and comments from MFRAG in relation to the 2022 MMMP results:

Question from CC, in relation to the porpoise presence around the structures. It seems that there was no difference, porpoises are still there as they were before. Has this fed into the new layout (2023 array)?

PT clarifies it is important to remember that with acoustic detections it is not possible to confirm if there were more or less individual animals. The data suggest that there is no decline, and that occurrence is higher. Potentially, the WF therefore attracts marine mammals.

CC agrees the key message is that the animals are using the area as much as before or more, which is a positive outcome. This could only be known because of the monitoring campaigns.

PT highlights that for 2023, we will continue to use the pair design to compare mid-points between WTG and near WTG. IG clarified that some of the mid-locations are still in the 2023/24 proposed layout, still serving within a gradient.

CC asked about piling noise monitoring period – PT mentioned that this would be targeted around September/October. The installation of the predicted locations that may require a higher hammer energy due to their moderate risk of pile refusal would be carried out from October.

PT added that the main discussion has been about the Conversion factors, and the monitoring aims to understand how much of the hammer energy is converted in noise, so that monitoring at both low and high hammer energy sites should be equally valuable. PT noted that it would be expensive and may not be feasible to undertake noise monitoring at target locations being installed across the installation campaign. Whereas focusing noise monitoring at the beginning of the pile installation campaign in September/October has greater potential for success. If we were to target those high hammer energy locations that will be installed in winter there would be a risk of noise monitoring not being possible due to weather conditions in winter period.

NA informed Moray West is in discussion with possible contractors to carry out near-field measurements.

EK stated that NatureScot are not expecting noise monitoring across the entire pile installation campaign or delayed until Moray West install those locations with a higher risk of pile installation refusal risk – there is a balance. This can be discussed as result of Moray West PS consultation. A separate meeting will be undertaken to discuss the Pilling Strategy.

4. MMMP Update- Campaign 2023/24

PT presented the main updates in the MMMP 2023 campaign.

The 2023 MMMP Campaign includes:

- Post-construction monitoring for BOWL and Moray East (WP 4)

- Construction monitoring for Moray West
 - o *WP 4 Marine Mammal Responses to Windfarm Construction*
 - o *WP 5 Noise measurement - Piling and vibro-piling noise monitoring.*
- Harbour seal and bottlenose dolphin monitoring at the SAC (WP1 and WP2)

WP 1 and WP 2 annual surveys will continue as previous years. Additional tracking project to be undertaken on foraging harbour seals (linked to BOWL & ME Post-construction surveys), as part of task 1.2

Additional studies of porpoise responses and noise (linked to PrePARED) will be undertaken around piling (tasks 4.2 and 5.1).

WP4 - Responses of porpoises to piling- updated proposed PAM array was presented covering Moray West, Moray East, BOWL, and Caledonia. Of these, 16 moorings are shared with fish receivers. Acoustic release system to be used in 2023 – which is proving more efficient to facilitate recovery.

WP5 – Characterization of noise from monopiles during Moray West construction. Measurements in near-field and far-field in line with ORJIP recommendations (750m; 1.5-3km; 5-8km; >10km). Nearfield at 4+ sites, Far field multiple sites.

MMMP beyond 2023/24 – Developers are currently discussing on a way forward to manage MMMP beyond 2023/24 for post-construction monitoring.

Questions and comments from MFRAG in relation to the 2023/24 MMMP campaign:

MFRAG-MM is content with PAM 2023/24 layout – all in agreement.

Method Statement has been circulated – no question or comments on the 2023/24 Method Statement

PT informed SHE plans are being prepared but the only difference is the type of mooring that will be used for the devices.

EA – asked PT when the 2022 report would be finalised and the timings for circulation.

PT informed 2022 annual report summarises the field work undertaken, and results obtained as part of different work packages. This is anticipated for Q3 2023, and would tie in with the PrePARED report.

Questions and comments from MFRAG on the approach following the 2023/24 campaign:

PT explains he has been in discussion with developers about contracting and managing the future work packages on harbour seal and bottlenose dolphin work to provide confidence to all parties on delivery.

Moray West has offered to take the lead in 2022, including arrangements for cost sharing, but this would need to change longer term. Moray West should take the lead for 2023 contract as well. This is to be done as a variation of contract and on Cost Sharing Agreement (CSA) with developers if chance of having paperwork in time for this work to start. PT highlighted the importance of further conversation in parallel as to what we do after that.

JD explains that BOWL have signed up until the amended MMMP 2031 and supportive of some sort of CSA arrangement. Would look in parallel at contracting (if other developers in agreement) with a consultancy to project manage and deliver this work; discussion ongoing, goals broadly aligned on this.

PT says that it would be good to think that this discussion has progressed well down the line in the last two quarters of this year to get an internal mechanism to deliver this.

JW explains that there are advantages to getting something in place sooner rather than later to limit the risk of non delivery as much as possible.

PT says that perhaps we would like to bring this discussion together at the next meeting.

JW asks if this seems reasonable.

EK is in agreement.

JW asks from a developers' perspective to aim for next meeting to have plan process and timescales.

NAO, EA and JD in agreement. Moray West confirms it will be the leading party of the 2023 contract, should be easier than what went through for pre-construction.

Action: Updates on the arrangements for future MMMP to be discussed in the next meeting.

5. Project Updates

Moray East (EA):

- Regular O&M works ongoing.
- Major repair campaigns completed in Feb 2022.
- Upcoming surveys on the Met Mast location, no geophysical survey required.

Moray West (NA):

Offshore Consent Plans:

- The remaining plan to be approved is the Piling Strategy - due to be submitted to MS-LOT in April 2023.

Offshore Seabed preparation works:

- UXO Investigation works and clearance.

Nearshore area – UXO investigations works completed and no confirmed UXO found.

UXO Investigation works in the OfTI Corridor and windfarm site commenced on 25 February, and are currently on-going in the Moray West windfarm site. A presentation has been issued to NatureScot and MS-LOT with an update on the status of the confirmed UXOs. More confirmed UXOs are being found within the Moray West wind farm site than expected.

There is approximately 2 weeks left on the UXO investigation campaign, and UXO disposal works would commence commencement following the completion of investigation works.

- Boulder clearance works – commenced 11th March 2023. Expected to continue until June.

Additional licences and consents:

- Safety Zone Application: consultation running until 18 April 2023
- Buckie Harbour Pontoon Marine Licence: Pre-Application Consultation running until 1 June 2023

The only offshore construction works carried out to date is the HDD works at landfall, which commenced in February 2023 and finished in March 2023.

EK noted that there is an overlap between UXO works and Boulder clearance works. Is there any chance boulders could land on top of UXOs?

CN informed the positions of all confirmed UXOs have an exclusion zone around them. If boulder movement is within 300 m of an UXO, these works wouldn't be completed before the UXO clearance.

PT noted Moray West is close in distance to the firing ranges than Moray East and BOWL.

CN adds that maps with historical military data resulted not to be accurate and the UXOs are being found beyond that firing range. The majority are shells.

BOWL (JD):

Maintenance works ongoing, some subsea asset inspections planned for 2023.

6. Updates on Strategic Works

PrePARED progress presented by JO.

PrePARED Results from acoustic telemetry 2022:

- 60 individual fish tagged in 2022 (7 Atlantic cod, 3 Whiting and 50 Haddock).
- 27 of the 84 receivers have been serviced (recovered and re-deployed with data recovered).
- Initial tag data (processing from data still ongoing) – 26 fish detected on serviced receivers.
- 3 of the 26 fish (all cod) indicate predation events from the changes in tag temperature.
- 6 haddock indicated post-release mortality.

Planning for tagging 2023 campaign:

- Expected to start early April, weather dependent.
- New capture method being trialled to reduce the pre- and post-release mortality.

Fisheries acoustic surveys for broad-scale pelagic fish distribution & biomass:

- Survey in transects, focused on sandeel and forage fish (clupeids) biomass distribution.
- Initial processing of survey data has provided relative abundance maps – more processing is required to being able to plot this data in the model – prey density surfaces in the WF.

BRUVs Surveys:

- Deployed close to the turbine structures and at reference sites.
- 108 deployments – 21x3 in turbine sites and 15 x 3 in reference sites.
- BRUVs footage is being analysed for biomass and ID – 13 fish species have been recorded – flat fish – common dab *Limanda limanda*.

Overall, observed more fish detected around the turbine structures when compared to reference areas, although differences are seen between BOWL and MEOW turbines.

PrePARED is working on how to use/improve this the knowledge to support consenting. As disturbance is often considered in terms of energetic consequence (expending energy to move away, losing intake,

displacement, etc), the aim is assessing how prey quality varies spatially and temporally. This includes improving estimates of marine mammal and seabird prey nutritional value and preparing prey energy density mapping.

MFRAG comments and discussions on presentation:

CC – very interesting presentation – acoustic releases – they can detect the fish acoustic tag – is this data being recorded?

PT – acoustic releases are data loggers as well.

EA – do you have any estimate when the first results would be published.

JO – will need to ask – results are in very preliminary state.

PT – results from BRUVs within the next year some results could be released. Fish tagging would take longer. Results may be circulated, but not published.

JO – broad-scale density mapping – looking to be in a position to release results as soon as possible.

PT informed there would be an in-person meeting in Cromarty for mid-September. It was suggested to hold the next MFRAG-MM at the same date. - POST MEETING UPDATES: This mid-September meeting is not going forward. An in-person meeting could still be arranged if there is interest, dates to be confirmed through doodle poll.

7. AOB

No comments

8. Next Meeting and close

September time (dates to be confirmed through doodle poll).