

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

Meeting	MFRAG-Marine Mammals (MFRAG-MM)	
Date	30 th October 2020	
Location	TEAMS Call	
Attendees	Marine Scotland Science (MSS)	Jared Wilson (JW), Ross Culloch (RC)
	NatureScot	Erica Knott (EK), Chris Eastham (CE), Caroline Carter (CC)
	Marine Scotland Licensing and Operations Team (MSLOT)	Debbie England (DE), Gayle Holland (GH)
	Joint Nature Conservation Committee (JNCC)	Sarah Canning (SC)
	BOWL	Joseph Deimel (JD)
	Moray West	Sarah Edwards (SE)
	Moray East	Chris Newman (CN), Catarina Rei (CR)
	University of Aberdeen (UoA)	Paul Thompson (PT), Isla Graham
	RHDVH	Gemma Starmore (GS), Jennifer Learmonth (JL)
	CEFAS	Adrian Farcas (AF), Nathan Merchant (NM)
	SMRU Consulting Ltd	Ursula Verfuss (UV)
	Apologies	Janelle Brathwaite (JB) Marine Scotland Policy
Action Number	Action	Completion Date
1	Group to decide who to prepare guidance (e.g. MFRAG or members of MFRAG e.g. MSS and NatureScot)	TBC
2	PT to provide MFRAG – MM with update on analysis of UXO monitoring data being undertaken by NPL and Loughborough University	February 2021
3	JD to develop reporting template for quarterly update reports and complete for next quarter.	February 2021
4	Moray West to arrange meeting with Moray East, MSS, NatureScot, Cefas, SMRUC, Paul Thompson and MSLOT (GH) week commencing 23 rd November to further discuss monitoring data and CF for Moray West.	W/C 23 rd November 2020
5	MFRAG group to provide comments on scope of the Moray East PSIR by 13 th November 2020.	13 th November 2020
6	Moray West to arrange meeting with PT, BOWL, ME, MSS, MS-Policy and NatureScot in early 2021 to discuss longer term project and strategic monitoring requirements including links to ScotMER evidence maps (based on feedback / discussions from ScotMER symposium). Also include discussion with Carol Sparling (SMRU)	February 2021

7	PT to share details of proposal for NERC Sustainable Management of Marine Resources funding round.	
8	JW to follow up with Moray East and Moray West to understand level of interest in HERNOW proposal.	20 th November 2020
9	Deadline for letters of support to PT and UoA for wind farm case studies for REF 21 by start December 2020.	4 th December
Date of Next Meeting	May 2021 – BOWL to organise	

1. Introductions and Purpose of Meeting	
Introductions made.	
2. Review of Minutes of Meeting from previous meeting (26th September 2019)	
1.	Moray East to ask Anatec where to purchase 2018 AIS data. <i>Action closed. UoA acquired AIS for entire Moray Firth covering 2018, 2019 and 2020.</i>
2.	Include ongoing action on all MRFAG agendas: Review implications for guidance, lessons learned and project timescales. <i>Ongoing Action - added as item at end of the meeting (Item 7: Lessons learned and AOB)</i>
3.	Group to decide who to prepare guidance (e.g. MFRAG or members of MFRAG e.g. MSS and NatureScot). <i>EK discussed at ScotMer Coordination Group – no action agreed. Carry over as action for next meeting.</i>
4.	NatureScot to progress discussions with PT re future of Lighthouse in monitoring and future funding sources. <i>Discussed under Item 6: Strategic work and links to ScotMER evidence maps</i>
5.	UoA and SMRUC to look at how current monitoring can be joined up for more strategic approach. <i>Discussed under Item 6: Strategic work and links to ScotMER evidence maps</i>
6.	Neither MSS or SNH recommend the use of phased piling. MSLOT to therefore review requirements for phased piling mitigation based on findings from monitoring and recommendations from MSS and SNH. <i>Action closed. GH confirmed that phased piling is not required for Moray West.</i>
7.	PT to advise how best to share data on results from UXO detonation noise monitoring <i>Data from UXO detonation has been shared with Stephen Robinson at NPL and Paul Lepper at Loughborough University. They have also obtained additional recordings through MSS's ECOMMAS data. Detailed analysis of these measurements from the UXO detonation and scare charges are being completed and compared with modelled predictions of noise levels. PT to provide update on progress in few months.</i>

<p>8. JW to discuss inputs to ScotMER Developers Symposium with Janelle.</p> <p>Action closed. ScotMer Developer Symposium held February 2020.</p>	
<p>Actions</p>	<ol style="list-style-type: none"> 1. Group to decide who to prepare guidance (e.g. MFRAG or members of MFRAG e.g. MSS and NatureScot). 2. PT to provide MFRAG – MM with update on analysis of UXO monitoring data being undertaken by NPL and Loughborough University.
<p>3. BOWL Project Update</p>	
<p>JD provided update on BOWL.</p> <p>O&M works progressing (Year 1 of O&M complete).</p> <p>Initial post-construction benthic surveys carried out in November 2020, including grab sampling, monitoring of four turbine jackets, and additional seabed visual monitoring transects out from the four jackets, to provide a baseline for comparison against any future nutrient-enrichment studies (potential studies associated with marine growth removal, should removal become a requirement).</p> <p>Sandeel surveys scheduled for November 2020, in line with recent MFRAG-GEN discussions. Cod larval surveys are planned for February/March 2021.</p> <p>2020 aerial bird survey postponed to 2021 due to Covid-19 restrictions.</p> <p>BOWL are continuing to plan fieldwork to investigate feasibility of tagging great black-backed gulls in cliff-top colonies at East Caithness Cliffs. BOWL are also working with a researcher at University of Glasgow to investigate feasibility of netting great black-backed gulls at sea. Fieldwork for both these feasibility investigations is scheduled for the 2021 breeding season.</p> <p>Desk-based investigations have started into using new AI image analysis techniques for puffin monitoring, with target of conducting field trials at the Isle of May in the 2021 breeding season.</p> <p>PT asked whether plans for post construction marine mammal monitoring work had been / were being progressed. Important to have sight of plans to see how these may link to monitoring work proposed by other projects in Moray Firth and Forth and Tay projects.</p> <p>JD confirmed that BOWL proposals relating to marine mammal monitoring are noted in the PEMP.</p> <p>PT raised point that it has been 12 months since last MFRAG-MM meeting. This represents a long period with no further update on proposed marine mammal post-construction monitoring activities. Important to keep track of which developers are progressing with different monitoring and how these all link together.</p> <p>PT – is there a mechanism for sharing documents across the two RAG groups (MFRAG and FTRAG)?</p> <p>GH confirmed that minutes from both groups, and other documents are uploaded on the Marine Scotland website under the RAG section.</p>	

PT – important to have a mechanism to inform future planning e.g. options for sharing vessels if carrying out boat based tagging studies and marine mammal monitoring activities (PAM buoy deployment) at the same time.

EK suggested adopting similar approach to ECoW reporting where quarterly updates are provided to Marine Scotland and NatureScot. Updates should focus on work that is planned for the following quarter rather than report on what has been completed. If nothing planned this can also be reported to ensure everyone is aware that there is nothing planned.

EK – better approach than relying on PEMP updates and MFRAG meeting minutes to coordinate activities.

BOWL contribution to longer term marine mammal monitoring strategy discussed under Item 6: Strategic Work and Links to ScotMer Evidence Maps.

Actions

3. JD to develop reporting template for quarterly update reports and complete for next quarter.

4. Moray West Project Update

SE presentation – project update and overview of status on Piling Strategy Method Statement noting that a draft version of the Piling Strategy has been submitted to NatureScot and MSS for review. Key comments received relating to requirement to provide evidence that 1% CF is suitable for modelling underwater noise for monopile installation, in particular in light of results from the monitoring of BOWL piling.

AF provided explanation on approach taken to date – how the CF was derived and explaining how results from Beatrice are not directly applicable due to fact looking at monopiles not pin piles and other factors relating to installation methods. AF noted that there is monitoring data available for other projects installing monopiles. However, difficult to calculate the CF from data on received levels (as recorded from most monitoring) as need to back propagate to determine source levels which involves estimation of propagation losses. Over a distance of 100 m for a propagation loss of 40 dB, there is a margin of error ranging from 5% to 10% which equates to between 3 dB and 6 dB. This margin of error corresponds to a level of uncertainty in the CF which corresponding increase in the CF of potential 2% to 4%.

PT highlighted the importance of sharing data across projects in order to better inform these discussion.

EK – main concern within NatureScot is that the EIA was based on a range of substructures. Now that Moray West is looking at monopiles which are different to pin piles need to understand if the CF that was used for pin piles is still applicable for monopiles and if not what are the implications of this in terms of potential impacts as predicted in the EIA.

NM – highlighted that results for Beatrice (which indicated 10% CF) were unexpected. Also unfortunate that although there is literature for monitoring monopiles there is no evidence in Scotland as monopiles not used so far.

PT highlighted that there is potential that this could become a missed opportunity to share data and lessons learned across both BOWL and Moray East for the benefit of filling knowledge gaps as well as informing the

Piling Strategy for Moray West. Suggest there is an opportunity for the group to have more open discussion on the current understanding of different projects based on emerging data and analysis of those data to inform ongoing work and final reports rather than at the point that a final report is issued for review. In particular given all people in this meeting are involved in number of studies.

CR – key point is that the data has to be fit for purpose. No point sharing data if not going to be of any use.
PT - Point is asking the right question of the data.

EK confirmed NatureScot are happy to continue to be involved in further discussions.

CC – resolving the issue with the CF is a matter of urgency. NatureScot does not have confidence in the use of the 1% CF for the larger monopiles. More information is therefore required to allay concerns and/or understand if need to be looking at adopting a more precautionary approach to the piling strategy which will potentially require application of additional mitigation e.g. noise abatement systems. Ongoing discussions are therefore crucial to understanding if the data available can allay the concerns or not so can determine next steps.

RC noted that MSS was in agreement with NatureScot’s position on CF.

JW – separate meeting required to discuss the data available and how this can be used to allay concerns regarding the 1% CF. Suggest this is arranged within the next three weeks due to time constraints for Moray West.

Actions	4. Moray West to arrange a meeting with Moray East, MSS, NatureScot, Cefas, SMRUC, Paul Thompson and MSLOT (GH) week commencing 23rd November to further discuss monitoring data and CF for Moray West.
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5. Moray East Project Update

CN provided update on Moray East project (presentation)

5a Piling Strategy Implementation Report (PSIR) Scope

GS presentation on proposed scope and content of the Moray East Piling Implementation Report.

Focus of the report to is present results from piling (e.g. durations, max blow counts, maximum hammer energies etc.) and mitigation that was undertaken and compare this with predicted piling parameters presented in the Piling Strategy. The report will also evaluate the effectiveness of the mitigation measures that were implemented.

Moray East is requesting feedback on the proposed scope of the PSIR by 13th November 2020.

Final scope will be submitted to MFRAG-MM on 20th November 2020. The final PSIR will then be issued to MS-LOT in March 2021.

PT noted that if there were any issues with pile refusal (as noted that there are potential concerns with Moray West) it would be useful to identify these in the report and provide information on how addressed.

CN – some locations were identified as higher risk in terms of potentially challenging ground conditions but in the event there were no pile refusals and therefore no requirement to use spare locations during piling. At a small number of locations the soft start methodology was not used at all times (particularly during re-starts after a pause during piling) because of the heightened risk of pile damage or hammer failure.

Actions

5. MFRAG group to provide comments on scope of the PSIR by 13th November 2020.

5b Update on PS and MMMP monitoring status

PT provided an update on status of monitoring studies conducted in relation to Moray East Piling and MMMP as part of the PEMP.

Results have been presented at a number of international conferences – links to papers and presentations included in the documents circulated in advance of the meeting.

Managed to continue core fieldwork for Moray East Construction Monitoring in 2020 despite Covid-19 restrictions (which resulted in additional H&S measures being implemented).

Completed seal and dolphin ID surveys between June & Sept and continued PAM monitoring at both offshore and coastal sites. An overview of ongoing analysis of data included monitoring of harbour porpoise responses to both BOWL and Moray East construction (PAM based assessment [CPODs]). This is looking at HP occurrence in relation both to piling and other vessel activity. Indicates a drop in harbour porpoise occurrence prior to ADD deployment and commencing piling soft start.

Bottlenose dolphins occurrences along the Moray Coast has also been monitored in relation to broad scale (annual) and fine-scale (daily) presence of impulsive noise from offshore energy developments in 2011, 2017 and 2019 (CPOD array). Monitoring results observed increased activity in coastal waters when impulsive noise offshore – potentially due to increase in vocalisations as a behavioural response to the impulsive noise?

Fine scale responses to ADD-use and piling are also being investigated using Landers (4 channel sound recorders) to monitor changes in harbour porpoise occurrence and swimming directions. Results indicate that during baseline, harbour porpoise are swimming in all directions (random). Following ADD deployment observed to all swim away from the ADD towards to the lander.

As discussed in the presentation dates for the completion of various monitoring reports are as follows:

- Broad-scale responses of harbour porpoises to pile-driving and vessel activities during offshore windfarm construction (Q2 2021)
- Porpoise responses prior to pile-driving at offshore windfarm sites (Q3 2021)
- Comparison of piling noise at Beatrice and Moray East (Q2 2021)
- Assessing the far-field effects on coastal bottlenose dolphins (Q1 2021)
- Evasive responses of small cetaceans to anthropogenic disturbance (Q4 2021)
- Temporal variation in abundance and vital rates of harbour seals and bottlenose dolphins (Q1 2022)

EK – NatureScot had intended to request if some of the reports from the monitoring could be made available earlier to inform other studies / assessments. However, in light of the suggestion for an additional meeting within the next three weeks to discuss data it may not now be necessary to submit the reports earlier.

PT – Agree discussion on the data (w/c 23rd November) will also be useful for shaping the reports therefore makes sense to submit after the meeting.

CR – Question to PT – landers were included in the Moray East monitoring to collect additional information on harbour porpoise responses to ADDs. Not required under consent conditions. Given logistical challenges with this method and its complex integration into the engineering programme (short-term deployment of the landers under uncertain weather conditions/ damaged by fishermen etc) – would you adopt same approach / use similar method again for other projects?

PT – agreed that fishing activity was higher than expected. Method unlikely to be suitable for routine monitoring – but approach developed to collect information to answer a specific question relating to use of ADDs. Good technique but very data intensive (limited deployment to two week period). Challenges with logistics and deployment were focus for discussion at the WREN workshop.

JW – Moray East / PT to advise on timescales for publication of papers and feedback required for MFRAG group.

PT – key to understand whether the proposed timescales and deliverables meet expectations of the group and monitoring needs of other projects e.g. Moray West.

PT – draft manuscripts to be run passed Moray East for internal approval then circulated around MFRAG-MM.

PT – further discussion required to agree process for wider dissemination of findings and associated lessons learned / guidance based on findings.

Actions

No action

6. Strategic work and links to ScotMER evidence maps

PT involved in a proposal with CEH for NERC Sustainable Management of Marine Resources funding round. Some partners had good examples of two page project summaries for outputs from previous policy related research that might provide a useful template for wider dissemination of MMMP monitoring data.

JW – need to ensure identify who target audience is and that outputs are relevant for consenting and advisors.

PT – longer term outlook. Need to identify priorities for future monitoring. MMMP reaches a cliff edge at end of March 2022 when Moray East construction monitoring contract with UoA finishes. Currently no agreement on monitoring requirements, workplan scope, or funding, after this date.

PT – All Universities are facing challenges due to Covid. Much more emphasis on getting new contracts in place to secure future work and determined resourcing requirements. A new strategic framework for monitoring scope and funding needs to be agreed for the next 5 to 10 years to ensure that capacity to meet robust consent monitoring is maintained, particularly given PT’s retirement from UoA during this period.

JW – if monitoring beyond 2022 what is desirable for UoA?

JD – BOWL in discussions with interested parties regarding longer-term post construction monitoring requirements.

SE – Moray West will also require construction monitoring (2023 – 2024) and post construction monitoring.

CR – Moray East also to discuss post construction monitoring requirements.

RC – ScotMER evidence maps are being updated and to be circulated in advance of the next ScotMER symposium (1st – 3rd December 2020). This might assist with identifying data gaps and any related post-construction monitoring requirements.

PT – Arrange a meeting with BOWL, ME and MW to discuss longer term project and strategic monitoring requirements and links to ScotMER evidence maps (based on feedback / discussions from ScotMER symposium). This to also include NatureScot and MSS.

UV – provided update on extended monitoring being carried out by Forth and Tay developers which includes an extension to the ECOMMAS monitoring along the east coast. There is also Photo-ID work being carried out by Vattenfall at Aberdeen Bay.

JW – Update on ecosystem focused project looking at role of underwater systems e.g. Fish Attracting Devices (FADs) on key ecological systems. Broad outline for the project focused in the Moray Firth but expected to have much wider implications for the East Coast, wider UK and potentially international.

JW – Update on HERNOW proposal – details to be provided to Moray East and Moray West. Follow on discussions to understand levels of interest in project to be arranged.

JD – BOWL in discussion with NatureScot in relation to HERNOW. Further discussions required before confirm involvement.

PT – What is position with ScotMER evidence maps?

JW – Confirmed these are being updated and will be circulated in advance of the ScotMER symposium.

RC - Confirmed evidence maps will be circulated soon (mid November) although do not expect these to be the focal point of the symposium. Format for the symposium based on 15 min presentation, followed by 30 min discussion, followed by 15 min presentation and another discussion session (30 mins).

Actions	6. Moray West to arrange meeting with PT, BOWL, ME, MSS, MS-Policy and NatureScot in early 2021 to discuss longer term project and strategic monitoring requirements including links to ScotMER evidence maps (based on feedback / discussions from ScotMER symposium). Also include discussion with Carol Sparling (SMRU)
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	<p>7. PT to share details of proposal for NERC Sustainable Management of Marine Resources funding round.</p> <p>8. JW to follow up with Moray East and Moray West to understand level of interest in HERNOW proposal.</p>
<p>7. Lessons Learned and AOB</p>	
<p>Lessons learned relating to pile driving and data captured in earlier discussion. To be discussed in more detail during meeting W/C 23rd November 2020.</p> <p>PT – Under REF 21 UoA looking at wind farm work for case studies looking societal impact of universities. PT requested letter of support from all MFRAG-MM members. Responses required by start December 2020.</p> <p>Date of next meeting May 2021.</p>	
	<p>9. Deadline for letters of support to PT and UoA for wind farm case studies for REF 21 by start December 2020.</p>