



# **BERWICK BANK WIND FARM OFFSHORE ENVIRONMENTAL IMPACT ASSESSMENT**

## **APPENDIX 11.8, ANNEX A: ORNITHOLOGY ROAD MAP MEETING MINUTES**

## Meeting Notes

**Subject:** Berwick Bank Wind Farm Ornithology Roadmap Meeting 1

**Location:** Teams

**Meeting Date:** 22 July 2021

**Minuted by:** Kerr Mackinnon

**Doc Ref:** LF000010&11-DEV-CON-377

**Issued on:** 30 July 2021

**Attending:**

**SSER:**

- Louise Davis (LD) - Consents Team Manager for Berwick Bank Wind Farm
- Douglas Watson (DW) – Lead Consents Manager for Berwick Bank Wind Farm
- Ross Hodson (RH) – Lead Consents Manager for Berwick Bank Wind Farm
- Emma Ahart (EA) – Ecology Manager
- Kerr Mackinnon (KM) – Consents Advisor for Berwick Bank Wind Farm

**External:**

Marine Scotland (MS):

- Gayle Holland (GH) – left meeting at 3pm
- Kerry Bell (KB)
- Ewan Edwards (EE)
- Julie Miller (JM)
- Tom Evans (TE)

NatureScot (NS):

- Karen Taylor (KT)
- Caitlin Cunningham (CC) - left meeting at 3pm
- Erica Knott (EK) – left meeting at 3pm
- Glen Tyler (GT)

RSPB:

- Aly McCluskie (AM) – needed to dial off at approx. 15.30
- Catherine Kelham (CK)

SSER External Consultants:

- Robert Iredale (RI) – RHDHV
- Martin Scott (MSc) – HiDef Surveying
- Grant Humphries (GHu) – HiDef Surveying
- Colin Barton (CB) – Cork Ecology
- Philip Bloor (PB) – Pelagica

Apologies:

Item	Task Definition	Actioned Person(s)
1.0	<p><b>General</b></p> <p>The aim of the meeting was for SSER to introduce the updated Berwick Bank project design and programme, approach to consultation and engagement, and to discuss approach to technical elements of ornithology assessment work including baseline characterisation, collision risk, displacement etc.</p>	
2.0	<p><b>Introductions</b></p> <p>All meeting attendees introduced. RH queried who is the lead ornithology contact at MSS (JM and / or TE)?</p> <p><b>ACTION 1 – MSS to confirm who will be ornithology leads for BB project.</b></p> <p>New SSER consent managers will be starting 16 August 2021 and will be main contact for day to day activities once in post – RH to be main contact in the interim period. Further details on key contacts included on slide 3 of presentation.</p> <p>Overview of Berwick Bank ornithology delivery team including role of consultants. HiDef (technical delivery); Cork Ecology / Pelagica (EIA delivery); RHDHV (HRA); HRA Derogation (ABPmer &amp; ECON). Further details on slide 4 of presentation.</p> <p><b>Stakeholders had no comments / questions.</b></p>	<p><b>Action 1 – MSS</b></p>
3.0	<p><b>Berwick Bank Project Overview and boundary changes by SSER</b> (See slide 5 - 7 of presentation for more detail)</p> <p>RH – provided an update on the new Berwick Bank project which combines the previous Berwick Bank and Marr Bank Projects. The project is being taking forward as a single application, EIA and HRA. The Berwick Bank site represents a 9% reduction in area when compared to the combined AfL areas, providing 4.1GW of renewable energy whilst balancing engineering and environmental constraints (including ornithology).</p> <p>Boundary changes have been implemented to</p> <ul style="list-style-type: none"> <li>• Avoid relative hotspot of key bird species e.g. kittiwake, gannet and guillemot.</li> <li>• Provide a minimum 4 km buffer from Seagreen to reduce barrier effects, and to mitigate possible navigational issues.</li> <li>• Provide a minimum 4 km buffer from Inch Cape to mitigate shipping and navigation issues.</li> </ul> <p><b>Stakeholders had no comments / questions.</b></p>	
4.0	<p><b>Berwick Bank Wind Farm Design Overview</b> (Further details are provided in presentation sides 8 – 10)</p> <p>RH provided an overview of key design concepts and key changes from the previous design (covered in the Berwick Bank Scoping Report 2020) including:</p> <p>WTGs</p> <ul style="list-style-type: none"> <li>• Changed WTG range to 14 – 24MW resulting in reduction of max no. WTGs;</li> <li>• Increased minimum air gap clearance (from 22m) to 37m. This design change is considered to result in significant reduction in collision risk to key bird species. Previous work has shown reduction in potential collisions for kittiwake and gannet e.g. reduction of approx. 2/3 for increasing minimum clearance from 22 – 32m.</li> </ul> <p>Foundations – only piled jackets and suction caissons jackets (and removals of monopile, floating, gravity bases).</p> <p><b>Stakeholders had no comments / questions on these topics.</b></p>	

<p>5.0</p>	<p><b>Key Programme Dates outlined</b> (see presentation slide 11 for more detail).</p> <p>RH provided overview of key dates including submission of EIA Scoping Report Sept 2021 submission; LSE screening anticipated to be submitted end of October 2021. A single consent application anticipated to be submitted in May 2022.</p> <p><b>EK and GH Question: Given the minor changes in two schemes, there is likely little difference in the likely species anticipated so could LSE not just be brought forward to be timed with scoping? Both NatureScot and Marine Scotland would welcome the scoping report and HRA screening being submitted together.</b></p> <p>RH – SPAs and qualifying features largely will be same as with original Berwick Bank.</p> <p>LD and RH: It would be good to provide these documents at the same time, however the resource constraints facing suppliers make this challenging for SSER to source. SSER will review opportunities to bring this forward but cannot commit to it.</p> <p>RH: We will explore if we can provide a draft LSE report during the scoping consultation period to aid with review. We are unable to push back the Scoping date to align with LSE dates due to risk in timing of receiving the scoping opinion so close to the May 2022 submission date.</p> <p><b>EK: Question on clarity of dates not being clear on slide: are the dates in the Key Programme Dates slide when SSER are expected to submit deliverables to MS-LOT or are they when we expect to receive reporting from SSER ornithological suppliers?</b></p> <p>RH: The dates detailed within the Key Programme Dates slide are internal and represent when SSER will have this information available. We are content to share / consult on drafts, for consultees to provide written feedback, and / or discuss in road map meetings. It would be useful to get steer from consultees about which documents / topics there would like to review.</p> <p><b>GH: MS are no longer undertaking a gatecheck review. Any review of draft information will depend on the resource available.</b></p> <p><b>ACTION 2 – can consultees please provide advice on which documents they would like to prioritise for consultation and review e.g. what are the priority topics / documents</b></p> <p>GH: will there also be a digital scoping version too?</p> <p>RH: Yes, SSER will provide a digital scoping report.</p> <p><b>ACTION 3 – provide update on LSE and Scoping Submission dates following assessment of resource and programme.</b></p>	<p><b>Action 2 – MSS, NS and RSPB</b></p> <p><b>Action 3 – SSER</b></p>
<p>6.0</p>	<p><b>HRA Derogation Slide</b> (see presentation slide 12 for more detail)</p> <p>RH advised that without prejudice to the competent authorities HRA, a shadow Derogation case will be submitted with the offshore application. The derogation process includes three steps</p> <ol style="list-style-type: none"> <li>1. Assessment of alternatives</li> <li>2. Assessment of IROPI</li> <li>3. Compensation measures (CMs)</li> </ol> <p>The 1<sup>st</sup> two are legal based cases and SSER are in the process of procuring legal advice. The 3<sup>rd</sup> is more technical, and more ecology focused and will be priority for engagement with MS, NS, and RSPB.</p> <p><b>EK Question: Derogation report needs SSER to confirm what impacts are being covered.</b></p>	

	<p>RH: the RIAA which will be produced by RHDVG will inform the draft derogation process; the RIAA will be underpinned by outputs of PVA. The HRA process (including LSE and RIAA production) will run alongside the derogation package.</p> <p>LD: Summary of the initial work on CMs will be available for discussion and comments. We will provide updated on timings, but this is likely to be end of summer / start of Autumn 2021.</p> <p>GH: Marine Scotland commissioned framework on compensation measures is due to deliver at the end of August 21, MS will confirm when this will be available to developers. In addition, another separate piece of work regarding the other 2 tests has been commissioned and will be available at a later date.</p> <p>RH requested early sight of the MS commissioned work but GH says this is unlikely to be possible but will keep SSER informed of progress.</p> <p>EK: Preference to not have too many separate team meetings on different subjects between the roadmap calls and instead to have fewer more encompassing calls. To facilitate this, SSER and stakeholders should maintain communication of a clear agenda for future planning.</p> <p><b>ACTION 4: RH to consider meeting timings and inclusion of Derogation as part of the road map. However, RH raised increased difficulties to find suitable timings of meetings given increased number of consultants, and in absence of finalisation of CMs contracting. It will also likely increase the number of meetings required as part of the road map.</b></p>	<p><b>Action 4 – RH (SSER)</b></p>
<p>7.0</p>	<p><b>Ornithology Road Map Document</b> (see presentation slide 13 for more detail)</p> <p>RH provided an overview of the road map aims and process i.e. to have structure approach to discussion and agreement of key issues. The timings and content had to be updated prior to circulation of the draft but provided an update on current thoughts and content of future meetings.</p> <p>Feedback on the road map process was limited due to the short timeframe to review documents prior to meeting. It was agreed this would be picked up at the next meeting for proper discussion once RH updated the road map with dates and details to be issued sometime next week.</p> <p><b>ACTION 5: RH to add dates and subject matter into draft roadmap and circulate for comment and feedback</b></p> <p>RH: IBR outlines the broad approach to baseline characterisation for Berwick Bank, and provides an indication of species, abundances etc (but based on incomplete data). It highlights the general approach to characterising the baseline for the application and what we consider the key species for EIA and HRA. The document is caveated that it was drafted when we were progressing to separate Berwick Bank / Marr Bank projects (and hasn't been updated to account for such changes), nor has it had full review and input from our ornithology delivery team and therefore, may be subject to changes which will be discussed with consultees</p> <p>RH: Annex C referred to in the interim report will contain tables addressing MS/ MSS, NS and RSPB comments back from the Scoping Reporting and how and where they are being addressed (and will be included as an appendix to the Sept 2021 Berwick Bank Scoping Report). RH will circulate Annex C and this will be discussed at next roadmap meeting.</p> <p>RH: Can we get feedback and comments from consultees, please? What is achievable from consultees side? Or a quick call where we take notes?</p> <p>EK: may be able to provide bullet points, to help with planning the future meetings. To be discussed in more detail following this meeting.</p> <p>EE – Marine Scotland Science confirm it would be possible to provide brief comments similar to EK based on available time and resource.</p> <p>AM – RSPB can provide this in the next few weeks, possibly this before the next meeting – will confirm this w/ RH</p> <p><b>ACTION 6: RH to agree with consultees the best way to proceed with getting comments back to SSER on IBR</b></p> <p><b>ACTION 7: Consultees to provide comments on the IBR as agreed.</b></p>	<p><b>Action 5 – RH (SSER)</b></p> <p><b>Action 6 – SSER(RH)</b></p> <p><b>Action 7 – NS,</b></p>

	<b>ACTION 8: RH to circulate Annex C</b>	<b>MSS and RSPB Action 8 SSER (RH)</b>
8.0	<p><b>MS from HiDef – Baseline Reporting (see presentation slides 16 – 18)</b></p> <p>MS: 25 months of aerial survey data has been collected and will be used to produce the Berwick Bank Baseline Characterisation Report (March 2019 – April 2021). 18 months of interim baseline data used to inform the IBR.</p> <p>There was general agreement to use design-based strip transects and MRSea (where possible for key species e.g. guillemot, razorbill, gannet, kittiwake and puffin).</p> <p>Further discussions on approach include:</p> <p>GHu &amp; CB: Seeking for clarification from consultees on methods of recording birds flying through the site using the survey methods deployed and the modelling to be undertaken. Can you combine both flying and sitting bird datasets? For example, by taking monthly population estimates and applying a displacement value?</p> <p><b>Stakeholder Responses to SSER/HiDef Modelling Question and on the general method presented by HiDef:</b></p> <p>AM: There would be implications of recording and modelling with birds from both sitting and flying datasets, as these could be covariates that are potentially influential on each other.</p> <p>AM: Sea surface temperature will affect updrafts affecting flight height and speed of flying birds.</p> <p>GHu: if you feed in flying birds into the model then particular spatial distributions could result in the model output not being accurately representative spatially as they could smooth over the hotspots where sitting birds are being recorded.</p> <p>AM: if gannets feeding are in one location, for example?</p> <p>GHu: Good prey layers are needed to normalise clusters of birds to then be correlated with gannet / kittiwake distributions. Currently only using lesser sand eel dataset but if stakeholders can point to any others, these can be applied too where possible.</p> <p>TE: Sand eel distributions paper recently released, are people aware of it?</p> <p>GHu – HiDef are not aware of it and will consider it.</p> <p><b>ACTION 9 - TE to provide or link HiDef/SSER to the latest sand eel distribution research paper.</b></p> <p><i>Post meeting note – reference Langton R, Boulcott P, Wright PJ (2021) A verified distribution model for the lesser sandeel Ammodytes marinus. Mar Ecol Prog Ser 667:145-159. <a href="https://doi.org/10.3354/meps13693">https://doi.org/10.3354/meps13693</a> Dataset:<a href="https://spatialdata.gov.scot/geonetwork/srv/api/records/Marine_Scotland_FishDAC_12377">https://spatialdata.gov.scot/geonetwork/srv/api/records/Marine_Scotland_FishDAC_12377</a></i></p> <p>GT (on original HiDef dataset question): Different behaviours of bird species would mean some are more accurately represented by sitting and flying datasets than others: flying Razorbill datasets would be unlikely to make much difference to the model output, as they do not fly a lot within the area. However, Gannet / Kittiwake in flight would be more likely to be flying for foraging in non-breeding seasons within the survey area.</p> <p>EE – The only dynamic variant is sea surface temperature; which dataset is this and what is the resolution? Is it considered an appropriate variable to include?</p> <p>GHu – HiDef are applying NASA’s Jet Propulsion Lab data. It is as high resolution as you can get on a daily temporal basis which is automatically downloaded and applied to the model.</p> <p>TE: Asked question on how availability bias was being considered for diving species and noted that Guillemots / Razorbills in particular spend different times foraging / diving depending on season and that the daylight hours available will also affect the proportion of time diving.</p>	<b>Action 9 – MMS / TE</b>

	<p>GHu: Noted that used availability bias currently only for guillemots and razorbills and for both design and model based density estimates and that they use a single parameter value for whole year. HiDef can provide references to be clearer on the inclusion on particular parameters.</p> <p>MS: Noted that HiDef are reviewing the availability bias parameter but that this would be unlikely to be available in time for Berwick Bank.</p> <p><b>ACTION 10 – HiDef to provide further detail on references for different parameters.</b></p> <p><b>Supplementary Data to Aid Modelling Accuracy and Precision:</b></p> <p>GHu – To overcome smoothing over of the model output surfaces whilst maintaining accuracy and precision, a large volume of data is required to inform manual overrides of MRSea and selection of the spatial knots distributed across the output surface.</p> <p>EK: There are 2009 winter surveys covering the entire site BB boundary, captured through older visual aerial surveys funded by The Crown Estate. There are possibly summer surveys too. These were likely issued to whoever was leading on Seagreen 2 and 3.</p> <p><b>ACTION 11: SSER to follow up on these datasets either internally or with EK and provide to HiDef.</b></p> <p><b>RH:</b> advised that with regard to additional data sets including aerial survey data from ICOL, SG1/1A, and NNG; 2009 – 11 zonal boat based surveys and 2020/21 boat based surveys – it is proposed for these data sets to be used as contextual information to the main 25 month aerial surveys (rather than combining together).</p> <p>Question on application of seasonality and temporal grouping of data applied within modelling:</p> <p>GHu – Seasonal variations are incorporated into the modelling, the challenge is how to aggregate seasonal variations in a manner that is temporally representative of real-world conditions and changes: creating a daily average for each calendar month is likely the most appropriate temporal range.</p> <p>The challenge is that bird population distributions move throughout seasons and not on a consistently distributed timescale (every 25 days, calendar months, seasons etc). For example, initially in breeding season, populations are further to west and then further east over the season but not at a constant rate. So if you average just across seasons, you lose some of this detail.</p> <p>General approach discussed for accounting for NS seasonal guidance (e.g. part months) is to produce monthly estimates but also create subsections for seasons for further analysis.</p>	<b>Action 10 – HIDEF</b>
9.0	<p><b>Collision Risk Modelling (CRM)</b> (see slide 19 for further detail)</p> <p>MS provided an overview of approach to modelling including the use of Band CRM and sCRM.</p> <p>MS @ HiDef: which set of avian avoidance rates should be applied for each species in CRM?</p> <p>TE and GT agreed with the approach outlined in the slide 19 e.g. to use 2014 SNCB guidance which is based upon Cook et al 2014 for Band model. It was agreed that SSER could also present results from other avoidance rates e.g. Bowgen &amp; Cook 2018 for sCRM</p> <p>TE highlighted that a NE report on flight heights is due for publication shortly which will add to the database for avoidance rates. Timing is unknown but due shortly.</p> <p>RH: we will keep this under review and would wish to ensure that any differing avoidance rates from the study were agreed by SNCBs etc before being used. However, it may not be possible to use as part of the May 2022 application.</p> <p><b>AM: what exercises are undertaken to make a comparison and measure between the flight height dataset methods? How are biases in observers’ ability to determine height too being accounted for?</b></p> <p>GHu: A comparison of all three datasets recording flight height will be performed which should help normalise / smooth over outlying height values recorded.</p>	<b>Action 11 – RH (SSER)</b>



	<p><b>AM: were there any concurrent boat and aerial surveys that could aid comparison / validation of datasets?</b></p> <p>EA: No, there was little if any overlap. British Trust for Ornithology (BTO) will assess the three datasets potentially to provide further validation.</p> <p>RH: SSER are discussing with BTO and the Scope of Works includes:</p> <ol style="list-style-type: none"> <li>1. Appraisal of appropriateness and robustness and comparison of the different flight height datasets (which should be available to inform the EIA and HRA).</li> <li>2. Recommendation of flight height data for gannet and kittiwake for use in CRM (this maybe a single data set or as a result of combining data sets) but it is unlikely this will be available in time to include in the May 2022 submission).</li> </ol> <p>RH: the current approach to use of flight height data for CRM is to use Johnson et al 2014, with boat based / aerial as additional modelling for context and to inform assessments.</p> <p>AM – To aid with flight data sources, latest kittiwake tagging is taking place with altitude being recorded through barometric tag use. Gannet tagging from Bass Rock with barometric tags too. This can be made available as it is fed in. Although it was noted that this may be too late to include in the May 2022 application.</p> <p>GT – There will be additional BTO data available providing updated flight speeds. The dataset could be released potentially by August 2021.</p>	
10.0	<p><b>Apportioning (slide 20)</b></p> <p>MS: advised that two approaches are being considered for breeding season apportioning to cover the following key species - (Kittiwake, gannet, herring gull, lesser black-backed gull, Arctic tern, guillemot, razorbill and puffin)</p> <ol style="list-style-type: none"> <li>1. NatureScot Interim guidance for seabirds in SPAs</li> <li>2. Marine Apportioning tool (Butler et al, 2020)</li> </ol> <p>NatureScot Interim Guidance</p> <ul style="list-style-type: none"> <li>- Will utilise colony sizes, distance of the colony to sites (which should be distance over the sea), and sea area (extent of sea within foraging range)</li> <li>- There was agreement that Woodward et al, 2019 would be used for foraging ranges (although tagging data will be utilised where it exists and available in time e.g. 2018/ 19 Isle of May data).</li> </ul> <p>Apportioning tool</p> <ul style="list-style-type: none"> <li>- MS advised that tool would need to be available by 9 August 2021 to be able to use it.</li> <li>- TE: the apportioning tool is built but there are issues with it being added and distributed online. The files can be made available in the meantime.</li> <li>- TE advised that the tool only covers kittiwake, razorbill and guillemot, and is based upon older Seabird 2000 SPA populations, and these cannot be updated with more recent birds counts. Further discussion is needed on how to consider more recent SPA population counts.</li> </ul> <p>For non-breeding birds, BDMPS regional populations from Furness 2015 will be used.</p> <p><b>ACTION 12: TE to provide data and model to SSER for use.</b></p> <p>RH: two different approaches to apportioning: what is the primary tool? Does MS guidance / tool replace NS guidance?</p> <p>TE: MS Apportioning Tool only works with kittiwake, razorbill and guillemot Tool. NS method should be applied for all other species.</p>	<p><b>Action 12 – TE (MSS)</b></p>

11.0	<p><b>Displacement (Slide 21)</b></p> <p>MS discussed the broad approach to assessing displacement using SeabORD and the SNCB Interim Displacement Matrix.</p> <p>MD: queried if any updates to the SeabORD tool were being undertaken but it was confirmed any updates would not be available within the timeframes needed for Berwick Bank Project.</p> <p>TE: MSS advised displacement should be included for gannet too. Gannet currently is not included in SeaBORD however so alternative methods can be used e.g. in line with Searle et al. 2014 (<a href="https://www.gov.scot/publications/scottish-marine-freshwater-science-volume-5-number-13-population-consequences/pages/1/">https://www.gov.scot/publications/scottish-marine-freshwater-science-volume-5-number-13-population-consequences/pages/1/</a>) and Warwick-Evans et al. 2017 (<a href="https://doi.org/10.1111/1365-2664.12996">https://doi.org/10.1111/1365-2664.12996</a>)</p> <p>RH: we propose that the Matrix approach will be used for all species being assessed for displacement and SeaBORD will be used where possible e.g. where there is sufficient tracking data. Further discussion is needed with regards to finalise and agree an approach.</p> <p><b>On the temporal survey coverage:</b></p> <p>EA &amp; HiDef: although early April surveys took place, fog prevented valid implementation of the survey methods in 2019 / 2020. Covid-19 too prevented April surveys as planned in 2020. So, two April surveys in 2021 were performed, and one in early May 2021.</p> <p>GT – inter-annual variability is crucial. GT noted in the meeting that he was conflicted on inclusion of additional May surveys even if they took place in the first week of May – no decision either way was reached during the meeting. We will provide advice on this element in response to the IBR shortly.</p>	
12.0	<p><b>Actions (updates provided in bold)</b></p> <p>ACTION 1 – MSS to confirm who will be ornithology leads for BB project. <b>Completed TE confirmed as lead but both TE and JM will be involved</b></p> <p>ACTION 2 – can consultees please provide advice on which documents they would like to prioritise for consultation and review e.g. what are the priority topics / documents <b>ONGOING</b></p> <p>ACTION 3 – provide update on LSE and Scoping Submission dates following assessment of resource and programme. <b>Update provided at Road Map 2 meeting and further updates to be provided.</b></p> <p>ACTION 4: RH to consider meeting timings and inclusion of Derogation as part of the road map. <b>Update provided at Road Map 2 meeting and further updates to be provided.</b></p> <p>ACTION 5: RH to add dates and subject matter into draft roadmap and circulate for comment and feedback <b>Updated Road Map Issued 15 Aug 2021 including timing and content of meeting</b></p> <p>ACTION 6: RH to agree with consultees the best way to proceed with getting comments back to SSER on IBR <b>Ongoing. Discussed at Road Map 2 and included in Road Map document.</b></p> <p>ACTION 7: Consultees to provide comments on the IBR as agreed. <b>NS provided comments on 9 Aug 2021</b></p> <p>ACTION 8: RH to circulate Annex C – <b>COMPLETED 5 Aug 2021</b></p> <p>ACTION 9 - TE to provide or link HiDef/SSER to the latest sand eel distribution research paper. <b>COMPLETE</b></p> <p>ACTION 10: HiDef to provide further detail on references for different parameters.</p> <p>ACTION 11: SSER to follow up on these datasets either internally or with EK and provide to HiDef. <b>Discussed at Road Map 2</b></p> <p>ACTION 12: TE to provide data and model to SSER for use. <b>COMPLETE</b></p>	

## Meeting Notes

**Subject:** Berwick Bank Wind Farm Ornithology Roadmap Meeting 2

**Location:** Teams

**Meeting Date:** 9 August 2021

**Minuted by:** Kerr Mackinnon

**Doc Ref:** LF000010&11-DEV-CON-377

**Issued on:** 15 August 2021

**Attending:**

**SSER:**

- Louise Davis (LD) - Consents Team Manager for Berwick Bank Wind Farm
- Douglas Watson (DW) – Lead Consents Manager for Berwick Bank Wind Farm
- Ross Hodson (RH) – Lead Consents Manager for Berwick Bank Wind Farm
- Kerr Mackinnon (KMa) – Consents Advisor for Berwick Bank Wind Farm

**External:**

Marine Scotland (MS):

- Gayle Holland (GH)
- Tom Evans (TE)

NatureScot (NS):

- Karen Taylor (KT)
- Caitlin Cunningham (CC)
- Erica Knott (EK)
- Glen Tyler (GT)

RSPB:

- Aly McCluskie (AM)
- Catherine Kelham (CK)

SSER External Consultants:

- Murray Grant (MG) – RHDHV
- Kelly McLeod (KMc) – HiDef Surveying
- Martin Scott (MSc) – HiDef Surveying
- Philip Bloor (PB) – Pelagica

Item	Task Definition	Actioned Person(s)
1.00	<p><b>Feedback on Previous Meeting and How Road Map process will work</b></p> <p>EK – The minutes are crucial to provide a record what is discussed towards informing the scoping as well as during the determination. We need minutes to be clear when other specific documents are being referred to with clear outcomes stating what has been agreed and not agreed on. We need to be clear that there maybe multiple steps, and on what there has been agreement on, in any discussion. Try to summarise what has just been discussed and what will be the next step / anything parked for later discussion.</p> <p>RH – we are open to idea about the best way to record discussions and agreements. It maybe that we will not be able to document all agreements until the end of the process. Agreements will be sought in principle, outcomes of work will be presented at road map meetings, followed by consultation on technical reports.</p> <p><b>OUTCOME – Agree template and approach to documentation which can present agreements and nuances between viewpoints / position of each organisation.</b></p> <p><b>ACTION 1 - MS investigate use of ‘review spreadsheet’ (i.e. confirm availability / external use) to assistance in documentation of agreement. Its use in tracking agreements will be discussed at the next meeting.</b></p> <p><b>ACTION 2 – MS to circulate a ‘review spreadsheet’ if confirmed for external use.</b></p> <p>LD – To aid with documentation of these calls, would attendees be open to either recording the meeting or to have pre-recorded presentations followed by a roadmap meeting with minutes recorded?</p> <p>AM - This would require all attendees to be in favour of this, not just a majority.</p> <p><b>OUTCOME – General agreement of recording meeting minutes in principal for future record and help the drafting of meeting minutes.</b></p> <p><b>ACTION 3 – All consultees to confirm whether they are content for meetings to be recorded for future reference.</b></p> <p>EK - Timing of when materials / meeting minutes should be brought forward where possible to improve preparation for the meetings.</p> <p><b>ACTION 4 - SSER to circulate materials and minutes earlier where possible.</b></p>	<p><b>Outcome 1</b></p> <p><b>Action 1 – MS</b></p> <p><b>Action 2 – MS</b></p> <p><b>Outcome 2</b></p> <p><b>Action 3 – ALL</b></p> <p><b>Action 4 – SSER</b></p>
2.00	<p><b>Review and run-through of Stakeholder Comments on Meeting Minutes from Ornithology Roadmap Meeting 1</b></p> <p>KT – NS fully endorse points added in by MS already (email from 09/08/2021).</p> <p><b>On 4km Buffer:</b></p> <p>KT - On the min 4km site buffer between Seagreen 1, is this deliberate from a shipping perspective?</p> <p>RH - It is in part due to shipping and then in part for reducing impacts on ornithological impacts too.</p> <p>KT – Correction on 2009 data: aerial not boat-based surveys. Annie Breadon is the best person to contact at Crown Estate Scotland to acquire this data.</p>	

<p>RH – advised that this data was considered in previous iterations of the Interim Baseline Report but was removed following advice due to concerns about quality of the data.</p> <p><b>OUTCOME – if the 2009 zonal survey data is not being used in the baseline it should be clear that this has been considered and discounted.</b></p> <p>KT – On TE &amp; GT comments at Section 9, be mindful of report that NE commissioned BTO Report on avoidance rates.</p> <p><b>On temporal survey coverage comments (in Meeting Minutes: Section 11):</b></p> <p>KT - We had not quite decided on best approach.</p> <p>GT – Advice provided earlier via email prior to this meeting - May survey data should be kept as May rather than substituting the limited April datasets.</p> <p>IBR advice provided by KT on 9 Aug states ‘With respect to treatment of the ‘missing’ April surveys. We favour including the 5th May 2020 survey in the May samples and using the two April 2021 as samples for April. Inter-month variation is high so it is preferable to retain those May counts in the May sample rather than suggest that they will be representative of April densities.’</p> <p><b>OUTCOME – Agreement on inclusion of additional May surveys subject to presentation and further discussion.</b></p> <p><b>ACTION 5 – HiDef to implement advice on how to treat April and May surveys for ‘missing April surveys’ and present outcomes of analysis at next meeting</b></p> <p>KERRY BELL (KB) and GH from MS will be at these meetings going forward.</p> <p><b>ACTION 6 – For all roadmap meetings, KB and GH to be copied into anything to do with Roadmaps in addition to Emma Lees and Rebecca Bamlett.</b></p> <p>GH – Raised preference still that LSE screening and scoping being submitted at the same time from Meeting 1.</p> <p><b>ACTION 7 – SSER to review potential to submit both screening and scoping at the same time.</b></p> <p>GH – there is a limited time for review of documents so we will welcome seeing the updated roadmap as soon as possible.</p> <p>On Meeting Minutes - Section 8:</p> <p>GH – NS have provided clarification on sand-eels in Section 8.</p> <p>On Meeting Minutes - Section 8:</p> <p>TE – Section 8 was about availability bias, so certain number of species will be diving underwater so not observed when plane is flying over.</p> <p><b>ACTION 8 - Update meeting note from Road Map (RM) 1 meeting and circulate final draft for approval.</b></p> <p>On RSPB not receiving Annex C:</p> <p>CK – Not received Annex C (issued to CK by LD during the call).</p> <p>On the Apportioning Tool:</p>	<p><b>Outcome 3</b></p>
<p><b>OUTCOME – Agreed that further presentation and discussion on flight height data sets at next road map meeting.</b></p> <p><b>ACTION 10 - RH / MSc timeframes on BTO work to be confirmed.</b></p> <p><b>4.00 Ornithology Road Map</b></p> <p>Attendees discussed usage of a spreadsheet which may help collate comments and feedback to avoid doubling up and better management.</p> <p>Discussion on issues with October date: checking attendees’ availability namely for the Ornithology Roadmap meetings 4, 5, and 6, as well as overlapping timescales of scoping submission and roadmap meetings.</p> <p>EK – 16<sup>th</sup> September Ornithology Roadmap Meeting 4 date will no longer work either and will need changed.</p> <p><b>ACTION – SSER to agree revised roadmap meeting dates based on availability on consultees.</b></p> <p>GH – As the timescales of the roadmap meetings and scoping process overlap, we would want to avoid potential for conflict between the statutory scoping process and not the non-statutory roadmap process.</p> <p>GH – the scoping process has statutory timeframes so consultation on the scoping report may have concluded before the later of these meetings take place, with the opinion write-up taking place as the roadmap meetings are ongoing. This means that there could be advice given during the roadmap process that is after the statutory consultation on the scoping report but prior to the scoping opinion being finalised. The scoping opinion will be based on the scoping consultation responses, therefore it is important that the scoping report submitted reflects advice provided/ agreements reached from the roadmap meetings up to the point of the submission of the scoping report.</p> <p>EK – As the first three meetings occur before Scoping Report is submitted, it is preferential that these roadmap meetings help inform the final Scoping Report and subsequent Scoping Opinion, therefore much of this can be resolved before the scoping advice comes back from consultees.</p> <p>RH – agreements on approach in roadmap meeting will be included where possible in the Scoping Report prior to its submission to aid with alignment between the meetings and scoping report / responses in the opinion. It would be preferable if it was possible to agree how scoping comments will be addressed e.g. before formal opinion, following issuing of the Scoping Opinion etc, but this depends on timings of when Scoping Opinion will be issued.</p>	<p><b>Outcome 4</b></p> <p><b>Action 5 – SSER / HiDef</b></p> <p><b>Action 6 – SSER</b></p> <p><b>Action 7 – SSER</b></p> <p><b>Action 8 – SSER</b></p>

<p>MSc – Apportioning Tool took roughly 12 hours to open</p> <p><b>ACTION 9 – HiDef to check and confirm with TE on accessing apportioning tool.</b></p>	<p><b>Action 9 – HiDef</b></p>
<p><b>3.00 RH on SSER flight-height review with BTO:</b></p> <p><b>3.01</b> RH - The appraisal on appropriateness and robustness on flight height comparison methods will be available prior to planning submission and inform the application. Point two is only a recommendation of what best datasets are, unlikely to be included in the main application in part due to timescales. It is understood that should further CRM flight heights be produced and used post submission this will likely form an EIAR addendum.</p> <p>TE – is it BTO or HiDef doing the work?</p> <p>RH &amp; MSc – will be HiDef facilitating the PM with BTO undertaking the work.</p> <p><b>ACTION 10 - RH / MSc timeframes on BTO work to be confirmed.</b></p> <p><b>OUTCOME – Agreed that further presentation and discussion on flight height data sets at next road map meeting.</b></p>	<p><b>Action 10 – SSER</b></p> <p><b>Outcome 5</b></p>
<p><b>4.00 Ornithology Road Map</b></p> <p>Attendees discussed usage of a spreadsheet which may help collate comments and feedback to avoid doubling up and better management.</p> <p>Discussion on issues with October date: checking attendees’ availability namely for the Ornithology Roadmap meetings 4, 5, and 6, as well as overlapping timescales of scoping submission and roadmap meetings.</p> <p>EK – 16<sup>th</sup> September Ornithology Roadmap Meeting 4 date will no longer work either and will need changed.</p> <p><b>ACTION – SSER to agree revised roadmap meeting dates based on availability on consultees.</b></p> <p>GH – As the timescales of the roadmap meetings and scoping process overlap, we would want to avoid potential for conflict between the statutory scoping process and not the non-statutory roadmap process.</p> <p>GH – the scoping process has statutory timeframes so consultation on the scoping report may have concluded before the later of these meetings take place, with the opinion write-up taking place as the roadmap meetings are ongoing. This means that there could be advice given during the roadmap process that is after the statutory consultation on the scoping report but prior to the scoping opinion being finalised. The scoping opinion will be based on the scoping consultation responses, therefore it is important that the scoping report submitted reflects advice provided/ agreements reached from the roadmap meetings up to the point of the submission of the scoping report.</p> <p>EK – As the first three meetings occur before Scoping Report is submitted, it is preferential that these roadmap meetings help inform the final Scoping Report and subsequent Scoping Opinion, therefore much of this can be resolved before the scoping advice comes back from consultees.</p> <p>RH – agreements on approach in roadmap meeting will be included where possible in the Scoping Report prior to its submission to aid with alignment between the meetings and scoping report / responses in the opinion. It would be preferable if it was possible to agree how scoping comments will be addressed e.g. before formal opinion, following issuing of the Scoping Opinion etc, but this depends on timings of when Scoping Opinion will be issued.</p>	<p><b>Action 11 – SSER</b></p>

	<p><b>ACTION – SSER and MS-LOT to discuss indicative timings for scoping opinion to help inform timing of meetings and process for discussing how comments will be addressed</b></p> <p><b>OUTCOME – SSER to include agreements from meetings into the Scoping Report and will try to time meetings around the return of scoping opinion / advice where possible.</b></p> <p><b>Realignment of the Road Map Meeting Schedule Dates</b></p> <p>RH – what is a reasonable timeframe for you to provide comments on the Road Map and Meeting Minutes?</p> <p><b>Outcome – two weeks return time for comments to come back agreed by consultees on call.</b></p> <p><b>ACTION 13 - RH to update revised Road Map document and circulate to consultees for comment. Consultees to provide comments within two weeks.</b></p> <p>RH – Seeking timings and feedback suggestions from consultees on key docs and timings.</p> <p>No response during call but <b>action to follow up through discussion with RH and comments Road Map</b></p> <p>LD – Do Marine Scotland have any thoughts / protocol on how they will document this?</p> <p>GH – Protocol agreements are most useful for statutory timeframes. MS would be happy to have some kind of record on this with guidelines to help understand when items / reports are to come in.</p> <p>EK – It would be good to know when you need comments back from consultees.</p> <p>LD – Should we just have a log tracker or a protocol agreement document?</p> <p>EK – NS is not generally party to them, and we need to consider the resources available to maintain this.</p> <p>GH – MS LOT will not be leading the consultation on any of the pre-application draft reports as the process is non-statutory.</p> <p>EK – NS must prioritise anything statutory over non-statutory.</p> <p>LD – SSER are siding with keeping log tracker to keep things in place.</p> <p><b>ACTION 14 – SSER to further consider documentation and management of discussion and agreements through road maps and agree process with consultees.</b></p> <p><b>ACTION 15 - Consultees to provide comments on how SSER propose to address previous Scoping Comments (as detailed in Annex C of the Interim Baseline Report) and any remaining comments on the IBR. Comments to be provided by 27 Aug 2021</b></p>	<p><b>Action 12 – MS-LOT . SSER</b></p> <p><b>Outcome 6</b></p> <p><b>Outcome 7</b></p> <p><b>Action 13 – SSE / All</b></p> <p><b>Action 14 - SSER</b></p> <p><b>ACTION 15 – MS, NS, RSPB</b></p>
5.00	<p><b>EIA Approach for new scoping Report</b></p> <p><b>Characterisation of Export Cable Route</b></p> <p>RH – On MS comments regarding survey of the export cable route. We are not proposing to carry out additional aerial surveys for the whole length of the route.</p> <p>TE – the main reason for thinking it may need more details is due to it crossing the Outer Firth of Forth &amp; St Andrews Bay Complex SPA. It could be an indirect impact, it may not need more bird surveys, but aiming to understand the impacts.</p> <p>RH – Existing literature should hopefully be able to characterise the wider / indirect impacts.</p>	

	<p>TE – Broadly seems fine but need to be reviewed further as things are progressed.</p> <p>PB – We don't think the potential impacts warrant further survey along the cable routes. The 12km buffer covers quite a lot of the cable routes and then there are near-shore surveys contributing data too.</p> <p>EK – With NNG / Seagreen 1 there should be a building body of information to help inform this? Need to understand impacts on bird behaviour when cabling is going in.</p> <p>RH – Geophysical and benthic (biotopes) surveys will be undertaken which will feed into the ornithology assessment too.</p> <p><b>Combing Data from different platforms</b></p> <p>RH – SSER proposal is not to combine data from different platforms e.g. aerial and boat based survey data. The primary data set of 2019 – 21 aerial survey will be analysed as primary data set, with further and separate analysis of other survey data e.g. 2009 – 11 boat-based survey.</p> <p>NS IBR advice provided by on 9 Aug 2021 advises full analysis is carried out on the digital aerial data and recommend using the multi-platform approach (Matthiopoulos et al; in prep). NS further clarified that 2019-21 DAS is the primary dataset for analysis and wish to see assessment based on those data. Any additional analysis of other data for context and comparison is welcomed but not expected.</p> <p><b>OUTCOME – Agreement not to combine analysis of different data platforms. Analysis to be undertaken on 2019 – 21 DAS which will be used to inform assessments.</b></p> <p><b>Key species and impacts</b></p> <p>RH advised that impacts from cable installation will be included in the EIA and addressed in Scoping Report.</p>	<p><b>Outcome 8</b></p>
9.00	<p><b><u>Please refer to 'HiDef Questions Road Map 2' spreadsheet which documents agreements / disagreements on key questions discussed during the meeting.</u></b></p> <p><u>MRSea</u></p> <p>Q1 - MRSea will be used to analyse data on guillemot, razorbill, gannet, kittiwake and puffin. Density of other species will be estimates using design-based methods, as sample sizes allow, where MRSea cannot be used. Please confirm agreement with approach.</p> <p><b>OUTCOME – Agreement on this subject to adequate modelling performance. Outputs to be discussed at Road Map meeting 3.</b></p> <p>Q2 - MRSea outputs will be presented as monthly predictions with sub-sections organized by season. Please confirm agreement.</p> <p>Agreed reference to Furness 2015 is incorrect. Monthly analysis of densities but then use NS monthly seasons from Tyler 2018 e.g. the density should be applied to both halves of the month not halved, with relevant number of days then split between seasons.</p> <p><b>OUTCOME – Agreement with question updated in RM meeting 2 (9th Aug 21). Use NS seasons (as per guidance 2018). Densities applied to half months and CRM for NS seasons</b></p> <p>Q3- MRSea outputs will be presented as monthly predictions with sub-sections organized by season. Please confirm agreement.</p> <p><b>OUTCOME – General agreement that MRSea outputs are to be presented as monthly predictions with sub-sections organised by season. NS / MSS recommend as MRSea can only output one map per month, where seasons include part months then the map from that month should be presented.</b></p>	<p><b>Outcome 9</b></p>
		<p><b>Outcome 10</b></p> <p><b>Outcome 11</b></p>



<p>Q4 - Densities will be estimated for all species (except those where MRSea is used) using design-based methods. Are you content with the proposed approach, and if not what do you advise?</p> <p>TE – Q4 is inverse of Q1, so same response.</p> <p><b>OUTCOME – General acceptance noted on this approach</b></p> <p>Q5 – Density estimates will be produced for sitting, flying and combined for species where densities are sufficient to warrant this analysis. Are you content with the proposed approach, and if not what do you advise?</p> <p>EK – need to present outputs and demonstrate SSER approach.</p> <p><b>OUTCOME - This will be discussed following initial outcomes modelling and approach discussed (to agree acceptable or alternate approach) - proposed to discuss RM meeting 3.</b></p> <p>Q6 - Covariates will include as a minimum SST, SST-gradient, bathymetry, bathymetric gradient, seabed sediment type, Lesser sand eel distribution.</p> <p>TE – Some variables will have co-linearity through things like sea-surface temp. Solutions can be either weighting variables or dropping variables if needed. HiDef just need to be clear about what is done here.</p> <p>GT – Does minimum mean that we should test from a selection of variables?</p> <p>KM – We are using what variables are available, let us know if others are available for us.</p> <p><b>OUTCOME - Will need to consider co-linearity and effect on densities - approach taken needs to be clear and will be discussed further at future RM meeting (what covariates and why they were used) when discussing at future meetings.</b></p> <p><u>sCRM</u></p> <p>Q7 - Will be carried out for kittiwake, gannet, herring gull, lesser black-backed gull and other species depending on data analysis / abundance e.g. Arctic tern. Please confirm agreement.</p> <p>AM – Are HiDef using the code from the sCRM but then extracted out?</p> <p>MScott – Yes,. They are batch coding in R to make it more efficient. It will be published and will be made available for review.</p> <p>TE – The code HiDef are working with is possibly linked to a Marine Scotland commissioned project they are also working on. This includes another package which can be ran in R</p> <p><b>OUTCOME – Agreed 9 Aug 2021. N.B sCRM code taken from 'shiny app'. Acceptance of approach but there needs to be transparency e.g. sharing of coding etc</b></p> <p>Q8 - CRM is not required for auks.</p> <p><b>OUTCOME – Agreed 22/07/2021</b></p> <p>Q9 – sCRM will be performed using data from flying birds only.</p> <p><b>OUTCOME – Agreed 22/07/2021</b></p> <p>Q10 - Avoidance rates will be taken from SNCB guidance which are based upon Cook at el. 2014: (Gannet (0.989); Kittiwake (0.989); Lesser Black-backed gull (0.995); Herring gull (0.995); Great Black-backed gull</p>	<p><b>Outcome 12</b></p> <p><b>Outcome 13</b></p> <p><b>Outcome 14</b></p> <p><b>Outcome 15</b></p> <p><b>Outcome 16</b></p> <p><b>Outcome 17</b></p>
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<p>(0.995)). Avoidance rates for Cook at el. 2014 and Bowgen and Cook (2019) will be used for sCRM modelling. Are you content with the proposed approach, and if not what do you advise?</p> <p>Post Meeting Note – publication of Cook 2021 with updated ARs issued following the meeting.</p> <p>GT - We'd expect Bowgen and Cook to be replaced by Cook et al 2021,. There will also be a period of reflection by the SNBs whilst they finalise new guidance on Avoidance Rates</p> <p>AM – Cook 2021 recommendations likely to replace Bowgen and Cook in sCRM modelling and Band (deterministic modelling).</p> <p>AM – We don't think there's enough evidence for breeding season gannet (98% during breeding season, 98.9% during non-breeding season) but this could change when Cook 2021 is published.</p> <p>AM - the version of Stochastic model is part of an Marine Scotland project, will this then differ from Cook 2021 model? Can the rates then apply?</p> <p>TE – This shouldn't make any difference to the underlying model as it is about the inputs and being able to run more models.</p> <p>MG – Why aren't avoidance rated application to both the sCRM and Band models?</p> <p>TE – If normal distributions this would be fine, but as they are different where the mean and median don't match up, the avoidance rates are used in a directly comparable way.</p> <p>GT – agreement roughly with TE. It is about how the stochastic model handles variable distribution. Cook 2021 has a clear explanation of this.</p> <p>MG – Does that mean we do not have an recommended avoidance rates to use with the sCRM? Or can we use Bowgen and Cook 2019 for now as Cook 2021 is not out? What is the risk of Cook 2021 not coming out on time and being unavailable?</p> <p>GT – The recommendation is to proceed as we are proceeding for now. If you don't have Cook 2021, then we would be fine with Bowgen and Cook 2019 as they can be applied to stochastic model.</p> <p><b>OUTCOME – SNCB guidance based upon Cook et al 2014 but SNCB guidance should still be used. If Cook 2021 is not published in time to inform sCRM modelling, then Bowgen and Cook would be acceptable</b></p> <p><b>OUTCOME - agreed 22 Jul. 21, with further discussion and agreement on 9 August2021</b></p> <p>Q11 – Because avoidance rates from SNCB guidance (based upon Cook et al (2014)) represent the basic avoidance rates in the sCRM, only options 1 and 2 of the sCRM will be presented using generic and site-based data for both options.</p> <p><b>OUTCOME – agreement that sCRM will be performed using data from flying birds only. Re. if option 3 be run for large gulls? Await output of Cook 2021 / NE recommendations and will be discussed at future meetings.</b></p> <p>Q12 – Flight height will be based on 1) generic (Johnson 2014). Site specific flight height data is also being collated for aerial and boat based methods (observer and laser range finder if data are sufficient), appropriateness and use of data will be discussed as part of the Road Map and will be considered as part of the BTO Flight Height Study.</p> <p>Johnson et al is the only data set that isn't novel. If BB use other novel data sets it will be useful for context. It may be the case that only the generic flight height is used for EIA but other data sources will inform the HRA. SSER will share the output of the data analysis and have also commissioned BTO to carry out a comparative assessment of all datasets which can be shared with SNCBs</p>	<p><b>Outcome 18</b></p> <p><b>Outcome 19</b></p> <p><b>Outcome 20</b></p>
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<p><b>Discussion on different the flight height data sources:</b></p> <p>GT – These are different datasets, we would want to see Johnson et al 2014 flight height curves in order to understand the flight height data validation.</p> <p>AM – There are 4 methods: generic, boat-based, aerial and tagging. Of all these, the generic is the only that can't be considered a novel methodology at this time. All 3 others need validation. Satellite tagging has made good progress but it won't be ready until the end of year. HiDef Methods are only calibrated so far by stationary objects, so the challenge is to make sure there are no biases. A laser range finder from boat will identify some flight heights much more accuracy than other heights.</p> <p>LD – Can we take from this meeting that the baseline is the generic Johnson et al 2014 data for analysis? But if we choose for whatever reason not to present the 3 other method outputs? This would avoid having a very convoluted 4 or 5 scenarios detailed over 24 months.</p> <p>AM - Band et al 2012 recommends looking at site specific data and compare it with Johnson 2014 et al and if it lies outwith the confidence limits, then figure out why it would be so different. (Following clarification of the question) Yes, agrees with LD's question.</p> <p>EK – We are not quite saying you need to do everything, but you need to do some contextual work on the 3 methods not yet calibrated. Rely on the generic, then SSER need to make a call on which methods to bring forward.</p> <p>EK – We would like clarity on the pros and cons of the other methods and on how we get more certainty into them.</p> <p>LD – This is all programmed in and will happen, when we are at a position of understanding our confidence in the data.</p> <p>AM – Cook 2021 should still be of use to the project, look at way of compensation measures are going through, there needs to be compensation of the number of birds which can be different due to advances in assessments over time. While not used in assessment might be used in compensation measures.</p> <p><b>OUTCOME – Agreement that we will also consider flight height data from other tagging studies (Bass Rock).</b></p> <p><b>OUTCOME – Agreed that primary CRM will use generic flight height from Johnson et al. 2014 Further analysis of non-generic sources to provide context and understand variance from generic sources, and information should be provided to support application. Further discussion on flight height data and use will be required.</b></p> <p>Q13 – Scenarios will model realistic worst case and most likely for each species, informed by the PDE. Can you confirm you would like us to model all WTG options?</p> <p><b>OUTCOME - Currently 5 WTG options in the PDE ranging 14 - 24 MW. Agreed that initial CRM across range of scenarios and will inform future discussions on WCS CRM for key species.</b></p> <p>Q14 - BTO BirdFacts will be the default biological parameters (body length, wing span, flight speed). Availability of other flight speeds (e.g. from tagging data) will be explored. Can consultees advise on possible data sources and availability?</p> <p><b>OUTCOME - Agreement subject to references being provided but further discussion needed on flight speeds.</b></p>	<p><b>Outcome 21</b></p> <p><b>Outcome 22</b></p> <p><b>Outcome 23</b></p> <p><b>Outcome 24</b></p>
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<p>Q15 - Default sCRM nocturnal activity values will be used with the exception of gannet where updates provided in Furness, 2018. Nocturnal activity scores for kittiwake will use values previously agreed for Seagreen EIA Optimised Project Addendum 2018. Can you confirm acceptance of this approach?</p> <p>TE - What is meant by nocturnal activity? , is this night (sunset to sunrise) or excluding civil/nautical twilight periods?</p> <p>Post meeting clarification provided by GT on nocturnal values - Band spreadsheet calculations based on Forsythe et al 1995 sunrise and sunset times. While the Forsythe model can use different definitions of sunrise/sunset it is not clear which is incorporated into the Band spreadsheet. Of the standard twilight definitions Civil will give the longest period of night and is therefore least precautionary. Astronomical is the most precautionary. Furness et al 2018 review of gannet nocturnal activity suggests nautical is safe for gannet. If in doubt use astronomical.</p> <p><b>OUTCOME – Agreement that there are not any additional kittiwake references at this stage for nocturnal activity. Further detail on values to be discussed at future meetings</b></p> <p><u>Displacement</u></p> <p>Q16 – On displacement, can SeabORD be applied to guillemot, razorbill and puffin for the breeding season?</p> <p><b>OUTCOME - Agreed to also include Kittiwake (9th August 2021)</b></p> <p>Q17 - Which estimates of mortality rates should be used? The rates used for the Seagreen EIA Optimised Project Addendum 2018 are proposed.</p> <p><b>OUTCOME - Agreed in principle on 9th Aug 2021 but running out of time in meeting so further consideration is needed by consultees.</b></p> <p>Q18 - Which estimates of displacement rates should be used? rates used for Seagreen EIA Optimised Project Addendum 2018 are proposed.</p> <p><b>OUTCOME - Agreed in principle on 9th Sept 2021 but running out of time in meeting so further consideration is needed by consultees.</b></p> <p>Q19 - Joint SNCB Interim Displacement Advice Note (2017) will be used for all species sensitive to displacement.</p> <p><b>OUTCOME – Agreed.</b></p> <p><u>Apportioning</u></p> <p>Q20 – On apportioning, following receipt of MS tool in July 2021, we propose using the NS Interim Guidance Methodology to undertake apportioning. The tool currently appears highly problematic to operate (e.g. taking many hours to open) and it can only be used for kittiwake, puffin, razorbill and guillemot for the breeding season. Are consultees content with this approach?</p> <p><b>OUTCOME– Not Agreed: as discussed, 9th August 2021 MSS &amp; NS advice is still to use tool. HiDef to further investigate the usage of tool.</b></p> <p>Q21 - If you prefer for the MS tool to be used, we are concerned that the tool uses Seabird 2000 counts for the reference populations. This will not reflect current populations in line with the completed survey programme, and we believe as such it doesn't utilise best available evidence. How do consultees wish this to be considered?</p>	<p><b>Outcome 25</b></p> <p><b>Outcome 26</b></p> <p><b>Outcome 27</b></p> <p><b>Outcome 26</b></p> <p><b>Outcome 27</b></p> <p><b>Outcome 28</b></p>
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<p><b>OUTCOME – Not Agreed: NS are okay with it being based upon seabird 2000 for the purposes of apportioning, so retry tool (as comment above).</b></p> <p>Q22 - SPA connectivity will be determined through foraging range mean max as recommended by MS apportioning tool. Can consultees confirm this approach?</p>	Outcome 29
<p><b>OUTCOME – Not Agreed: NS and MSS advise use of Mean Max + 1 SD or max - whichever is the least - to identify SPAS for apportioning birds, with results reviewed and discussed.</b></p> <p>Q23 - Non-breeding season - BDMPS population estimates will be used for the non-breeding season. Can consultees confirm agreement?</p>	Outcome 30
<p><b>OUTCOME – Agreed, but not to use for guillemot (where the assessment area and regional population will be based on breeding season estimates). Follow approach from SG1 and check for any evidence updates.</b></p> <p>Q24 - Regional population estimates - will be based on mean maximum foraging range for breeding season and BDMPS estimates for non-breeding season.</p>	Outcome 31
<p><b>OUTCOME – To be discussed further in next meetings.</b></p> <p>Q25 - Colony specific foraging range data will be used where appropriate. Please advise on any specific data sets, evidence base etc. you would advise we should consider?</p>	Outcome 32
<p><b>OUTCOME - Use of data / evidence is subject to availability / timings of assessment work to meet May 2022 submission</b></p>	Outcome 33
<p><b>ACTION – SSER to circulate updated spreadsheet of HiDef questions and consultees to provide feedback on content.</b></p>	ACTION 16 – SSER
<p><b>ACTION - Draft meeting note for RM 2 meeting and circulate draft for comment and agreement.</b></p>	ACTION 17 - SSER

10	RH timeframes on BTO work to be confirmed.	SSER
11	SSER to agree revised roadmap meeting dates based on availability on consultees.	SSER
12	SSER and MS-LOT to discuss indicative timings for scoping opinion to help inform timing of meetings and process for discussing how comments will be addressed	SSER / MS
13	RH to update revised Road Map document and circulate to consultees for comment. Consultees to provide comments within two weeks.	SSER, MS, NS and RSPB
14	SSER to further consider documentation and management of discussion and agreements through road maps and agree process with consultees.	MS, NS and RSPB
15	Consultees to provide comments on how SSER propose to address previous Scoping Comments (as detailed in Annex C of the Interim Baseline Report) and any remaining comments on the IBR. Comments to be provided by 27 Aug 2021	MS, NS and RSPB
16	Circulation of updated 'HiDef Questions' spreadsheet following meeting for consultees comment and to confirm areas of agreement.	HiDef
17	Draft meeting note for RM 2 meeting and circulate draft for comment and agreement.	SSER

### Actions

No.	Action	Owner
1	MS investigate use of 'review spreadsheet' (i.e. confirm availability / external use) to assistance in documentation of agreement. Its use in tracking agreements will be discussed at the next meeting.	MS
2	MS to circulate a 'review spreadsheet' if confirmed for external use	MS
3	All consultees to confirm whether they are content for meetings to be recorded for future reference.	All attendees to confirm whether this is acceptable prior to RM3
4	SSER to circulate materials and minutes earlier where possible for future meetings.	SSER (ongoing action)
5	HiDef to implement advice on how to treat April and May surveys for 'missing April surveys and present outcomes of analysis at next meeting	HiDef
6	For all roadmap meetings, KB and GH to be copied into anything to do with Road maps.	SSER
7	SSER to review potential to submit both LSE screening and EIA scoping at the same time in discussion with MG.	SSER
8	Update meeting note from Road Map (RM) 1 meeting and circulate final draft for approval.	SSER
9	HiDef to check and confirm with TE on accessing apportioning tool.	HiDef

## Meeting Notes

**Subject:** Berwick Bank Wind Farm Ornithology Roadmap Meeting 3

**Location:** Teams

**Meeting Date:** 28<sup>th</sup> September 2021

**Minuted by:** Andrew Logie

**Doc Ref:** LF000010&11-DEV-CON-400

**Issued on:** 8<sup>th</sup> October 2021

**Attending:**

**SSER:**

- Louise Davis (LD) - Consents Team Manager for Berwick Bank Wind Farm
- Emma Ahart (EA) – Ecology Manager for SSER
- Ross Hodson (RH) – Lead Consents Manager for Berwick Bank Wind Farm
- Andrew Logie (AL) – Offshore Consents Manager for Berwick Bank Wind Farm

**External:**

Marine Scotland (MS):

- Gayle Holland (GH)
- Tom Evans (TE)
- Kerry Bell (KB)

NatureScot (NS):

- Karen Taylor (KT)
- Erica Knott (EK)
- Glen Tyler (GT)

RSPB:

- Catherine Kelham (CK)

SSER External Consultants:

- Murray Grant (MG) – RHDHV
- Martin Scott (MSc) – HiDef Surveying

Item	Task Definition	Actioned Person(s)
1.00	<b>Review of actions from RM1 and RM2</b> <ul style="list-style-type: none"> <li>• Actions list now added to the Road Map agreement and change tracker excel sheet.</li> <li>• RM2 Action3: All consultees to confirm whether they are content for meetings to be recorded for future reference. RSPB are content with meetings being recorded. This is currently not possible with SSE's IT, but a solution will be looked into.</li> <li>• RM2 Action10: RH timeframes on BTO work to be confirmed. BTO have now started their work, following receipt of the boat-based survey report w/c 20<sup>th</sup> Sep 2021.</li> <li>• RM2 final meeting minutes issued 17 Sept 2021.</li> </ul>	
2.00	<b>Update from SSE</b> <ul style="list-style-type: none"> <li>• Scoping submission still planned for w/c 4th Oct 2021.</li> <li>• LSE Screening should be ready w/c 25th Oct 2021, so will be submitted roughly within the three-week Scoping check period.</li> <li>• GH advised that LSE screening advice (consultation responses) may be provided with the Scoping Opinion, depending on the timing of responses from consultees.</li> <li>• RH requested that consultees provide an informal response to SSE in advance of their formal response to MS, so that any required clarifications could be given where necessary. Whether this is possible or not will be discussed going forward. If not, copying in SSER when providing a response to MS LOT would be appreciated as we can start to consider comments prior to the formal Scoping Opinion.</li> <li>• Excel tracker sheet for documenting agreements and changes - generally a good idea, however SSE should add an 'outcome' column and ensure there is consolidation/streamlining of different documents. The Annex C document has now served its purpose, with key agreements and detail to be held in the spreadsheet with a summary in the RM document.</li> </ul>	
3.00	<b>HRA Derogation and Compensation:</b> <ul style="list-style-type: none"> <li>• Overview of compensation measures should be available mid-October 2021. Early Nov, late Jan, mid-Feb 2021 are the indicative times for three meetings to discuss marine compensations measures.</li> <li>• Nominated contacts for compensation measure meetings are: NS - use Marine Energy mailbox; RSPB - Catherine and Ali to remain as key contacts; MS - Gayle &amp; Kerry to coordinate &amp; will bring in policy colleagues when needed.</li> </ul>	
4.00	<b>Flight heights and BTO work</b> <ul style="list-style-type: none"> <li>• 2020-2021 Berwick Bank Boat Based Survey Results Report now available, which allows BTO work to commence. Aerial survey flight heights also available. Outputs expected November 2021 for WP1 and towards the end of the year/Jan 2022 for WP2. (WP1: Appraisal of data and consideration of use and robustness of different data sets WP2: development of continuous flight height data sets for use as part of CRM for kittiwake and gannet).</li> <li>• It is proposed that site-specific flight heights are to be used for discussion with generic flight heights, but SSER are unable to commit to site specific data being used for CRM due to programme and increased complexity of assessment. The generic data is to be used in the CRM as it can be relied upon.</li> <li>• TE: If site specifics are very different to generics MSS may want to see some additional CRM. RH: We would like to undertake further monitoring where possible but need to focus on using primary &amp; approved methods e.g. generic flight heights and SNCB adopted ARs. Limited time available to run different models. GH: MS need to ensure that we have the information require to inform the decision.</li> <li>• CK: Questioned if there is a possibility to look at different flight heights for a limited number of key species. EK keen on this too, perhaps done as a sequential process to the application.</li> </ul>	



	<ul style="list-style-type: none"> <li>LD: Questioned the robustness of data as the boat-based data set is fairly limited. EK: SSE need to make the decision based on programme and keep all informed. EK: need to be cautious of programme driving the process. Need to be mindful of what is helpful to drive the decision [i.e. determination of the application] throughout the process.</li> <li>Decision points to be added for future RMs.</li> <li>RH: Critical path for the project is the ornithological modelling. We will need to press ahead before next RM meeting - will use best endeavours with data. ACTION: SSE to update group on CRM results at the next meeting.</li> </ul>	<b>Action 1 – SSER</b>
<b>5.00 MRSea</b>	<ul style="list-style-type: none"> <li>HiDef have been engaging with the MRSea model but overall have found it very difficult to operate for this scale of project. It takes 5-7 days to run model at times, with issues over the model crashing or errors which aren't evident to the end of the run.</li> <li>The numbers in slides are not correct (provided as a working draft, unchecked).</li> <li>Later surveys were more complete than earlier ones (some gaps in earlier survey). However, issues have been noted with MRSea overestimating densities when modelling the gaps (density hot spots noted where the gaps in surveys are).</li> <li>Due to ongoing issues with the model, SSER are now looking to move to design-based density figures in the CRM modelling.</li> <li>TE: Do both approaches deal with all sources of uncertainty? MS: MRSea is producing broadly similar results but has some clear errors which is skewing data. MG: Shouldn't assume that MRSea gives better or more accurate results.</li> <li>EK: Can we use kittiwake as an example to fully explain MRSea issues and a design-based comparison?</li> <li>ACTION 2: TE also has some technical questions on MRSea to be provided by email. [superseded by request of technical note and provision of MS/NS questions on 17 Nov 21]</li> <li>MRSea hasn't been used for consent purposes in the UK and it has previously been acceptable to use design based density figures but advisors and regulators need a record of what the issues have been.</li> <li>ACTION 3: SSER / HiDef to update the previously issued technical note to support reaching agreement on the use of design-based generated densities to clearly define:             <ol style="list-style-type: none"> <li>Why the model is not working and list the issues encountered, to include the original purpose of MRSea (post-construction monitoring rather than consenting);</li> <li>Outline a comparison with Design Based Estimates;</li> <li>Explain the rationale for how covariates are chosen</li> </ol> </li> </ul>	<b>Action 2 - Tom Evans</b>  <b>Action 3 - SSER</b>
<b>6.00 LSE Screening</b>	<ul style="list-style-type: none"> <li>Original HRA screening being revised, taking into account previous consultee advice. Similar approach to previous LSE Screening, with 4 categories of SPA considered (Marine SPAs, Breeding seabird colony SPAs, Migratory waterbird SPAs and Other SPAs within Project ZOI)</li> <li>For breeding seabird colony SPA mean max range + 1 Standard Deviation has been used to determine potential connectivity during the breeding season. The screening now incorporates N. England SPAs, following the advice from Natural England.</li> <li>The long list has been honed down, by looking at reasons why there is an absence of connectivity despite SPAs being within mean max foraging range +1SD (e.g. sites in west coast of Scotland where qualifying features likely to be limited to western waters)</li> <li>Only 1 marine SPA has been screened in.</li> <li>The 33 breeding seabird colony SPAs have been honed down to 28 (some Orkney, Shetland &amp; Western Scotland sites excluded, due to at-sea distance exceeding mean max foraging range +1SD or rarity of qualifying features as recorded during the baseline surveys for example). Also, some features of included SPAs have been screened out for same reasons.</li> <li>17 migratory waterbird SPAs included (same as previous, but with N. England sites added)</li> <li>Others: Firth of Forth SPA (non-breeding red throated diver disturbance)</li> <li>Effect pathways were then considered. The list of 28 sites reduced to 19 for breeding seabird colony. Flamborough and Filey Coast SPA, Coquet Island and Farne Island SPA are the three in English waters.</li> <li>Migratory waterbirds, 17 sites all taken forward.</li> </ul>	

	<ul style="list-style-type: none"> <li>There is a strategic study on collision risk of migratory birds commissioned by MS - due to be completed November 2021. Should be published in time for BB application and will update the existing 2014 report. ACTION 4: TE to provide a written update. SSE may have to rely on 2014 work if report doesn't come through in time.</li> </ul>	<b>Action 4 – Tom Evans</b>
<b>7</b>	<p><b>Outstanding questions for discussion</b></p> <p>Refer to the 'Road Map 3 questions' excel sheet, sent by RH on Monday 27<sup>th</sup> Sep 2021 for details:</p> <ol style="list-style-type: none"> <li>Use of MRSea: As discussed, SSE/HiDef will provide a note to inform views and agreement on moving to design based estimates in CRM modelling</li> <li>Use of half months: GT - approach agreed</li> <li>Collision risk: ACTION 5: HiDef have a list of parameters used for CRM, to be provided after the meeting. NS and MS confirmed SNCB recommended ARs from 2014 guidance should be used. NS noted the Cook 2021 paper has not been adopted by SNCBs but it is advisable to use ARs for sCRM from Bowgen &amp; Cook 2018 paper and Cook 2021.</li> <li>As with Q10 above, SNCB recommended ARs are from 2014 guidance. But NS and MS advise the use of additional ARs for sCRM including Bowgen &amp; Cook 2018 and Cook 2021. Also, for large gulls.</li> <li>Flight heights: Johnson 2014 to be used. As discussed earlier in the meeting, SSER will consider Boat Based and Aerial derived flight heights to discuss alongside / compare to generic flight heights but are unable to commit to inclusion of site specific data as part of CRM at this stage. Use of tagging data won't be available in time.</li> <li>Flight speed: TE - should use Alerstam and Pennycuik flight speeds (rather than Skov 2018).</li> <li>Nocturnal activity: NS advised that default values were recommended to be amended by Band for gannet and kittiwake. For gannet, Seagreen advice was for 0% but potentially increased value of 7% based upon Furness. ACTION 6: NS and MSS (and RSPB) to follow up with advice on what values they would recommend using for nocturnal activities.</li> <li>Mortality rates and displacement assessment: TE confirmed that the SeabORD code is being translated into new Cumulative Effects Framework model, but this is not a QA process. NS confirmed that a matrix approach with a range of mortality rates should be used, with outputs reviewed prior to use in PVA modelling but that SeabORD should also be ran alongside this. TE also confirmed that the SeabORD model has not been updated with revised relationships for several of the relevant seabird species between body condition and survival rates, as determined by analyses of data from the Isle of May.</li> </ol> <p>Close of meeting before questions 18-25 could be addressed. ACTION 7 Responses to be sent by email w/c 4<sup>th</sup> October.</p>	<b>Action 5 – HiDef</b>  <b>Action 6 – NS, MSS &amp; RSPB</b>  <b>Action 7 – NS &amp; MSS</b>

**Actions**

No.	Action	Owner
1	SSE to update group on CRM results at the next meeting	SSE
2	TE to send some technical questions on MRSea by email (superseded)	Tom Evans
3	SSE to issue a note on the problems around the use of MRSea, to include a comparison with design-based estimate figures	SSE
4	Provide a written update on the SPA Strategic Study currently being carried out by MS	Tom Evans
5	HiDef to issue the list of parameters used for CRM	HiDef (via SSE)
6	NE and MSS (and RSPB) to follow up with advice on what values they would recommend using for nocturnal activities	NS, MSS & RSPB
7	Responses to questions 18-25 (Road Map 3 questions spreadsheet) to be sent by email w/c 4 <sup>th</sup> October.	NS & MSS

## Meeting Notes

**Subject:** Berwick Bank Wind Farm Ornithology Roadmap Meeting 4

**Location:** Teams

**Meeting Date:** 8<sup>th</sup> December 2021

**Minuted by:** Colin Barton

**Doc Ref:** LF000010&11-DEV-CON-406

**Issued on:** 10<sup>th</sup> December 2021

**Attending:**

**SSER:**

- Ross Hodson (RH) – Lead Consents Manager for Berwick Bank Wind Farm
- Andrew Logie (AL) – Offshore Consents Manager for Berwick Bank Wind Farm
- Jon Abbatt (JA) – Lead Consents Strategy Manager
- Heather Donald (HD) – Head of Project Consents

**External:**

Marine Scotland (MS):

- Gayle Holland (GHO)
- Tom Evans (TE)
- Kerry Bell (KB)
- Richard Howells (RHw)

NatureScot (NS):

- Karen Taylor (KT)
- Erica Knott (EK)
- Glen Tyler (GT)
- Caitlin Cunningham (CC)

RSPB:

- Catherine Kelham (CK)
- Aly McClusky (AM)

SSER External Consultants:

- Murray Grant (MG) – RHDHV
- Kelly McCleod (KM) – HiDef Surveying
- Grant Humphries (GHu) – HiDef Surveying
- Colin Barton (CB) – Cork Ecology
- Philip Bloor (PB) – Pelagica
- James Orme (JO) – Juno Energy (Chair)

Item	Task Definition	Actioned Person(s)
1.00	<p><b>List of Questions (Slide 3)</b></p> <ol style="list-style-type: none"> <li>1. Wildfowl/geese: What is the expectation regarding availability of update on the strategic migratory bird CRM study? If unavailable, can the existing 2014 report be used for contextual EIA/HRA assessment, noting that LSE is concluded for migratory species that are not covered in that report?</li> </ol> <p>TE – Updated study is not completed yet, but is anticipated early next year. It probably will not be available for the EIAR assessment but will be available for the determination stage.  AL – so we should use the 2014 report for the assessment?  KT – Yes, this is our Scoping Advice submitted to MS.  MG – Advice for the earlier BB Scoping Opinion was to use the 2014 report however there is an issue in that several migratory species have been screened in to our assessment that aren't included in the 2014 report – how do we deal with these species? What level of work might be required for these species?  GT – We would need to look at the list of species, as there are probably different risks for different species, and some may need quantitative approach, while others may be more qualitative.  TE – agreed that large numbers are not involved, then qualitative should be fine.  KT – Asked for a list of the species not covered by the 2014 report, and can check these against what NS have said for LSE Screening.</p> <p><b>ACTION: MG to provide list of species not included in 2014 report to NS</b></p> <p><b>ACTION: NS to provide advice on approach for species not included in 2014 report</b></p> <ol style="list-style-type: none"> <li>2. Replacement baseline survey months. RM2 included an action on how to account for 'missing' April surveys. Our approach taken is outlined on slide 3, can this be agreed?</li> </ol> <p>To be discussed under Topic 2</p> <ol style="list-style-type: none"> <li>3. In theory, birds displaced from other F&amp;T projects may lead to higher densities within the Berwick Bank area. Should this be accounted for in our project-alone displacement assessment, or can it be assumed that the displacement effects on these 'additional' birds have already been accounted for (i.e. the in-combination assessment considers displacement from their original sites)? If additional consideration is advised, what are their suggested approaches for estimating the effects?</li> </ol> <p>GT – Will respond to this after the meeting  <b>ACTION: NS, MSS and RSPB to provide response to Question 3 by 15 December 2021</b></p> <ol style="list-style-type: none"> <li>4. Can confirmation be provided that the SMP database should be the source for SPA seabird population estimates (with the most recent full counts to be used in each case)?</li> </ol> <p>GT – Yes, SMP database should be the source.</p> <ol style="list-style-type: none"> <li>5. Apportioning to age classes. Can NS/MS confirm the approaches to be used for this (e.g. from baseline surveys or stable age structures from population models)?</li> </ol> <p>MG extended question to be for which species should we use baseline surveys (suggested gulls and gannet) and use stable age structure for auks?</p> <p>GT – Yes, agree with this approach.  TE – Agree.</p>	<p>MG</p> <p>KT/GT</p> <p>NS, MSS and RSPB</p>

	<p>6. We propose that sabbatical birds are accounted for in PVA assessment. Should the rates be as assumed for the 2018 Forth and Tay assessments (mortality estimates of breeding adults adjusted downward, 10% kittiwake, 7% auk)?</p> <p>GT – Stated that these rates look correct but would need to consider the response further, after the meeting.          EK – Where assumptions are being presented based on previous F&amp;T assessment advice, it should be made clear where the advice has been taken from, as NS provide advice, but MSS and MS-LOT may have stipulated different advice after consideration. Source of advice needs to be confirmed in this case and other cases.          MG stated that these rates came from the MS Scoping Opinion on the revised F&amp;T designs and were applied in the Inch Cape and NNG assessments. Mortality was deducted before running the PVAs, although MS did have some questions about that at the time.          TE agreed with EK and said that there was a need to check which documents the quoted advice came from.</p> <p>It was agreed that SSE would clarify the source of advice for Questions 6 to 8 and circulate to MS and NS so that they can then provide some guidance on these questions.</p> <p><b>ACTION: SSE to clarify source of advice for Questions 6 to 8 of Slide 3 and circulate to MS and NS</b></p> <p><b>ACTION: MS and NS to provide guidance on Questions 6 to 8 of Slide 3</b></p>	<p>SSE</p> <p>MS/NS</p>
<p><b>2.00</b></p>	<p><b>Baseline: Survey Allocation (Slide 4)</b>          KM summarised the key points from Slide 4:          The aim was to have 24 consecutive months of survey but this was not always possible due to weather, Covid-19 restrictions and airport strikes. Therefore months where two surveys were undertaken were allocated to missed months as per Slide 4. 25 monthly surveys were taken in total.</p> <p>In addition, as there were two April 2021 surveys, it was decided that as this is the start of the third breeding season, just having April would not be representative of the whole breeding season. It was concluded that it would be better to allocate surveys to the missed March 2021 and April 2019 months, in order to have complete coverage for two full breeding seasons.</p> <p>GT responded that most of the suggested allocations looked ok but would need to discuss further and confirm after the meeting.</p> <p>MG stated that the idea is to ensure that each month is nominally covered by surveys over the two year period, and that there are probably few surveys that provide perfect coverage, so this approach seems reasonable where months were missed.</p> <p>EK stated that most missed surveys were covered by one a few days into the next month, but using April 21 for April 2019 requires further consideration, and that this will need further discussion.</p> <p>GT agreed with the need to discuss further.</p> <p>TE suggested that the approach was broadly OK but that using April 2021 for April 2019 was the most anomalous. Wondered if there were obvious differences between calendar years or if there was an option to just use one survey for April?</p> <p>Agreed that KM would provide additional clarifications on approach, and that NS/MS would discuss further before responding.</p> <p><b>ACTION: KM to provide additional clarifications on approach</b>  <b>ACTION: NS &amp; MS to discuss further and provide response</b></p>	<p>KM</p> <p>MS/NS</p>
<p><b>3.00</b></p>	<p><b>CRM Results (Slides 7 to 11)</b></p>	

	<p>AL provided brief overview of preliminary CRM results, however clarified that for some turbine models supplier data does not exist so engineers are developing parameters for these, and they may change.</p> <p>JO added that the focus here was to agree the use of generic flight heights and SNCB 2014 avoidance rates.</p> <p>TE stated that using the generic approach is OK but would also expect some discussion on flight height distributions. Results from visual and rangefinder trials looked broadly similar to generic results but HiDef estimates are much higher. He would like some understanding if this is a true difference and that there should be some consideration around that.</p> <p>GT agreed with TE.</p> <p>JO thanked TE &amp; GT for confirmation that the generic approach should be used, and mentioned the ongoing BTO review. Whilst the HiDef method has great potential in future, the outputs are not robust, approved estimates, and the errors in the models are very high, so it is not in the same order of magnitude in terms of precision. SSE are hoping to work with HiDef further to improve the model, but currently the errors are too large to be considered meaningful.</p> <p>TE asked if HiDef results could be compared quantitatively with numbers from other sites?</p> <p>JO stated that as this is still an experimental technique it is not ready yet and expressed concerns about using this experimental methodology even in a contextual sense. He suggested circulating the BTO draft review for consideration.</p> <p>MG added that as the generic data are “endorsed” by the SNCBs he would expect to use them in the assessment.</p> <p>TE stated that it wasn’t so much a question of using the HiDef approach instead of the generic approach, but that there is a need to understand the origin of the HiDef numbers.</p> <p>GHO agreed, and said that it would be good to see how the HiDef method performs in relation to other sites.</p> <p>JO said that SSE would proceed on the basis of using the generic approach, and that the draft BTO report would be circulated, as well as providing some context of how the HiDef method has been used elsewhere.</p> <p>CK agreed with TE about inclusion of the HiDef flight height data.</p> <p>JO stated that due to the potential issues with the HiDef approach, SSE were not proposing to present this data.</p> <p>RH stated that while he does not have an issue with helping to understand how these novel methods work, he has reservations on the inclusion of this as part of the application and that any assessment needs to be based on approved methods.</p> <p>GT questioned whether the CRM numbers included non-identified birds from similar species groups.</p> <p>JO confirmed that the numbers do not currently include non-identified birds, but that this work is ongoing.</p> <p>TE made the point that this wasn’t just a research question and that ideally MS would like to use site-based information in assessments, but that there are issues with this, and it would be good to understand any regional differences.</p> <p>KM stated that the paper it is an “experimental method” and that it is important to review the BTO report. Ultimately the HiDef site-based method has not been endorsed yet but it will be developed further.</p>	
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4.00	<p><b>Displacement (Slides 12 to 15)</b></p> <p>AL provided a brief overview of the range of displacement results, highlighting that the guillemot table included 0.5% mortality rate, based on the Hornsea 4 project work.</p> <p>GT stated that NS advice on using one displacement rate and two mortality rates per species had been provided to Marine Scotland.</p> <p>EK added that the information was presented as a very specific table, with rates.</p> <p>RH asked if SSE could have sight of that information, with caveats that the advice from MS could still change.</p> <p>GHo confirmed that MS-LOT had received the NS scoping representation yesterday. Once an initial review was completed, MS-LOT would consider the potential to share the NS scoping representation with SSE in advance of MS-LOT issuing the scoping opinion. GHo highlighted that if MS-LOT were able to share NS scoping representation it would include a caveat that this would not necessarily reflect MS-LOT's view in the scoping opinion to follow.</p> <p>TE – added that MS will consider what NS have advised in their scoping representation. He also queried the inclusion of the 0.5% mortality rate for guillemot on the basis that the available post-consent monitoring data only looked at displacement rates not mortality rates.</p> <p><b>ACTION: MS to review recommended displacement and mortality rates from NS and circulate SN and MSS advice.</b></p>	GHo/TE
5.00	<p><b>SeabORD</b></p> <p>GHu highlighted the issues in terms of how the SeabORD model is parameterised in relation the prey base. Currently the model is only parameterised for 4 species from only a few colonies, so extending it to run it in its full form for these 4 species across a wider range of SPA colonies would need a lot of input from CEH. However, it is also the case that the full model is currently under review, as part of its incorporation into the Cumulative Effects Framework (CEF) project.</p> <p>So the model can be run for other colonies but only in a very simplistic manner which is likely to give unrealistic results because of the assumed uniform prey distribution. Outputs would be driven largely by the decay in usage by birds with increasing distance from the colony.</p> <p>AM asked if GHu thought the simple SeabORD model was as simple as the matrix approach?</p> <p>GHu replied broadly yes, as the simple model does not account for variation in prey distributions and so there are similarities so the two approaches are similar.</p> <p>AM stated that there was a bit more to SeabORD than to the matrix approach.</p> <p>TE stated that the matrix approach isn't a model. In theory a simplistic model is probably informative but it may not be defensible to run it. He acknowledged that there are issues with running SeabORD and added that CEH don't appear to have time to take on the additional work required to address this issue and that the tool was being further improved as part of the CEF project.</p> <p>GHu stated that the largest issue is that CEH say not to use the tool but that he wasn't sure if that meant don't use the full version, or the simplistic version or both.</p> <p>TE asked if the emails from Francis Daunt (FD - CEH) on the issue could be circulated?</p> <p>AM said that we need clarification on the tool's use – which model do CEH advise not to run?</p> <p>RH stated that in discussions with FD on this, the CEH advice is to not use either form of SeabORD and so SSE are proceeding with the matrix approach.</p>	SSE

	<p>JO stated that clarification and emails on this would be circulated.</p> <p><b>ACTION: Circulate CEH clarification and emails re not using seabORD models</b></p>	
6.00	<p><b>MRSea</b></p> <p>KT stated that NS had not had time to pull together a response on existing MRSea questions but that they would do so.</p> <p><b>ACTION: NS, MSS and RSPB to respond to existing questions re MRSea by 15 December 2021</b></p>	NS
7.00	<p><b>MS Apportioning Tool</b></p> <p>As highlighted on slide 18 SSE are proposing to use the HiDef R code because the MSS tool can only be used for guillemot, razorbill and kittiwake, and because the MSS apportioning tool is giving some unexplained results.</p> <p>GHu stated that clarity was needed from MSS as to how the BIODIST tool was generated – need transparency on how this tool is generating distance estimates from SPA colonies to the BB site.</p> <p>TE queried whether GHu was talking about the Wakefield approach or the NS approach?</p> <p>GHu replied that HiDef had produced outputs for both methods.</p> <p>TE stated that you wouldn't expect the same results for these approaches.</p> <p>GHu agreed, and said that the issue was how distances to SPAs are generated as they can be 10-20km different to those measured by HiDef.</p> <p>TE suggested that some of this may be explained in the main report on the tool, and that the tool measures to the SMP subsite not the overall SPA, but wasn't sure if that would fully explain the differences.</p> <p>GHu asked if HiDef could look at the code used?</p> <p>TE stated that the input filters had been developed by BIOSS but that it would be OK for HiDef to contact Adam Butler at BIOSS to check if BioSS would make the code available.</p> <p>GT added that using the tool shows different distances to the same colony between species.</p> <p>JO proposed to have a further meeting on this after getting code from BIOSS?</p> <p>EK asked if NS and MS could be kept in loop re discussions between HiDef and BIOSS as this is needed for their audit trail.</p> <p><b>ACTION: GHu to discuss BIODIST tool with Adam Butler of BIOSS</b></p> <p><b>ACTION: GHu to inform MS/NS as to outcome of this discussion</b></p> <p><b>ACTION: SSE to arrange follow-up meeting with MS/NS to discuss outcome and how to proceed</b></p>	GHu GHu SSE
8.00	<p><b>In-Combination Assessment (Slide 22)</b></p> <p>MG talked through the questions on this slide.</p> <ol style="list-style-type: none"> <li>Are different in-combination permutations required (e.g. Forth &amp; Tay revised assessments considered 'Forth &amp; Tay region' and 'UK waters')</li> </ol> <p>EK confirmed that both permutations would be required</p>	



<p>2. What stage of projects to be included – e.g. built and consented or built, consented and in planning (projects at PEIR, submitted EIAs)?</p> <p>EK stated that there was greater clarity in Scotland of what is finally built-out.</p> <p>MG agreed and said that in England, numbers would be refined down substantially between PIER submission and examination.</p> <p>EK suggested that all projects could be identified along with what stage they are at, and that this list could be submitted to NS so they can provide a forecast of what information is needed for the CEA?</p> <p>MG said that he thinks that information is ready to go, and that there are a couple of big English projects where he could present numbers with caveats. But the key thing is where to draw the line in final numbers – should this be based on all projects? Or cut off before that – using the numbers we have more confidence in?</p> <p>EK suggested a mix of quantitative and qualitative should be used here – if MG can provide a context paper - this is probably best way to move forward.</p> <p>MG agreed this was a useful steer but noted the issues with having to use mean max foraging range plus 1 SD as this pulls in more English sites in the breeding season (with implications for effects of including projects that have not gone through examination).</p> <p>GT – agreed with EK’s suggested approach – if MG submits a list then they can advise on what is appropriate to include.</p> <p><b>ACTION: MG to submit a list of projects and stages to NS, MS and RSPB</b></p> <p><b>ACTION: NS, MS and RSPB to provide advice on which projects should be included</b></p> <p>3. In-combination collision totals - consented or ‘as-built’ designs?</p> <p>GHo stated that in Scotland as-built is OK or using the layout plan is ok, as both are based on consent. In England it is less clear.</p> <p>EK agreed.</p> <p>GHo highlighted that Inch Cape still has two consents – one from 2014 and one from 2017 so would advise, as per the previous Berwick Bank scoping opinion, that SSE should pick the worst case.</p> <p>MG said that he had intended to use the 2017 consent, based on the building 2014 design being very unlikely.</p> <p>EK suggested that Inch Cape could be approached and asked if they consider it likely that 2014 would ever be built?</p> <p>GHo said that ICOL may have a design specification and layout plan by the time Berwick Bank is determined but don’t just now so would have to include both consents in an assessment just now, which would allow the appropriate assessment to include the relevant information at the time it is completed</p> <p><b>Action: SSE to seek clarification from Inch Cape on what can be confirmed in relation to which design will be built out.</b></p> <p>4. Small projects – e.g. Kincardine, EOWDC. Qualitative consideration (as per Forth &amp; Tay assessments)? Displacement estimates required?</p>	<p>MG</p> <p>NS, MS and RSPB</p> <p>SSE</p>
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<p>MG stated that as displacement from smaller projects would be relatively minor, is there a need to incorporate quantitatively? It could be pretty difficult to extract numbers from original assessments? Simplest approach would be to follow the precedent advised for the assessments for the revised F&amp;T designs.</p> <p>EK asked if figures would be in the Appropriate Assessments for these smaller projects?</p> <p>GHo said that yes, the AAs are online and should contain this information, so no need to reassess – this would be better than qualitative.</p> <p>MG said that you don’t always get what you need from the AAs – there might not be displacement estimates for all species e.g. gannets in Moray Firth</p> <p>EK said that it would be worth identifying any such gaps and flagging these.</p> <p><b>In-Combination Assessment (Slide 23)</b> MG talked through the questions on this slide.</p> <ul style="list-style-type: none"> <li>• c.50 SPA populations to be considered for in-combination effects (potentially)</li> <li>• High proportion – connectivity non-breeding season and/or breeding season due to use of mean max +1SD foraging range.</li> </ul> <p>MG – the issue here is using the +1SD with the mean max foraging range, as this is pulling in lots of additional SPAs. The project alone effects are likely to be small for the more distant colonies, but sometimes these small effects are added to an existing large effect from other projects, so may need to do additional PVAs and ‘fuller’ assessment as a result – is there a practical way to address this problem (given the large number of sites that may need to be considered)?</p> <p>EK agreed that she could see the issue but this is what the regulations require to make sure that 1,000 small cuts don’t add up to a big issue. EK then asked if MG had any suggestions.</p> <p>MG – One thought would be to use existing assessments where project alone effect is very small – we could just rely on existing (i.e. most recent) assessment of the in-combination effects, on the basis that what is being added to the existing assessment would not change the conclusions of that assessment?</p> <p>GHo raised the idea of considering that existing operational projects would be considered as part of the baseline, and so wouldn’t need to be included in in-combination effects?</p> <p>MG replied that the standard approach has been that all existing projects are still considered for the in-combination in assessments.</p> <p>TE said that as existing projects are still having operational impacts, he couldn’t see how you could consider them as part of the baseline.</p> <p>RH said that this has been used for newly designated SACs, where the baseline would be taken as whatever was present before designation.</p> <p>EK said that it depends on how you define the baseline – and the baseline could be viewed as now taking account of operational wind farms?</p> <p>GHo – So instead of the PVA comparing population with no wind farm effect to a population effect with a wind farm, you would have a population with existing wind farms compared to a population with existing wind farms plus new wind farms. This hasn’t been discussed between MS and NS though.</p> <p>MG commented that this would be quite a big shift in approach.</p>	<p>SSE</p>
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	<p>EK – not for Scotland. It would be a shift from what happens in England, but not for Scotland (due to the difference in the presence of operational wind farms – i.e. to date, there have been few of these in Scottish waters to account for within in-combination assessments).</p> <p>MG suggested that this should be discussed further.</p> <p><b>ACTION: Arrange meeting for further discussion of baseline definition for in-combination assessment</b></p> <p><b>Species specific issues (Slide 24)</b></p> <ul style="list-style-type: none"> <li>Gannet and breeding season displacement</li> <li>Lesser black-backed gull – collision estimates not available for Forth &amp; Tay revised designs.</li> </ul> <p>MG suggested that due to time, he'd be happy to receive comments on these points in a few days.</p> <p>GT – agreed that he would send on a response. TE – agreed.</p> <p><b>ACTION: MS/NS/RSPB to provide response to species specific questions on Slide 24 by 15 December 2021</b></p>	MS/NS/RSPB
9.00	<p><b>AOB</b></p> <p>GHu – asked for clarification that there would be a further technical meeting to discuss MRSea and SeabORD</p> <p><b>ACTION: Arrange technical meeting to discuss MRSea and SeabORD</b></p>	SSE

### Actions

No.	Action	Owner
1	Provide list of species not included in 2014 migratory bird CRM report to NS	MG
2	Provide advice on approach for species not included in 2014 report	KT/GT
3	Provide response to Question 3 (Displacement from projects close to BB)	GT
4	Clarify source of advice for Questions 6 to 8 of Slide 3 and circulate to MS and NS	SSE
5	Provide guidance on Questions 6 to 8 of Slide 3	MS/NS
6	Provide additional clarifications on approach to use of monthly data	KM
7	NS & MS to discuss further and provide response on this approach	MS/NS
8	MS to review recommended displacement and mortality rates from NS and circulate to SSE if possible	GHo/TE
9	Circulate CEH clarification and emails re not using SeabORD models	SSE
10	NS to respond to existing questions re MRSea	NS
11	Discuss BIODIST tool with Adam Butler of BIOSS	GHu
12	Inform MS/NS as to outcome of this discussion	GHu
13	Arrange follow-up meeting with MS/NS to discuss outcome and how to proceed	SSE
14	Submit a list of in-combination projects and their planning stages to NS	MG
15	Provide advice on which projects should be included	NS
	Seek clarification from Inch Cape on what can be confirmed in relation to which design will be built out	SSE
16	Arrange meeting for further discussion of baseline definition for in-combination assessment	SSE
17	Provide response to species specific questions on Slide 24	GT/TE
18	Arrange technical meeting to discuss MRSea and SeabORD	SSE

### Meeting Notes

**Subject:** Berwick Bank Wind Farm Ornithology Roadmap Meeting 5

**Location:** Teams

**Meeting Date:** 31<sup>st</sup> January 2022

**Minuted by:** Colin Barton

**Doc Ref:** LF000010&11-DEV-CON-417

**Issued on:** 3<sup>rd</sup> February 2022

**Attending:**

**SSER:**

- Ross Hodson (RH) – Lead Consents Manager for Berwick Bank Wind Farm
- Andrew Logie (AL) – Offshore Consents Manager for Berwick Bank Wind Farm
- Louise Davis (LD) – Lead Consents Manager – Berwick Bank Wind Farm
- Emily Nelson (EN) – Ecology Manager

**External:**

Marine Scotland (MS):

- Gayle Holland (GHo)
- Tom Evans (TE)
- Kerry Bell (KB)

NatureScot (NS):

- Karen Taylor (KT)
- Erica Knott (EK)
- Glen Tyler (GT)
- Caitlin Cunningham (CC)

RSPB:

- Catherine Kelham (CK)
- Aly McClusky (AM)

SSER External Consultants:

- Murray Grant (MG) – RHDHV
- Kelly Macleod (KM) – HiDef Surveying
- Martin Scott (MS) – HiDef Surveying
- Colin Barton (CB) – Cork Ecology
- Philip Bloor (PB) – Pelagica
- James Orme (JO) – Juno Energy (Chair)
- Lizy Gardner (LG) - RPS

Item	Task Definition	Actioned Person(s)
1.00	<p><b>Review of RM4 Actions</b></p> <p>AL gave a brief review of the outstanding actions from Road Map Meeting 4</p> <p>Actions 12 &amp; 13 – these concerned the MS Apportioning tool and contact with Adam Butler at BIOSS. This has been deferred to the Tools Workshop in late February.</p> <p>Action 16 – Inch Cape consents – SSE emailed Inch Cape re which live consent should be considered in the CEA but have had no response.</p> <p>GHo confirmed that MS had had discussions on the matter and that the 2014 consent did not need to be considered and that the 2019 consent should be used. To date there has not been a request to extend the commencement of the development within the ICOL 2014 consent beyond October 2021. A letter confirming this is being prepared.</p> <p>EK asked if this letter could be circulated to all relevant parties. GHo confirmed that this would be done.</p> <p><b>ACTION: MS to circulate letter confirming that Inch Cape 2014 consent does not need to be considered</b></p>	GHo
2.00	<p><b>Refined CRM Results (Slides 3 &amp; 4)</b></p> <p>KM summarised the key points from Slides 3 &amp; 4:</p> <ul style="list-style-type: none"> <li>SSE have reviewed turbine parameters;</li> <li>Densities have been rerun to incorporate unidentified birds – this has led to slight changes in density estimates.</li> <li>Only densities from the Array Area have been used.</li> <li>Gannet has been changed from “flapping” to “gliding”</li> <li>Nocturnal gannet activity has been applied at 8% for breeding season and 3% in non-breeding season (by applying values of 1.32 and 1.12 respectively in the Band spreadsheet), so gannet collision numbers have changed slightly.</li> <li>Overall, 14MW turbines generated the highest collision estimates.</li> <li>Slide 4 - Graph shows that there is a decline in the number of collisions as turbine size increases.</li> </ul> <p>EK stated that numbers were still high.</p> <p>TE asked what the phrase “total wind farm context” meant on Slide 3.</p> <p>JO explained that the site is able to accommodate a certain number of turbines, based on the turbine size and spacing, therefore the context is turbine size and the number of turbines.</p> <p>CK asked why the collision rate increases for the 18MW machines for kittiwake and gannet and possibly other species?</p> <p>JO explained that it was because the 14 and 15MW machines exist therefore the parameters are known. However, parameters for the remaining turbine models have been calculated on likely design. While it is highly likely that parameters for the larger turbines are less impactful than the 15MW machine, the engineers cannot currently confirm this. It is more that estimated collisions from the 15MW machine are lower than the graph line between 14MW and 18MW machines, as the 15MW machine has a smaller chord width and faster rotation speed. Engineers are not able to say that bigger turbines will be able to use the narrow chord of the 15MW machine, so they’ve gone with a design more similar to the 14MW machine, so estimated collisions are a bit higher.</p>	

	<p>All turbine modalities (fast speed and narrow chord vs slower speed and wider chord) will be presented in the CRM report.</p> <p><b>Summary</b> Revisions to the CRM approach were outlined, including updates to the turbine parameters and some species settings, and there was agreement with all parties on these.</p>	
3.00	<p><b>Ecosystem Approach (Slides 5 to 8)</b></p> <p>AL provided an overview of what has happened so far with the development of the Ecosystem Approach assessment.</p> <ul style="list-style-type: none"> <li>Not asking for ecosystem services or economic valuation</li> <li>Focus should be on predator/prey impacts and climate change across all chapters not just birds</li> <li>Various tools have been considered but are not particularly relevant</li> <li>The use of models has been ruled out as none suitable.</li> </ul> <p>LG then gave an overview of the proposed approach: The proposal is to prepare an Inter-related Effects chapter in the EIA Report, which will include a narrative description and a literature review. The assessment will draw on a range of topics to provide a holistic overview of ecosystem level impacts.</p> <p>KT – Stated that NS agree with the assumptions outlined on Slide 5, and also agree with the statement that there is a lack of suitability of existing options (Slide 6). The MarPAMM outputs will be helpful, as will input from the ScotMER project “Study to examine the impact of climate change on seabird species and integration into PVA”. The report on this project may be available in time.</p> <p><b>ACTION: MSS to confirm when final report on ScotMER PVA project will be available</b></p> <p>KT also mentioned a study using the Bayesian framework being undertaken by Aberdeen University and that NS would try to provide more information on that. Overall, the proposal is along the same lines as NS are thinking.</p> <p><b>ACTION: NS to confirm what work on Bayesian framework has been done to date</b></p> <p>EK made the point that this will be one of the first times that this will have been done. EK also asked about the narrative description, and if there were any elements of the topics that it would be good to get information on?</p> <p>LG stated that the prey resource will be the main focus, especially sandeels, and asked if there was any information available?</p> <p>EK then stated that what NS are interested in is what are the predators? What are the prey species? How does the whole food chain operate? What other pressures are on these prey species? For example certain fish prey on other fish species – what are all the impacts on prey species before an OWF is built? What effect will an OWF have on these prey species, in relation to these other impacts? What are the knock-on effects on predators? If prey species increase following construction of an OWF, where are they? Does this new distribution draw more predators in?</p> <p>KT added that there are a number of strands of work that need to get tied off, for example there are set assessment tools that are used but these also need to consider climate change implications too. Additional detail on how these strands are tied off would be good – maybe as spider diagrams? But it is not a set process and acknowledge it is difficult.</p> <p>LG asked if there were any sort of assessments that NS might have seen? Any examples of a similar approach?</p>	TE       KT

	<p>AM stated that the key to this is the bullet on Slide 4 where it states “Assessment will draw upon physical processes, benthic, fish &amp; shellfish, marine mammal and ornithology assessments to provide a holistic overview of ecosystem level impacts” – for example if there are changes in water flow effects – how do these affect plankton distribution? How do changes in plankton distribution affect sandeel distribution and hence kittiwake distribution?</p> <p>Need to consider positive/negative effects from prey changes on kittiwakes in relation to CRM and also climate change.</p> <p>LG stated that there would be a climate change chapter in the EIA Report too.</p> <p>JO queried how the extent of assessment should be decided upon, ie where the line should be drawn about what to include, and suggested for example, the idea that there would be a noticeable effect on plankton distribution from water flow as a result of the turbines was unlikely – in his opinion, there are unlikely to be any measurable effects on something like that.</p> <p>AM stated that these scenarios need to be investigated to an extent, and then an explanation given as to why there is not likely to be any effect. But it can be shown that consideration has been given to each of these topics and its ok to draw the line at particular points. The regulators may not agree with where the line is drawn but that’s a discussion point.</p> <p>LG asked if “not significant by EIA thresholds” could be used as an indicator of “the line”?</p> <p>EK stated that care would be needed with that approach as shellfish/fish would often be prey species. EK suggested that Dutch or Norwegian EIA/SEA reports may have some examples of this approach.</p> <p>GHo added that it is important to recognise uncertainty in the process, e.g. at Beatrice where slight changes in sediments have seen large 10x fold increases in sandeels post-construction, although recognising that this is the results of a single post construction survey.</p> <p>TE provided links to two examples that may be useful in for the Ecosystem Approach:</p> <p>The first is a project looking at ecosystem level and integrating climate change – focused on tidal and wave but may give inspiration – <a href="https://masts.ac.uk/research_projects/ecowatt-2050/">https://masts.ac.uk/research_projects/ecowatt-2050/</a></p> <p>The second is some Dutch work on ecosystem effects - <a href="https://www.noordzeeloket.nl/en/functions-and-use/offshore-wind-energy/ecology/offshore-wind-ecological-programme-wozep/reports-on-ecosystem-research/">https://www.noordzeeloket.nl/en/functions-and-use/offshore-wind-energy/ecology/offshore-wind-ecological-programme-wozep/reports-on-ecosystem-research/</a></p> <p>Summary The proposed approach for assessing the Ecosystem Approach was outlined, discussed and agreed between all parties. The approach will involve preparing an Inter-related Effects chapter in the EIA Report, which will include a narrative description and a literature review. The assessment will draw on a range of topics to provide a holistic overview of ecosystem level impacts.</p>	
<p><b>4.00</b></p>	<p><b>Project Decisions made – Slide 9</b></p> <p>JO outlined that the points on the following slides were project decisions made by SSE due to time constraints.</p> <p>KM summarised the approach for the use of apportioning tools: “The SNCB apportioning matrix will be used for all species except Kittiwake, Guillemot and Razorbill which will use the existing MS apportioning tool as requested by consultees.”</p> <p>KT thought that this approach looked OK. GT confirmed that this approach was OK but also made the point that there might be further discussion in relation to this at the February Tools Workshop so there could be some changes to the advice arising from that.</p>	

	<p>EK asked if the Project had received the Scoping Opinion yet from MS?</p> <p>GHo confirmed that the Scoping Opinion will be issued later this week and that the EIA Report must be based on the advice given in the Scoping Opinion. MS have tried to be as clear as possible in the Scoping Opinion, but it has been hard to keep track of all decisions. Some decisions are clear and some are still under discussion. GHo and KB both agreed that the above approach was OK.</p> <p>KM outlined the approach for the displacement assessment: “The displacement assessment will use the displacement matrix approach (NatureScot) rather than SeabORD tool as the tool is not currently able to be used with the confidence required by the project team.”</p> <p>GHo stated that there would need to be follow-up discussion on this point as MS will be looking for a SeabORD assessment at some stage, after discussion it was clarified that the use of SeabORD would be requested if it was confirmed to be achievable.</p> <p>JO made the point that there are strong drivers for the project to move at its current pace and that there were hard limits of availability of technical input from CEH to carry out the required updates. He confirmed that the message from MS was that they would want it done, if possible.</p> <p>GHo stated that the final advice will be in the Scoping Opinion, however highlighted that NS and MS-LOT provided written confirmation of their views to SSE last week and the Scoping Opinion would reflect these.</p> <p>AM asked about clarifications of the difficulties of using SeabORD, adding that it can be run as a simplified version, which would still be more robust than the Matrix approach. AM also asked if it was possible to see the correspondence between SSE and CEH re the use of SeabORD. The RSPB view is that the basic version of the SeabORD tool is preferable to using the Matrix approach.</p> <p>KM stated that it wasn’t clear from previous Road Map discussions whether the basic model of SeabORD would be acceptable, and that there had not been a clear steer on that.</p> <p>TE commented that there are many different ways to run the SeabORD tool but that this would need to be discussed at the upcoming Tools Workshop.</p> <p>RH said that SSE did get correspondence from CEH that both models would need a considerable amount of work.</p> <p>AM made the point that the new version of SeabORD will be better but that the more basic version would still be more robust than the Matrix approach, which is just so simplistic and primitive. SeabORD run in a ‘simplified manner’ is likely to be more robust. AM then asked for clearer justification on using the Matrix approach over the simple SeabORD model.</p> <p>EK said that this has been raised before, and added that even if the simple SeabORD model was used, it wouldn’t be for all species but should be used for some species. EK then asked what is practical to be used for what species? This shouldn’t be delaying the work, but need to make sure that the right approach is being used for this. EK then stated that the NS advice has not been inconsistent, as they have been asking why SeabORD cannot be used. As TE &amp; AM have said, it is possible to run SeabORD simplistically.</p> <p>AL said that that the email correspondence between SSE and CEH was circulated around the group [email sent 14/12/21]. AL added that he understood that the ‘simplified model’ would still need input from CEH.</p> <p>RH agreed and said that CEH had said that for both instances of the SeabORD model there would be an amount of additional data and calibration required from CEH but that this was not possible within the timescales that BB are hoping to achieve, due to no UKCEH availability to complete the necessary calibration.</p>	
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	<p>JO summarised the discussion so far – MS would like to see a version of SeabORD used and that there will be a formal position given in the Scoping Opinion. The project position is that it is not possible to use even the simple SeabORD model as it requires input from CEH which isn't currently available.</p> <p>KM summarised the approach for the use of design-based densities:          "Design-based densities will be used rather than MRSea as the MRSea code is not currently able to be reliably executed to give results with the confidence required for this consent application"</p> <p>GHo stated that a final MS opinion will be given in the Scoping Opinion, and highlighted that technical details will be discussed at the February Tools Workshop. The MS advice is that MRSea is the preference, but MS will accept design-based densities if it is not possible to use MRSea.</p> <p>KT agreed for NS and AM agreed for RSPB.</p> <p>KM summarised the approach for the use of 98% avoidance rate for terns:          "The application will use 98% as an appropriate avoidance rate for terns and is considered to be appropriate and adequately precautionary."          KB asked for input from NS and RSPB. GT stated that 98% was good and AM stated that 98% was acceptable.</p> <p>KM summarised the approach regarding high pulses of auk numbers:          "A high pulse of guillemot during the post breeding dispersal period &amp; moult periods was difficult to define when considered in detail by the project Ornithologists. It was concluded that the existing allocation and assessment of breeding and non-breeding seasons offers the most appropriate method."</p> <p>GT said that this involved high counts of auks in the post-breeding season, in August and September but not October. There is no formal definition of this, but high numbers in late summer (August and perhaps September) could be considered as non-breeding season, if not presenting as post-breeding season. Could present large numbers in August as post-breeding season, but September/October would be in the non-breeding season.</p> <p>AM agreed with GT.</p> <p><b>Summary</b>          There was agreement on the use of the SNCB and MS apportioning tools. This was followed by discussion about the use of the SNCB matrix approach and SeabORD in the displacement assessment but no agreement was reached. If it is possible to do, MS would like to see a version of SeabORD used and that there will be a formal position on this given in the Scoping Opinion. The project disagreed as it is not possible to use even the simple SeabORD model as it requires input from CEH which isn't currently available within the timescales proposed for the BB application.</p> <p>There was a short discussion about the use of MRSea or design-based densities, which reached the conclusion that the MS advice is that MRSea would be preferred, but MS will accept design-based densities if MRSea is not able to be used effectively. The project agreed with this approach.</p> <p>The use of 98% avoidance rate for terns was agreed between all parties.</p> <p>With respect to treatment of high counts in post breeding season, high densities apparent in September and October for guillemot and these are treated within the non-breeding season. A "high pulse" in August for guillemot was not evident in the data and therefore, concluded it was not necessary to treat August as non-breeding. This approach for how to treat high numbers of auks in late summer was outlined and agreed between all parties.</p>	
5.00	<p><b>Project Decisions made – Slide 10</b></p> <p>MG presented a summary of bullet points of further decisions made on Slide 10:</p>	

	<p>"No additional mortality from displacement during the non-breeding seasons for kittiwake, gannet and puffin. This accords with the previous advice provided to the Project (including at previous RM meetings and as documented from these meetings), as well as with the advice for previous projects." MG highlighted that previous discussions with NS and MS suggested that assessment of non-breeding season displacement effects for kittiwake, gannet and puffin wasn't required. [This refers to advice from NS received on 7/10/21 in a spreadsheet "2021 10 07 Berwick Bank – Ornithology Road Map 3 – Further HiDef questions – NatureScot advice – AS SENT (A3561654)(1).xlsx", which was sent following the Road Map 3 meeting. This followed a clarification request at Road Map 3 for confirmation of the species and seasons to be considered for displacement assessments. Cell H18 of the spreadsheet states "Breeding and non-breeding season for Common Guillemot and Razorbill - all others breeding season only."] The email was circulated on 7/10/2021 to MS, RSPB and SSE by NS.</p> <p>GHo stated that further discussion was required on this point.</p> <p>GT stated that advice for previous projects has been that this approach was acceptable however it is a big project therefore it is OK to look at this again and assessment will be required.</p> <p>MG suggested that a qualitative displacement assessment might be required but not quantitative, and that previous Road Map meetings had stated assessment was required for these species in the breeding season only, so he wasn't sure why the advice has changed.</p> <p>GT stated that he would have to check back and clarify this.</p> <p>MG said that he was surprised that non-breeding season assessment was now being asked for. In the Forth and Tay advice, quantitative assessment was not needed for the breeding season, and this was also the advice received in previous Road Map meetings.</p> <p>EK replied that there are results coming in from operational OWFs and that this change in advice may be linked to that – would need to check.</p> <p>TE couldn't remember this advice being reviewed and wondered if it was anything to do with requests from Natural England (NE)?</p> <p>AM couldn't remember but stated that the RSPB position would be that if these species are present in the non-breeding season then they should be considered, and that this was particularly the case for gannet.</p> <p>MG responded that he didn't think this had come from NE, as there is nothing on this in any scoping advice that he has seen. Also NE don't consider kittiwake displacement effects (for either the breeding or non-breeding seasons). Re gannet displacement – yes, gannets are displaced but the key thing is, is there considered to be any effect on mortality rates as a result? Up till now it has been breeding season only (and the NatureScot position on there being breeding season effects represents a recent change in position in itself, and to date has been justified on the basis of the large scale of the BB development).</p> <p>JO asked MG for further justification of the SSE position, in that this wasn't just about precedent.</p> <p>MG stated that this would be a change in precedent but that the precedent was based on good grounds, e.g. puffin are widely dispersed in the non-breeding season, while for gannet, the argument is that it is a wide-ranging species so that it is not considered that displacement would result in population level effects in the non-breeding season, so it is not just based on precedent.</p> <p>KT stated that they would go back and look at this and come back with greater clarity but added that in the NS Scoping Advice it states that an assessment is not required for puffin in the non-breeding season.</p> <p><b>ACTION: NS to clarify advice for kittiwake and gannet in the non-breeding season</b></p> <p>MG then summarised the second point on Slide 10:</p>	KT/GT
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“Results for the effects of displacement will be presented in the EIAR according to the rates advised (except as indicated above). However, based upon the strong precedent from previous offshore wind projects in Scottish waters, estimates of annual mortality due to displacement to be taken through to PVAs will be based upon the following mortality rates:  
 For guillemot and razorbill, 3% in the breeding season and 1% in the non-breeding season, given advice to previous projects has been for a 1% rate (in both seasons)

- 3% for puffin (breeding season), given advice to previous projects has been for a rate of 2%
- 2% for kittiwake, given this accords with the advice to previous projects
- 1% for gannet (breeding season), noting that previous advice was that displacement would have no detectable effects on mortality (suggesting that a rate of 1% for use within the PVAs is most reasonable)”

The rates that will be used in the PVA are less of a change than has previously been advised and are closer to what the project considers is sufficiently precautionary.

JO made the point that the number of PVAs required is already very high because of the large numbers of SPAs to consider. There will be PVAs for the project alone, the project plus Forth and Tay projects and also the project plus other North Sea projects, so a large volume of PVA work is required.

GHo stated that this was not something that would be resolved in the Scoping Opinion, which would instead indicate that further discussion was required, in particular with regard to gannet.

EK returned to the previous discussion and clarified that as per the NS scoping advice, assessment of puffin in the non-breeding season is not required. Advice for gannet and kittiwake in the non-breeding season will be discussed with MS and RSPB, and then clarified.

Returning to the percentage mortality rates, GT said that previous discussions had recommended that a range of mortality rates should be presented and discussed. In the latest advice this has been narrowed down to two values for auks.

MG asked how does that fit with what the project is proposing?

JO added that a single value was required for the PVA work.

GT stated that when making estimates as to what mortality may be it was important to try and be realistic. NS want to err on the side of caution so the higher number could be used for the PVA work, if it is only possible to use one number.

JO asked for a discussion about levels of precaution.

MG agreed that there is no empirical evidence for mortality rates, as GT had said. However, where the precaution comes in is in the displacement rate e.g. 30% for kittiwakes and 60% for auks are likely to be precautionary values because the evidence for displacement of kittiwakes is equivocal and there is some work suggesting that 60% for auks is too high.

So the displacement rates are precautionary and the mortality rates should come down to expert judgement. Previous advice for the Forth and Tay projects was to use 1% - why has this judgement changed from 1% to 3%? 5% is an even larger jump – 3% would seem to be a more reasonable increase from 1%.

GT stated that there have been studies that show that birds lose weight and those experiencing greatest weight loss have poorer survival rates. Displacement could increase the extent to which breeding seabirds suffer weight loss. Modelled data from SeabORD suggests that mortality due to displacement may be higher than 1%.

JO asked for a reference for this work. GT stated that this work has been conducted by CEH.

MG stated that the SeabORD outputs to date used a body weight - survival relationship from a study on puffin in Norway. CEH have since undertaken analyses of body weight - survival relationships for guillemot, puffin and kittiwake on the Isle of May, with these analyses giving weaker effects of body weight on survival

than that used in SeabORD to date. If SeabORD was re-run based on these Isle of May data then it would not give such large mortality effects. However, MG had not seen any outputs from SeabORD based upon the revised body weight-survival relationships and so accepted that he did not know to what extent this would affect the predicted mortality rates.

TE provided a link to the CEH report on this - <https://data.marine.gov.scot/dataset/improving-estimates-seabird-body-mass-survival-relationships>

GT agreed but said that the SeabORD reruns are not available so it is not possible to know what the results would look like.

TE stated that there is evidence that birds that are working harder during the breeding season experience a higher winter mortality, but that this effect may be smaller for the Isle of May, based on revised body-mass survival relationship analysis. There have been limited comparisons of the matrix approach and SeabORD. SeabORD works out the mortality rate which is generally higher than mortality rates that have been recommended previously for the matrix approach. TE would support the use of both mortality rates in the PVA work. TE added that in terms of SeabORD vs Matrix Approach assumed displacement mortality the SEANSE study is relevant (see especially table 16 therein) - <https://www.gov.scot/publications/scottish-waters-east-region-regional-sectoral-marine-plan-strategic-ornithology-study-final-report/>

JO surmised that Nature Scot seemed to be primarily requesting higher displacement mortality rates for the matrix method on the basis of making the output more closely match the SeabORD outputs and that the SeabORD outputs are inferring displacement mortality rate using data from body weight - survival relationships from a single Norwegian study on puffin. GT agreed with this summary.

MG stated that in the Inch Cape assessment, and SEANSE comparison, for some SPA populations, the SeabORD mortality assessment was suggesting a very unrealistically high number of birds from SPAs, and highlighted that although SeabORD has a much better biological basis than the Matrix approach it still involves making key assumptions and there is considerable uncertainty associated with its outputs, so potential for over-estimation of mortality.

GT said that this had been a useful discussion, but there was a need to base the approach on the best evidence that we have, and that there is a need to be precautionary to be certain that there are no adverse impacts on SPAs.

TE said that there wasn't much more to add – if there is loss of habitat then this will change the carrying capacity of the area.

JO asked if providing further justification on the SSE approach would be useful?

GT replied that that would be a way forward. The current rates are the current advice, but if SSE want to have further discussion then we can do that.

EK made the point that there will need to be a lot of PVA outputs because there is concern about the SPAs, and highlighted that a range of PVA outputs could be useful, as otherwise, NS will have to work off the worst case.

**ACTION: SSE to provide further justification on the reasons not to use the 5% mortality rate**

**Summary**  
 There was discussion about the need to undertake displacement assessments for kittiwake, gannet and puffin in the non-breeding season. It was agreed that this is not required for puffin (as per the NatureScot scoping advice). However, an agreement was not reached for kittiwake or gannet. The project position is that recent advice to include assessments of kittiwake and gannet in the non-breeding season has changed from previous advice that this wasn't required. NS agreed to discuss this further with MS and RSPB and clarify.

SSE

	<p>There was discussion about which mortality rates to use in the displacement assessment and PVA work but agreement was not reached on this issue. The project considers that 5% mortality for guillemots and razorbills is unprecedented and overly precautionary, and based on results from SeabORD which is not appropriate to rely upon, while NS consider that using this 5% value adheres to the precautionary approach. It was agreed that the project would provide further justification on why the 5% mortality rate should not be used.</p>	
<b>6.00</b>	<p><b>Project Decisions made – Slide 11</b></p> <p>KM then outlined the approach for PVA thresholds: “PVA threshold- SSE proposes to use the threshold advised in NS’s scoping advice - i.e. a 0.02 percentage point change in baseline mortality rate. This will be calculated as the predicted additional mortality (in terms of the number of adult birds) expressed as a percentage of the number of adult birds in the SPA population.”</p> <p>GT stated that this interpretation was correct. TE stated that he was happy with this approach.</p> <p>MG outlined the approach for CRM density values: “CRM density values: SSE proposes to use the monthly mean value from across the 2 years for each month, which aligns with approaches in previous Scottish assessments. Therefore, the Project CRMs will be based upon the mean monthly values” MG added that in the NS scoping advice it states maximum monthly value should be used, but SSE are proposing to use mean monthly mean value.</p> <p>GT said that the reason for using the maximum value is because there are two years of survey data and for one of the survey years, the maximum value is higher than the mean value. Advice is to use the maximum value due to the scale of the project. GT added that he would need to check if this is different from previous advice.</p> <p>PB stated that he had not seen this before – in his experience it has always been monthly mean that has been used.</p> <p>GT repeated that he would check the previous advice.</p> <p>MG stated that the SNH advice in the Forth &amp; Tay Scoping Opinion was to use maximum monthly value but that MS had stated in the Scoping Opinion that the mean monthly value should be used.</p> <p>GT said that he would have a look at the consistency of the advice. EK confirmed that NS will check what they have said previously and let MS know.</p> <p><b>ACTION: NS to check previous advice regarding use of maximum or mean monthly densities for CRM and confirm current advice with MS</b></p> <p><b>Summary</b> The use of a 0.02 percentage point change in baseline mortality rate for PVA thresholds was discussed and agreed with all parties.</p> <p>The approach for CRM density values was discussed however agreement was not reached on this issue. The project considers that mean monthly value should be used, as there is consistent precedent for this in other project assessments. However, NS recommend using the maximum monthly value. As a way forward, it was agreed that NS would check previous advice regarding use of maximum or mean monthly densities for CRM and confirm current advice with MS.</p>	GT/EK
<b>7.00</b>	<p><b>Discussion of outstanding issues (Slide 12)</b></p> <p>The first four points on Slide 12 have already previously been clarified. MG gave an overview of the species-specific advice still required: “Advice still required on the species-specific questions raised on the approach to in-combination</p>	

	<p>assessments at RM4 – i.e. (i) gannet and breeding season displacement (availability and inclusion of estimates from other sites) and (ii) lesser black-backed gull collision estimates for Forth &amp; Tay revised designs.” MG stated that a follow-up question is – would the project re-assess other projects e.g. for gannet displacement at the Forth &amp; Tay projects?</p> <p>GT confirmed that the displacement effects should be calculated for the other proposed and existing projects.</p> <p>MG expressed surprise at this as the assessment has already been done on those projects, and it is not usual practice to re-work the findings from previous assessments when considering the in-combination effects.</p> <p>JO asked if we could rely on the information in those EIAs for purposes of re-assessing such effects? EK confirmed that it was necessary to do so.</p> <p>KM asked if the displacement should be calculated using the matrix approach? Or SeabORD too?</p> <p>EK asked what SSE were expecting to do?</p> <p>MG responded that his understanding was that the NatureScot scoping advice for the original iteration of the Berwick Bank project (i.e. from late 2020) was that they originally did not consider a need for assessing displacement effects on gannet in the breeding season, but that this position was amended following the MSS advice that the large size of the site meant there was a potential for displacement in the breeding season to result in mortality effects on breeding gannet. Given this, MG stated that he hadn’t expected that it would be required to consider displacement effects associated with the previous Forth and Tay sites, which are considerably smaller in size than Berwick Bank.</p> <p>TE stated that he thought that the approach was derived from the cumulative impacts of the Forth and Tay projects together.</p> <p>GHo added that there is emerging evidence from operations OWFs that displacement of gannet is quite an important issue.</p> <p>EK said that this was a lesson to be learnt – this is not a stable situation, and there is evidence from operational OWFs and this feeds into advice, so advice will change over time.</p> <p><b>Summary</b> The approach for assessing species-specific effects from previous projects was discussed but an agreement was not reached. The project position was that they were not expecting to have to undertake assessments from previous projects. However, the NS and MS position was that this would be required.</p>	
<b>8.00</b>	<p><b>Discussion of outstanding issues (Slide 13)</b></p> <p>Point 6 on slide 13 was discussed briefly: “MS advice provided (24/1/22) suggests Norfolk Vanguard WF should be included as part of the in-combination. The consent for this project is currently quashed, therefore intention is to exclude it from in-combination assessment.”</p> <p>GHo confirmed this however also highlighted that the decision to quash the consent could be appealed and reconsidered.</p> <p>Point 7 on slide 13 was discussed briefly: “Can NS clarify their advice on non-breeding season apportioning for herring gull? If the NS advice is to base this on the mean maximum foraging range plus 1SD, can advice also be provided on how the winter influx of continental breeding birds to eastern Scotland/UK should be accounted for?” This again contradicted advice which had been provided previously in recent RM mtgs.</p>	

	<p>GT confirmed that NS don't think that herring gulls disperse sufficiently far in winter so it is better to use the breeding population.</p> <p>MG asked how to take account of the winter influx of birds from other countries?</p> <p>GT said that the same proportion from Furness (2015) should be applied to the breeding population e.g. if 30% of non-breeding season birds in the BDMPS are from outside UK then that proportion should be applied to the assessment undertaken on the basis of the population occurring within the region defined by the breeding season foraging range.</p> <p><b>Summary</b> The exclusion of the Norfolk Vanguard WF from the in-combination assessment was discussed briefly. The project position is to exclude it as consent has been quashed. This was agreed although MS highlighted that this could be appealed.</p> <p>Clarification was sought re the NS advice on non-breeding season apportioning for herring gull. NS advised that the breeding population should be used, with the same proportion from Furness (2015) applied to the breeding population to take account of non-breeding season birds from non-UK colonies.</p>	
9.00	<p><b>Baseline Definition for In-combination Assessment (Slide 14)</b> Consultees were asked if there was a final position on whether consented projects should be considered part of baseline or not, for CEA.</p> <p>GHo stated that there had been further discussions between NS and MS and that the Berwick Bank project should consider all projects in their CEA as there were very few operational OWFs in Scottish waters during baseline surveys.</p>	

#### Actions

No.	Action	Owner
1	MS to circulate letter confirming that Inch Cape 2014 consent does not need to be considered	GHo
2	MSS to confirm when final report on ScotMER PVA project will be available	TE
3	NS to confirm what work on Bayesian framework has been done to date	KT
4	NS to clarify advice for kittiwake and gannet in the non-breeding season	KT/GT
5	SSE to provide further justification on the reasons not to use the 5% mortality rate	SSE
6	NS to check previous advice regarding use of maximum or mean monthly densities for CRM and confirm current advice with MS	GT/EK

#### Meeting Notes

**Subject:** Berwick Bank Wind Farm Ornithology Roadmap Meeting 6

**Location:** Teams

**Meeting Date:** 10<sup>th</sup> May 2022

**Minuted by:** Colin Barton

**Doc Ref:** LF000010&11-DEV-CON-424

**Issued on:** 18th May 2022

**Attending:**

**SSER:**

- Andrew Logie (AL) – Offshore Consents Manager for Berwick Bank Wind Farm
- Emily Nelson (EN) – Ecology Manager

**External:**

Marine Scotland (MS):

- Tom Evans (TE)
- Kerry Bell (KB)
- Ewan Edwards (EE)

NatureScot (NS):

- Karen Taylor (KT)
- Glen Tyler (GT)
- Caitlin Cunningham (CC)

RSPB:

- Catherine Kelham (CK)
- Aly McCluskie (AM)

SSER External Consultants:

- Murray Grant (MG) – RHDHV
- Kelly Macleod (KM) – HiDef Surveying
- Colin Barton (CB) – Cork Ecology
- James Orme (JO) – Juno Energy (Chair)



Item	Task Definition	Actioned Person(s)
1.00	<p><b>Project Update</b></p> <p>JO gave an update for the project. SSE have reviewed the Scoping Opinion and have been working hard to optimize the project. This has included looking at adjusting the site boundary to reduce predicted impacts. This has involved input from ornithologists, consents team, engineers and senior management and has resulted in a revised boundary, which should reduce impacts.</p> <p>JO asked for comments as to the preference for being informed of the new boundary – e.g. a short presentation or an additional road map meeting?</p> <p>TE asked if SSE were expecting feedback on the new boundary, or was it just for information? If no feedback is required, probably no need for a meeting.</p> <p>JO confirmed it was primarily for information.</p> <p>KT asked what the high-level assessment implications would be in terms of cables, capacity, project envelope description etc? This would provide an indication of any outstanding issues which might need to be considered.</p> <p>JO stated that the new boundary involved a reduction in area, with no new areas being considered. Hi-Def will be redoing the technical work, revising collision and displacement outputs. JO outlined the parallel approach for the assessment, presenting assessments based on the MS Scoping Opinion and also the Developer Approach, with justifications. It is currently expected that the application will be submitted in October 2022.</p> <p>KT confirmed that this was helpful and would pick up again if anything was unclear.</p> <p>KB asked if SSE were looking for new scoping advice?</p> <p>JO confirmed that the project would be working off existing scoping advice given new boundary will be a reduction in area.</p> <p>KB asked for further details of the parallel assessment process.</p> <p>JO outlined that there is disagreement between the developer and MS/NS regarding some parameters and methods to be used for the ornithology assessment. As a result, the submission will present two full assessments; one based on the MS Scoping Opinion and one based on the Developer Approach. This will be accompanied by SSE’s rationale on why the Developer’s Approach is the most appropriate assessment.</p> <p>KB confirmed that she understood the approach and commented that this would carry less risk of MS-LOT triggering additional information than if the developer were to not submit part or parts of the assessments detailed in the scoping opinion.</p>	
2.00	<p><b>Review of RM5 Actions</b></p> <p>AL gave a brief review of the outstanding actions from Road Map Meeting 5 – the majority of actions have already been closed out.</p> <p>Action 2 – TE confirmed that the report on the ScotMER PVA project was not yet published but would check to see if it is OK to share a copy before publication.</p>	

	<p>AL asked for an updated date of release if this wasn’t possible. TE agreed.</p> <p><b>ACTION: MS to check if possible to share a copy of the final ScotMER PVA project report pre-publication, or to confirm when final report will be published.</b></p> <p>Action 4 – NS to clarify advice re. kittiwake and gannet displacement in the non-breeding season. MG confirmed that he was clear about the advice so this action is now closed.</p> <p>Actions 5 &amp; 6 have been superseded by advice in the MS Scoping Opinion.</p>	TE
3.00	<p><b>Characterisation of Cable Corridor (Slide 3)</b></p> <p>CB summarised the key points from Slide 3:</p> <p>Issue Raised 5.10.2: ...the Scottish Ministers advise that further discussion and agreement on the characterisation of the cable corridor is required as part of the Developer’s Road Map process.</p> <p>Proposed Approach - Characterisation of the Cable Corridor will be based on 2021 desk-top report prepared by RPS.</p> <p>GT confirmed that NS are happy with the suggested approach and commented that although there wasn’t a full survey of the cable corridor, there would be sufficient evidence presented to make a sensible judgement.</p> <p>TE agreed but was unsure as to when the Outer Firth of Forth and St. Andrews Bay Complex SPA management advice would be published.</p> <p>KT stated that the SPA Conservation Objectives are available on the SiteLink website but would need to check what stage the SPA Conservation Management Advice is at. [conservation objectives link provided in the chat <a href="https://sitelink.nature.scot/site/10478#overview">https://sitelink.nature.scot/site/10478#overview</a>]</p> <p><b>ACTION: NS to check what stage publication of SPA Conservation Management Advice has reached and to send on a copy when available.</b></p> <p><b>Summary</b> Approach for Characterisation of Cable Corridor was outlined, and there was agreement with all parties on this approach.</p>	KT
4.00	<p>Guillemot 2021 Mass Stranding (Slide 4)</p> <p>CB summarised the key points from Slide 4:</p> <p>Issue Raised 5.10.3: ...The Scottish Ministers also highlight the representation from RSPB Scotland with regard to displacement and disturbance during operation of the Proposed Development and the potential risks to guillemot in light of the 2021 autumn mass mortality and advise this should be considered further as part of the Developer’s Road Map process.</p> <p>Proposed Approach - A qualitative discussion of the 2021 autumn mass mortality event will be prepared as part of the Inter-related effects chapter, including evidence published to date on the possible causes and placing this event in context of previously recorded mass mortality events.</p> <p>GT confirmed NS were happy with this approach, flagging that if a similar mortality event were to occur in future then this may mean birds are more sensitive. TE agreed with GT, and also mentioned a report from NINA about the wreck recorded in Norway as part of the same event. [TE circulated link to report subsequently - <a href="https://hdl.handle.net/11250/2995670">https://hdl.handle.net/11250/2995670</a> - Report is in Norwegian with English abstract].</p> <p>CK agreed with approach.</p>	

	<p>Summary Approach for Guillemot 2021 Mass Stranding was outlined, and there was agreement with all parties on this approach.</p>	
<p><b>5.00</b></p>	<p><b>Use of Gannet Tracking Data – Slide 5</b> KM summarised the key points from Slide 5:</p> <p>Issue Raised 5.10.5: With regards to gannet displacement and barrier effects the Scottish Ministers highlight the NatureScot December representation and the MSS December advice and advise that they must be fully considered by the Developer and suggest further discussion and agreement as part of the Developer’s Road Map process.</p> <p>Proposed Approach - Use available GPS tracking data to provide valuable contextual data to help understand the level of potential barrier and displacement effects that gannet from the Forth Islands SPA may experience, with regard to age &amp; sex of birds and taking account other Forth &amp; Tay developments.</p> <p>KM outlined that initially only received permission to use 2010-2012 data, so suggested summarising information from more recent published papers. Further datasets from 2015-2019 have very recently become available. HiDef are aiming to follow the approach of Grecian et al. 2018 [hidden Markov models] if the data allow; it requires fine-scale temporal resolution data which if not available for the complete dataset, potentially reduces the sample sizes substantially and may limit dataset to 2010 to 2015/2016.</p> <p>KT asked why there was a problem getting hold of the data?</p> <p>KM didn’t know exactly but academic data ownership is often an issue; had also emailed data owners in addition to going through seabirdtracking.org webform.</p> <p>TE agreed that data access has been a recurring issue for other projects, and stated that some recent tracking data from the Bass Rock was funded by Forth &amp; Tay developers so there may be a possibility to access this data? Also mentioned a recent FTRAG report from Leeds University summarising recent tracking data, although unsure of the data sharing agreements that were in place.</p> <p>AM suggested that Keith Hamer’s retirement may have caused the delay in response, and he will check with Jude Lane who is now at RSPB to see if there are data available. KM had already contacted both; Keith had very recently supplied data. AM also provided names of two Glasgow University seabird researchers (Jana Jeglinski and Ruedi Nager) who may also have gannet tracking data from the Bass Rock.</p> <p><b>ACTION: RSPB to check with Jude Lane to see if there are any recent gannet tracking data available.</b></p> <p><b>ACTION: Hi-Def to contact Glasgow University seabird researchers to see if they have any gannet tracking data available [KM sent email 11/05/22, cc’d Andrew Logie, SSE].</b></p> <p>KM stated that obtaining data within the next two weeks would be necessary in order to meet the project timelines.</p> <p>JO asked if there was agreement that there has to be a cut-off date for data acquisition?</p> <p>GT agreed, referring to the use of relevant recent papers in the absence of data, to provide supporting evidence.</p> <p>TE agreed, and said it would be useful to document what data had been asked for but not received.</p> <p>KB asked if TE could confirm whether the Forth &amp; Tay funded data is available?</p>	<p>AM</p> <p>KM</p>

	<p>TE thought that it should be available but was not sure of the data sharing agreement between the different developers.</p> <p>JO suggested that there should be a push over the next two weeks to see what data can be obtained and that the requested datasets that were not obtained would be recorded as part of the submission. KB agreed but noted that the FTRAG report was excluded from this as it should be available. KT noted she thought that the paper had already been shared with AL.</p> <p>This approach was agreed by all parties.</p> <p>[Following the meeting, KT recirculated the FTRAG report to AL]</p> <p><b>Summary</b> The approach was outlined and issues in obtaining recent gannet tracking data discussed. It was agreed to see what additional data can be obtained over the next two weeks, and the full set of data that has been requested will be presented as part of the reporting.</p>	
<p><b>6.00</b></p>	<p><b>Avoidance Rates – Slide 6</b> KM summarised the key points from Slide 6:</p> <p>Issue Raised 5.10.7: ...CRM: The Scottish Ministers advise using ARs following the joint SNCB guidance (2014) however recommend further discussion and agreement as part of the Developer’s Road Map process in respect of the ARs for gannet and kittiwake, the use of standard deviations and the use of appropriate Nocturnal Activity rates.</p> <p>Proposed Approach – Primary assessment will be based on CRMs using model options and ARs as recommended in SNCBs (2014). It is assumed NS advice is to present collision estimate for AR and AR <math>\pm 2*SD</math>. Nocturnal activity rates - as advised in Scoping Opinion will be used, with gannet flight activity set to gliding</p> <p>GT confirmed that the presentation of AR values should come with 2 SD around the central avoidance rate figure.</p> <p>KM asked if this meant running the model three times? GT confirmed Yes.</p> <p>MG made the point that the model could just be run once, and then the output could be adjusted, which would provide the same central and 2 SD values.</p> <p>JO asked for confirmation that this would be acceptable</p> <p>GT confirmed Yes. TE agreed and mentioned that the end result would be the same for either method.</p> <p>GT stated that NS were happy with the nocturnal activity rates and the gannet flight activity (gliding), and had no further requests in relation to this point. TE agreed.</p> <p>AM stated that the RSPB position differs for breeding season gannet - prefer the default avoidance rate of 98%. Reiterated that this was a statement rather than a point for discussion.</p> <p>TE stated that the would be no change to MSS advice in relation to this, but SSER could provide 98% for context.</p> <p>MG confirmed that the MS Scoping Opinion states that 98% AR for gannet in the breeding season should be used for context, and that he assumed this will therefore be presented.</p> <p>GT stated that there will be new SNCB advice on ARs. Currently being drafted, and that publication will not be within the October submission timeframe.</p>	

	<p><b>Summary</b> The Avoidance Rate approach was outlined, discussed and agreed between all parties.</p>	
7.00	<p><b>Apportioning methods – Slide 7</b> KM outlined the approach for Slide 7:</p> <p>Issue Raised - 5.10.9: Apportioning methods: The Scottish Ministers note however the representation from RSPB Scotland [“Very little detail on the apportioning methods has been provided and we welcome ongoing discussion on this matter”] and suggest further discussion and agreement as part of the Developer’s Road Map process.</p> <p>Follow-up Question 4 (Ornithology concerns questions sent to MS-LOT on 9th Feb, response received 2nd March). Requirement to apply two different apportioning methods to non-breeding guillemot due to differences in SNCB advice. The scoping opinion indicates that the applicant should consider the responses of NS, RSPB Scotland, Natural England and MSS, however suggests further discussion and agreement via the road map process or otherwise is recommended.</p> <p>Proposed Approach – Use of MS Apportioning Tool and NatureScot Apportioning Tool in breeding season and presenting the number of adult birds from the SPA expressed as a proportion of the total BDMPS population for the non-breeding season. For guillemot is proposed to use the NatureScot 2018 method + include the Flamborough and Filey Coast SPA.</p> <p>TE provided an update on the MS Apportioning Tool, stating that BioSS have committed to revising the tool, which should be available by the end of this week (13<sup>TH</sup> May 2022).</p> <p>TE then asked for clarification re. the use of the NS method with Flamborough and Filey Coast SPA for guillemot.</p> <p>KM confirmed that the planned approach is to use the NS method and include the Flamborough and Filey Coast SPA.</p> <p>TE queried whether this would dilute potential effects on Forth and Tay SPAs because of extending the regional population?</p> <p>GT agreed with TE but also stated that the proposed approach as outlined by KM was reasonable. GT then stated that there is a need to consider the implications further but that it looks a reasonable argument.</p> <p><b>ACTION: NS to further consider proposed approach to use NS apportioning method and include Flamborough and Filey Coast SPA within a week (17<sup>th</sup> May 2022)</b> [Advice on this action was subsequently circulated by email sent 20/5/2022.]</p> <p>KB advised that she though the original concept for these road map meetings was the relevant stakeholders would attend, including Natural England. This would have allowed them to engage further on the points they had raised in relation to both Scoping Opinions. This hasn’t happened. The MS second Scoping Opinion advised SSE to engage with Natural England on this point and indeed a number of other points, including on the HRA screening. KB asked if SSE had engaged with NE on any of these points raised in the scoping opinion.</p> <p>KT agreed and stated that NS had tried to reach out to NE.</p> <p>JO asked who should contact NE?</p> <p>KB noted that NS would try again to reach out to NE but advised that as per the Scoping Opinion SSE could engage with NE about this and the other points they had raised in the Scoping Opinion.</p>	GT

	<p>MG stated that there wasn’t much from NE on the HRA screening, with nothing very specific noted regarding LSE. Other than the matter concerning guillemot apportioning and noting the omission of some qualifying features of the Farne Islands SPA (not all of which are identified in the relevant NE documentation), their main specific comments appeared to relate to coastal processes.</p> <p>KB agreed that the NE Scoping Response was quite high level however from her recollection it included commentary that NE thought greater evidence regarding SSE’s conclusions of no LSE were advisable. KB noted that she assumed SSE might not provide this in relation to aspects they had screened out. KB noted therefore that there was possibly a risk that NE may later raise an issue with this. SSE may therefore wish to engage with NE on this point further together with the apportionment approach.</p> <p>CK flagged that The Crown Estate had recently completed and the plan-level HRA for Round 4 projects which included conclusions on Flamborough and Filey Coast SPA.</p> <p>MG highlighted that the two approaches for guillemot apportioning between NS and NE are quite different, each assuming a different biological basis. Both cannot be right. Queried whether the Regulator should make a decision here?</p> <p>KB agreed but stated that MS-LOT were not at that point yet and advised that before doing so it would be beneficial for there to be further discussion between NS and NE and SSE and NE on this point. KB noted the advice in the February Scoping Opinion and advised that in the absence of these discussions taking place she did not think appropriate to make such a decision yet.</p> <p><b>ACTION: NS to contact Natural England re further discussion on NE comments in MS Scoping Opinion, and the proposed approach for guillemot apportioning in particular.</b> [Advice on this action was subsequently circulated by email sent 20/5/2022.]</p> <p><b>ACTION: SSE to contact Natural England re further discussion on NE comments in MS Scoping Opinion, and the proposed approach for guillemot apportioning in particular.</b></p> <p>JO summarised the discussion so far, that MS &amp; NS consider the approach is likely to be sensible, with GT to double check and confirm. JO asked for a timeframe from GT re considering the proposed approach.</p> <p>GT confirmed one week to respond.</p> <p><b>Summary</b> The Apportioning Methods approach was outlined and discussed. It was agreed that NS would re-examine and confirm their position within 1 week. Additional discussion between MS/NS and NE and SSE and NE was also agreed.</p>	KT/GT  SSE
8.00	<p><b>PVA (Slide 8)</b></p> <p>Issue Raised - 5.10.10: ...With regard to Population Viability Analysis (“PVA”) the Scottish Ministers agree with the use of the NE PVA tool, however advise that further discussion and agreement on the threshold for running a PVA, should take place as part of the Developer’s Road Map process.</p> <p><b>Summary</b> It was agreed by all parties that the percentage threshold to use had already been agreed, therefore there was no further discussion required.</p>	
9.01	<p><b>Discussion of Scoping Opinion issues (Slide 9)</b> MG outlined Issue 1 “Do MS-LOT agree that it is reasonable to conclude no LSE where it can be demonstrated that the potential for effects is very small (i.e. via additional consideration on-site densities from baseline surveys)?”</p>	



	<p>GT responded that this was for the non-breeding season, looking at the proportion of the SPA population in relation to the BDMPS population. GT stated that it is quite difficult as it doesn't follow the HRA process– it is difficult to dismiss birds that may have connectivity, therefore GT wouldn't be inclined to move above 1 bird being impacted. NS are trying to move away from qualitative approach if possible. GT then asked if MG had worked through any examples?</p> <p>MG responded that some examples had been worked through to a degree – it is possible to get to a point where less than one predicted death for some instances. JO pointed out that there was a practical reality element with this. Asked MG to confirm that he wasn't proposing a clear threshold?</p> <p>MG replied that a clear threshold would need a bit of thinking, and that there would need to be caveats e.g. colony size, and that the threshold would have to come from NS and/or the regulators.</p> <p>JO asked GT if he agreed with the principle being discussed?</p> <p>GT responded that the principle is if there is a plausible pathway for impact and connectivity then we would need to conclude LSE on a population, albeit very small. The next step would be to consider any adverse effects on site integrity and assess how plausible the pathway to impact is (how big is the risk). GT suggested having further discussions on this with MG and work through an example to see if a sensible conclusion could be reached?</p> <p>KT echoed what GT said – GT has offered a possible solution, asking if a potential way forward was to work through an example? Need more time to get to grips with this.</p> <p>MG agreed.</p> <p>TE requested to be kept in the loop on this, as did AM. KB stated that someone from MS-LOT would be involved too.</p> <p><b>ACTION: SSE to set up workshop between interested parties to work through an example and reach a conclusion on this.</b></p> <p><b>Summary</b> This issue was discussed and it was agreed that SSE would organise a meeting where interested parties can work through an example of the issue and reach a sensible conclusion on the approach.</p>	SSE
9.02	<p><b>Discussion of Scoping Opinion issues (Slide 9)</b> MG outlined Issue 2 "Breeding and non-breeding gannet from the Outer Firth of Forth and St Andrew's Bay Complex SPA should be screened in for barrier to movement (Scoping Opinion)</p> <p>Only breeding gannet are a feature of this marine SPA. Is it reasonable to expect barrier effects? The marine SPA is considered to provide foraging resources and SPA is colony-side of WF. What evidence is there that birds using this marine SPA commute (to any degree) from this SPA to foraging areas beyond the WF?"</p> <p>GT responded that colony SPAs are the source SPAs for the Outer Firth of Forth and St Andrew's Bay Complex SPA, and that there is a need to consider impacts for this SPA at the colony level. However, to avoid double counting of impacts, there is no need to consider barrier effects here.</p> <p>TE agreed.</p> <p>AM said that the Conservation Objectives of the SPA should be checked with respect to maintaining the distribution of birds within the SPA and added that displacement impacts could contribute to an impact on the SPA.</p>	

	<p>MG stated that displacement had been screened in for gannet but not barrier effects (although assessed similarly, the principle of the effect is different).</p> <p><b>Summary</b> Barrier to movement impacts on non-breeding gannets from the Outer Firth of Forth and St Andrew's Bay Complex SPA was discussed and it was agreed between all parties that barrier effects in the non-breeding were not required to be assessed.</p>	
9.03	<p><b>Discussion of Scoping Opinion issues (Slide 9)</b> MG outlined Issue 3 "Water clarity / suspended sediment to be included as a pathway (Scoping Opinion) Why is this not encompassed by the effects on prey availability pathway?"</p> <p>KB stated that this advice had been presented in the previous Scoping Opinion for Berwick Bank, but SSE did not implement this in the second Scoping Report. KB noted therefore that the advice was the same on this point in both Scoping Opinions.</p> <p>TE said that this point was related to prey availability in the traditional sense, but there is a slight distinction, as changes to water clarity are likely to be short-lived, with a temporal/spatial component. If they are considered as one pathway this could lead to bigger impacts that could restrict activity at a sensitive time of year. May need to consider mitigation to avoid sediment plumes at sensitive times.</p> <p>GT did not express a preference for whether this should be considered under a separate heading or within the prey availability chapter, as long as it was sufficiently addressed, as it has some specific considerations.</p> <p>MG asked how water quality/suspended sediment could be separated from prey availability.</p> <p>JO added that it would be implicit within a prey availability assessment.</p> <p>MG agreed and added that it was logical to keep it under prey availability unless there is an effect that isn't linked to prey, e.g. abundance or ability to forage and find prey.</p> <p>JO suggested that the approach would be to include the water clarity point in the prey availability assessment, and all parties agreed to this.</p> <p><b>Summary</b> It was agreed between all parties that the water clarity pathway would be included as part of the prey availability assessment, as a subset of the prey availability assessment to ensure that it is specifically addressed.</p>	
10.00	<p><b>Discussion of Scoping Opinion issues (Slide 10)</b> MG outlined Issue 1 "Direct habitat loss to be included as pathway during decommissioning for Outer Firth of Forth and St Andrew's Bay Complex SPA What is the mechanism for habitat loss during decommissioning?"</p> <p>KB stated that this could be considered at a high level, but that it did have to be included. Decommissioning could mean full or partial removal of the OWF and there may have been creation of habitat, so there is a possible pathway.</p> <p>GT said that there wasn't much more to add on this.</p> <p>TE stated that it wasn't an issue that was really known about yet (e.g., removal of potential reef habitat causing indirect habitat loss) but another example could be kittiwakes breeding on some parts of the offshore structures. Agreed it would be high level at this point.</p>	



	<p>MG outlined the remaining discussion points:</p> <p>Migratory waterbird features of the Outer Firth of Forth and St Andrew's Bay Complex SPA will be screened in for collision and barrier to movement in RIAA.</p> <p>East Caithness Cliffs guillemot was excluded as this SPA is beyond breeding season foraging range – non-breeding season connectivity based on breeding season foraging range for guillemot but BDMPS for razorbill, therefore razorbill was included.</p> <p>Puffins from Hoy SPA were included as this SPA is on the cusp of being within breeding season foraging range</p> <p>All parties agreed to these points.</p>	
<p><b>11.00</b></p>	<p><b>In-combination totals (Slide 11 &amp; associated notes circulated 9/5/2022)</b></p> <p>MG summarised contents of Slide 11 and associated notes circulated on 9/5/2022.          “Please can MS-LOT confirm they agree with the approach as detailed in the note?”</p> <p>KT stated that that the reason NS had asked for more detail on this was to make sure they had a full understanding of the approach.</p> <p>MG outlined the approach, sources and treatment of data provided in the in-combination note and excel sheet, highlighting that this is likely to be the largest collation of in-combination effects associated with offshore wind farms in the UK so far. This was for several reasons, notably:</p> <ul style="list-style-type: none"> <li>• Change from using mean max to mean max +1SD breeding season foraging range to determine connectivity with breeding colony SPAs</li> <li>• Change from using Thaxter et al. 2015 to Woodward et al. 2019 as the standard reference for foraging ranges</li> <li>• Need to screen in virtually all SPAs with connectivity in non-breeding season only (even where potential for effects is very small)</li> <li>• Additional effects to be considered for some species – e.g., non-breeding season displacement for kittiwake and gannet.</li> </ul> <p>Eight species included for in-combination. However, 2 don't have in-combination figures (LBBG and Arctic tern) as other projects concluded no effect. A wide range of sources have been used to collate the in-combination totals, with these being as described in the supporting note that had been sent through to the attendees of the Road Map 6 meeting.</p> <p>For non-breeding season collision numbers, the East Anglia ONE North / TWO submissions have been used as the primary source of the numbers being updated where required (e.g., for the revised designs of the Forth and Tay projects as the East Anglia ONE North/TWO submissions relied upon collision numbers from the 2014 consents). Corrections to the non-breeding season collisions were applied to adjust for NS seasonal definitions, where numbers had been based on seasonal periods of Furness (2015).</p> <p>Breeding season displacement numbers had not previously been calculated for Gannet at Scottish sites, so these were collated from the baseline data (wind farm site plus 2km buffer) for the Forth and Tay projects as not previously assessed. Smaller wind farm sites were excluded from these totals (e.g., Kincardine).</p> <p>No previous collations of non-breeding season totals exist for kittiwake. Therefore, totals have been based on collation of data from the Forth and Tay sites only.</p>	

	<p>GT stated that the approach looked good and commended the work to date, but asked about why kittiwake displacement numbers for the non-breeding season were only included for Forth and Tay projects and not other east coast UK projects?</p> <p>MG responded that this would mean going through every assessment on the east coast of the UK and extracting the information, because kittiwake displacement in the non-breeding season has not previously been collated, so the focus instead was on sites that were likely to be most relevant, therefore Forth and Tay projects.</p> <p>GT understood the difficulty but highlighted that this was not consistent with the approach used for other species.</p> <p>JO asked what the requirement was for a consistent approach?</p> <p>GT stated that kittiwake should be assessed at the BDMPS scale, therefore information from UK east coast projects should be included.</p> <p>MG said that this data would not be available for older sites, where documents have been archived, or where detailed technical information was not presented. MG said this would be a harder job than you might think, but that for recent sites it would be possibly more tractable to dig this information out, but it would be a subset of sites.</p> <p>CK asked who had collated the data for other species such as gannet and razorbill originally?</p> <p>MG replied that the data would have been developed over the course of many assessments, prior to data for older sites being archived. E.g. around the time of EA3 or before.</p> <p>CK stated that the longer data are not collated, the harder it will be to do so.</p> <p>TE stated that there would be difficulties with this, but that the points made by GT were correct in terms of the assessment, so projects in the relevant region should be included, but that this would probably not be possible in some instances. These issues should be superseded when the CEF tool beds in.</p> <p>JO asked if the idea of including data from other UK east coast projects could be looked at further?</p> <p>MG stated that there will be gaps for the older projects, as it won't be possible to find the baseline data, but that for more recent sites, this information could probably be fairly readily extracted.</p> <p>JO asked how much value there would be in doing a partial job? MG replied that it was difficult to say.</p> <p>AM stated that there were two things to consider here – the earlier sites were ones where large numbers of kittiwakes were not really encountered. It was only really since Hornsea 1 and Dogger Bank where large numbers occurred, and these numbers would probably still be available. If the exercise captures the projects that have the majority of kittiwakes then it doesn't matter if it is a partial approach.</p> <p>JO suggested that there should be more efforts made to get this information, and that this would benefit future projects.</p> <p>AM stated that the PINS website would be a good place to obtain data.</p> <p>MG asked if there was agreement that partial coverage is acceptable?</p> <p>KT agreed that the approach would be partial but that it should go as far as possible.</p>	
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	<p>JO asked if there was any evidence of kittiwake displacement in the non-breeding season which supported the change of position in relation to having to assess displacement in the non-breeding season for kittiwake (which has not been required for previous Scottish (or English) projects)?</p> <p>KT stated that previous projects were not recording significant numbers of kittiwakes but Berwick Bank was.</p> <p>JO asked GT and TE why the position is changing?</p> <p>GT agreed that the position has changed, and that MSS led on this.</p> <p>TE said that advice previously for gannet and kittiwake in the non-breeding season was that these species have large foraging ranges and that effects of displacement in the non-breeding season would therefore be small, given their highly mobile behaviour. However, as the scale of development increases across the North Sea, the cumulative effects may be great, so there is a need to start assessing this issue. This wouldn't be the final position as more post-construction monitoring data is coming in.</p> <p>JO asked if there were any other discussion points?</p> <p>MG asked if there were any comments on the outlined approach for LBB Gull and Arctic Tern?</p> <p>GT stated that the suggested approach was good, adding that assuming displacement of gannets out to 2km may change in future but for the current project was acceptable and is all that is possible given the data available from existing projects.</p> <p><b>Summary</b> The approach for in-combination totals was discussed between all parties. It was agreed that further efforts would be made to include kittiwake numbers from other UK east coast projects, in addition to the Forth and Tay projects.</p>	
12.00	<p><b>AOB</b> JO thanked everyone for their input and asked if there were any other points?</p> <p>KT provided an update on the Conservation Management advice for the Outer Firth of Forth and St Andrew's Bay Complex SPA that these were now with MS to issue. Will be circulated once they are available.</p> <p>JO confirmed that the Berwick Bank assessment is planning to use the simplified SeabORD model to provide context and that SSE would be in touch re. the MS SeabORD email sent on 9/5/2022.</p>	KT

8	SSE to set up workshop between interested parties to work through an example and reach a conclusion on this	SSE
9	MG to update in-combination totals for kittiwake non-breeding season displacement using available data from other UK east coast sites.	MG

### Actions

No.	Action	Owner
1	MS to check if it's possible to share a copy of the final ScotMER PVA project report pre-publication, or to confirm when final report will be published.	TE
2	NS to check what stage publication of SPA Conservation Management Advice has reached and to send on a copy when available.	KT
3	RSPB to check with Jude Lane to see if there is any recent gannet tracking data available	AM
4	Hi-Def to contact Glasgow University seabird researchers to see if they have any gannet tracking data available	KM
5	NS to further consider proposed approach to use NS apportioning method and include Flamborough and Filey SPA	GT
6	NS to contact Natural England re further discussion on NE comments in MS Scoping Opinion, and the proposed approach for guillemot apportioning in particular.	KT/GT
7	SSE to contact Natural England re further discussion on NE comments in MS Scoping Opinion, and the proposed approach for guillemot apportioning in particular.	SSE

