

# INTRODUCTION AND CONSULTATION

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## 1. Introduction

1. The application for the optimised Seagreen Project was submitted to Marine Scotland in September 2018 and included an Environmental Impact Assessment Report (EIAR) in three volumes: Volume 1 -Technical Chapters; Volume 2 – Figures, and Volume 3 - Appendices.
2. The optimised Seagreen Project comprises of two separate offshore wind farms (OWF);
  - Seagreen Alpha OWF (hereafter Project Alpha) comprising up to 70 turbines; and
  - Seagreen Bravo OWF (hereafter Project Bravo) comprising up to 70 turbines.
3. The OWF projects may be built out independently or in combination, comprising up to 120 turbines in total. Therefore the impact assessment must consider and assess the projects both in isolation and combined (i.e. considering these three scenarios). The Offshore Transmission Asset remains as separately licensed in 2014 and therefore was not re-assessed.
4. The Seagreen Project location in relation to the other offshore wind farms in the Firths of Forth and Tay, Inch Cape and Neart na Gaoithe is shown in Figure 1.

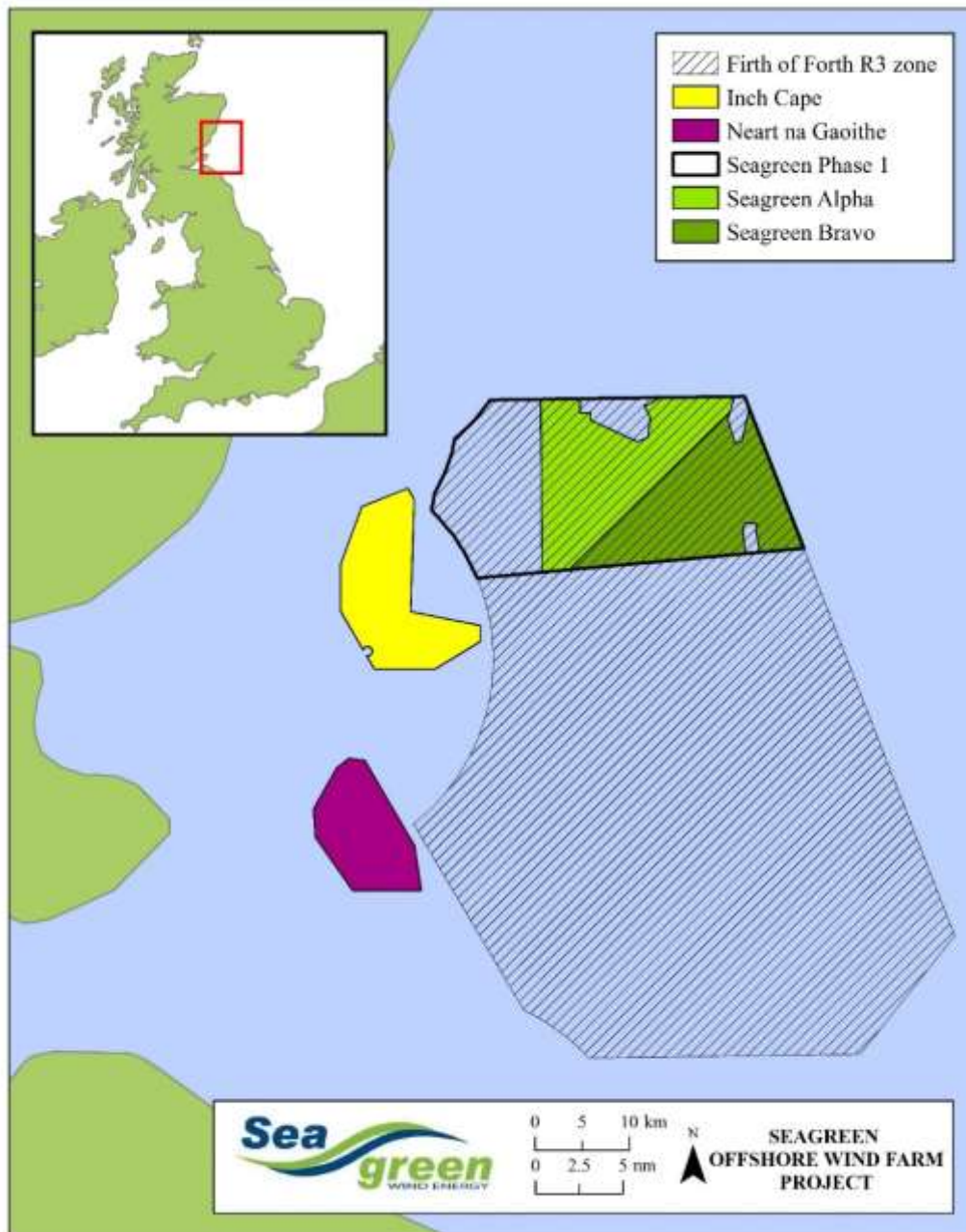


Figure 1 The Seagreen Firth of Forth Zone, Phase 1 project area containing the Seagreen Alpha and Seagreen Bravo sites relative to the Scottish Territorial Waters sites of Inch Cape and Neart na Gaoithe

5. The Seagreen 2018 EIAR assessed the ornithology aspects of each of the above projects in Volume 2 - Chapter 8: Ornithology and Chapter 16: Habitats Regulations Appraisal (HRA).
6. Seagreen received consultation responses on the ornithology aspects of the 2018 application via the Marine Scotland Licensing and Operations Team (MSLOT) from Marine Scotland Science (MSS), Scottish Natural Heritage (SNH) and the Royal Society for the Protection of Birds (RSPB) in November 2018. These concurred in advising that further information was required, specifically to meet the requirements of the Scoping Opinion (MS 2017) (hereafter the 2017 Scoping Opinion).
7. This Addendum therefore supplements the 2018 Seagreen EIAR by providing further information and addressing the issues raised in the correspondence. Section 2 provides the updated ornithology EIA and Section 3, the updated ornithology HRA.
8. Where information remains unchanged from the 2018 EIAR it is not replicated but cross-referenced to this document.
9. Four appendices were attached with the 2018 EIAR Chapter 8: Ornithology and one with Chapter 16: Habitats Regulations Appraisal. In some cases these have been superseded owing to updated calculations and modelling. In this case a revised version is attached as an Annex to this Addendum. The status of each original appendix is given in Table 1.1, together with information on the additional Annexes.

**Table 1-1 List of 2018 EIAR appendices and their current status**

Appendix (2018 EIAR)	Status	Annex (this Addendum)
Appendix 8A: Ornithology Technical Report	Updated version attached as Annex 1 of this Addendum. Revisions only affect Appendix 2 tables based on changes to the site + 2km buffer populations.	Annex 1
Appendix 8B: Collision Risk Modelling	Original version remains unchanged and is re-issued as Annex 2. However, for Neart na Gaoithe only, further modelling has been carried out and the values cited in this Addendum, supersede those in the Annex 2.	Annex 2
Appendix 8C: Displacement of Seabirds	Superseded by information included in Part 2 of this Addendum	N/A
Appendix 8D: Population Viability Analysis	Superseded by updated report attached as Annex 3 of this Addendum	Annex 3
Appendix 16B: Apportioning	Superseded by Annex 4 of this Addendum	Annex 4
N/A	Correspondence with MS / SNH supplementing the discussions described in Tables 2.1-2.3.	Annex 5
N/A	Cross-reference to the location of the assessment of construction and decommissioning effects in the 2018 EIAR (as requested by MS) is provided in Annex 6 as the assessment is not repeated in this Addendum. Information on the Offshore Transmission Asset was originally provided in the 2012 ES and not repeated in the 2018 EIAR. Cross reference to information requested in the 2017 Scoping Opinion is provided here.	Annex 6

10. The Addendum has been prepared by Sue King Consulting Ltd, based on additional data analysis provided by ECON Ltd and DMP Statistical Solutions UK Ltd and the original assessment provided by Niras.
11. Information on legislation, policy and guidance relating to EIA and HRA can be found in the 2018 EIAR Chapter 8: Ornithology at paragraphs 8.13 to 8.28 and Chapter 16: Habitats Regulations Appraisal paragraphs 16.92 to 16.25. It is not repeated here.

## 2. Consultation

12. A scoping report for the optimised Seagreen Project was submitted in May 2017 (Seagreen 2017). In response to this the Marine Scotland Licensing and Operations Team (MSLOT) issued a Scoping Opinion on behalf of Scottish Ministers in September 2017. This was followed by a number of consultation meetings held during the compilation of the 2018 EIAR. The ornithology aspects of both the 2017 Scoping Opinion and subsequent meetings are detailed in the 2018 EIAR, Chapter 8, Table 8.4, pages 8-9.
13. Following submission of the applications for the optimised Seagreen Project and as noted in the introduction, Seagreen received further written consultation responses on ornithology via MSLOT from:
  - MSS dated 28 November 2018;
  - SNH dated 2 November 2018; and
  - RSPB dated 8 November 2018.
14. The issues raised are laid out in Table 2.1 together with the Seagreen response. This states either where the information can be found in the 2018 EIAR or how the further information is provided in this Addendum. The proposed format of the Addendum was further discussed during teleconferences with:
  - SNH on 28th November 2018; and
  - MSS and MSLOT on 6th December 2018.
15. Following these discussions, a scope for the Addendum was submitted to MSLOT on 18th December 2018 outlining its proposed content. A written response to the scope was received from MSLOT on 23rd January 2019 incorporating comments from SNH (letter of 11th January 2019). The consultation is summarised in Table 2.2 with the Seagreen response given alongside.
16. Regular teleconferences were also held approximately every two weeks during the initial preparation of the Addendum to discuss matters arising and to appraise MS and SNH of progress. The dates of these calls, an outline of their content and any additional correspondence are included in Table 2.3. Letters formally responding to queries are included in Annex 5.
17. Note that where MS is referred to in this Addendum it includes both MSLOT and MSS. Where meetings or correspondence include just one of these parties they are named separately.

**Table 2-1 Summary of post-submission issues raised by consultees relating to ornithology**

Consultee	Summary of response	Seagreen response
Scottish Natural Heritage (SNH) 02/11/2018	The impact assessment methods, in particular, incorporation of additional survey data... do not follow the advice in the 2017 Scoping Opinion.	Addressed in the Addendum with specific discussion of July 2017 data in Section 2.2.6.
SNH	The use of Option 1 to assess collision risk does not follow the advice in the 2017 Scoping Opinion i.e. to use Option 2. Site specific flight heights (Option 1) may reflect flight behaviour in the development area better than generic flight heights (Option 2). We would welcome further discussion on the use of site specific data and option 1 and how it may be presented alongside option 2 to enable a common comparison across all the Forth and Tay developments.	Addendum presents option 1 and 2 with option 2 taken forward for PVA and cumulative impact assessment as required by the 2017 Scoping Opinion.
SNH	The impact assessment methods, in particular,...choice of Collision Risk Modelling options and outputs taken forward into the PVA modelling....do not follow the advice in the 2017 Scoping Opinion.	See above.
SNH	The impact assessment methods, in particular ....presentation of PVA metrics do not follow the advice in the 2017 Scoping Opinion. The metrics are counterfactual of population size (CPS), counterfactual of population growth rate (CPG) and centile match of end point of the un-impacted population (Centile). Whilst the CPS measures lie in the range that we would expect, the CPG and Centile measures are either neutral or positive. This is counter-intuitive and raises some doubts over their reliability and leads us to have reduced confidence in the metric results.	PVA models rerun and metrics re-presented. See Annex 3 and HRA chapter.
SNH	The in combination assessment includes all North Sea wind projects and does not identify the combined impacts of the Forth and Tay proposals as requested.	Combined impacts of the Forth and Tay projects presented separately to those incorporating all North Sea wind projects.

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Consultee	Summary of response	Seagreen response
SNH	<p>PVA models run at increments of 50 bird mortalities presents two complications:</p> <p>There is a lack of detail on which increments have been used to derive the PVA metrics. This reduces our ability to interpret the impacts.</p> <p>This scale of increments is not suitable for all species i.e. an incremental scale more relevant to the scale of the predicted impact would aid interpretation of the population level effects.</p>	<p>PVA models rerun using increments of mortality appropriate to each site and species. See Annex 3.</p>
<p>Marine Scotland Science (MSS) comments to MS Licensing and Operations Team (MSLOT). 28/11/2018</p>	<p>There are discrepancies between the collision mortality estimates presented in the CRM appendix (Appendix 8a of EIA report volume 3) and those summarised in the EIA Ornithology Chapter (Chapter 8 of EIA). The developer should explain why these numbers differ.</p>	<p>Derivation of collision mortality now explained in this Addendum with examples. See Section 2.2.7.</p>
MSS/MSLOT	<p>The CRM options taken forward to the PVA and presented in the HRA are using option 1 for gannet and kittiwake (e.g. table 16.40 of chapter 16 of EIA) which goes against the 2017 Scoping Opinion (advised option 2, see CRM section above). This along with the apparent misinterpretation of the PVA modelling results (above), and of not following the 2017 Scoping Opinion on advised developments to be used for in combination assessment mean that it is not possible to confidently assess impacts on the SPA populations according to the requirements of the 2017 Scoping Opinion.</p>	<p>CRM option 2 taken forward in PVA and PVAs re-run as described above.</p>
<p>Royal Society for the Protection of Birds (RSPB) 08/11/2018</p>	<p>There is a lack of empirical data to inform the displacement assessment and the estimated effects should be treated with caution. All the auk populations at these SPAs are experiencing relatively stable or increasing trends, however the scale of impact in addition to the high degree of uncertainty in the assessment is concerning.</p>	<p>Noted. Displacement assessment has followed the advice provided in the 2017 Scoping Opinion. Discussion of any available evidence on displacement is included in the species accounts.</p>



Consultee	Summary of response	Seagreen response
RSPB	<p>This 'test' (comparison to SPA population size at citation) contradicts the previous statements by dismissing the importance of considering the counterfactual metrics when interpreting impacts, whilst also suggesting additional adverse pressures arising from a new project are acceptable despite an internationally protected site being in unfavourable condition and failing its conservation objectives. The test is based on whether the projected change will result in the future impacted population being lower than the cited population and requires a prediction of absolute population size.</p>	<p>Noted. The test is whether or not there are likely significant effects on the receptors. The end population size of the impacted and un-impacted populations after 25 years, together with the counterfactual are presented with further discussion in the context of each species at each SPA, noting that a reduction in end population size does not necessarily lead to a significant effect.</p>
RSPB	<p>Additional survey data was gathered during 2017, which we welcome, and high densities of birds were observed during the July 2017 count. The assessment suggests these observed numbers are 'atypical' and for these reasons the July 2017 records are not included in the in-combination assessment for collision risk. Similarly, for the assessment of displacement two outputs are presented, one with and one without inclusion of this data set.</p> <p>There's no justification for concluding these high densities are an anomaly and the full data- set should be included in the environmental assessment, including the in-combination assessment</p> <p>Seabird at sea distributions are highly variable and collectively there is insufficient data to determine whether observed at sea distributions of seabirds is normal or abnormal. Site surveys are undertaken once a month over a two-day period each time, which represents approximately 7% of available survey days per year. To dismiss counts for not being representative against such a small data-set is unfounded and not suitably precautionary.</p>	<p>Seagreen surveys followed standard European Seabird at Sea (ESAS) protocols and were conducted on a monthly basis as recommended.</p> <p>All 2017 data were used to scale up densities in the site + 2 km buffer for purposes of displacement assessment.</p> <p>Evidence on comparative seabird densities in the region is provided (Table 4.7) and the July 2017 data are discussed in detail (see Table 2.2 below and Section 2.2.6) as described to RSPB at a meeting on 5 March 2019.</p> <p>Figure 2 shows that highest densities were observed outside the site boundary but affecting the buffer area. However, based on advice from MS and SNH the assessment is provided with all data and also for 'July adjusted' data.</p>
<p>MSLOT letter of 23/01/2019</p> <p>Incorporating SNH email to MSS of 11/01/2019</p>	<p>Species for further assessment are: gannet, kittiwake and razorbill.</p>	<p>The Addendum provides revised assessment for each of these three species as described in Section 2: EIA and Section 3: HRA. Guillemot and puffin were also included following discussions with MS/SNH on 14/02/2019.</p>

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Consultee	Summary of response	Seagreen response
MSLOT	Assessment of razorbill displacement should be done with and without the July 2017 data but PVA for HRA should exclude July 2017 data.	Razorbill displacement has been reassessed for EIA and HRA following this advice. Guillemot was re-assessed in a similar way following discussions with MS/SNH on 14/02/2019.
MSLOT	Assessment of kittiwake displacement should be based on the July median density rather than the mean density, noting that the very high densities recorded during this month represent what appears to be a unique situation.	Kittiwake displacement has been reassessed following this advice. This was clarified in a letter from MSLOT of 12/02/2019.

**Table 2-2 Consultation responses on the scope of the Ornithology Addendum**

Consultee	Summary of response	Seagreen response
MSLOT letter of 23/01/2019  Incorporating SNH email to MSS of 11/01/2019	Species for further assessment are: gannet, kittiwake and razorbill.	The Addendum provides revised assessment for each of these three species as described in Section 2: EIA and Section 3: HRA. Guillemot and puffin were also included following discussions with MS/SNH on 14/02/2019.
MSLOT	Assessment of razorbill displacement should be done with and without the July 2017 data but PVA for HRA should exclude July 2017 data.	Razorbill displacement has been reassessed for EIA and HRA following this advice. Guillemot was re-assessed in a similar way following discussions with MS/SNH on 14/02/2019.
MSLOT	Assessment of kittiwake displacement should be based on the July median density rather than the mean density, noting that the very high densities recorded during this month represent what appears to be a unique situation.	Kittiwake displacement has been reassessed following this advice. This was clarified in a letter from MSLOT of 12/02/2019.

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**Table 2-3 Dates and a summary of further telephone conferences and correspondence between MS, SNH, RSPB and Seagreen**

Date and organisation	Summary of issues	Points agreed
13/12/2018 SNH	Seagreen request assessment for operational period only as per its 2018 HRA. Queries discussed regarding modelling incremental mortality based on stable age class structure given sub-adult gannet and kittiwake not present in Forth & Tay in those proportions	Operational period to be assessed. PVAs using increments based on stable age class will be conservative. Modelling of specific mortality will be based on age classes observed at sea for gannet and kittiwake.
10/01/2019 SNH, MSS, MSLOT	Discussion of scope; request to order assessment by species; report on PVAs modelled by increments; discussion of foraging range for kittiwake at St Abb's Head to Fast Castle SPA.	Assessment to be ordered by species; PVAs will include incremental and specific mortality. Kittiwake at St Abb's to be included in HRA though beyond mean maximum foraging range.
24/01/2019 SNH/MS	Discussion of MS/SNH comments on Addendum scope. Discussion of method for calculating median densities.	Addendum to be progressed based on MS/SNH comments. Seagreen to provide spreadsheet on median calculations.
14/02/2019 SNH/MS	Data discrepancies discussed requiring the inclusion of additional species. MS/SNH agree method of using median July data. Incorporation of sabbaticals discussed following email query from Seagreen.	Revised assessments for guillemot and puffin now to be included in Addendum. It was assumed that advice on the assessment of razorbill should be extended to guillemot. Median to replace max July 2017 data for kittiwake, guillemot and razorbill. Sabbaticals to be subtracted from adult mortality rather than incorporated into PVA.
28/03/2018 SNH/MS	Letter and call from SNH confirming that HRA consideration of razorbill at St Abb's Head to Fast Castle SPA was not required and that mean-maximum foraging range should be used to scope in all other species for HRA.	Advice applied in the HRA assessment.
07/03/2019 SNH/MS	Discussion of project progress	Seagreen to notify MS/SNH once the Addendum is complete and a submission date known.
05/03/2019 RSPB	Meeting to inform RSPB about the format of the Addendum and discuss issues raised in RSPB's post-submission response.	Seagreen to notify RSPB once the Addendum is complete and a submission date known.