

1. Location in the original Seagreen 2018 Environmental Impact Assessment Report (EIAR) of information not included in this Addendum

1.1 Introduction

1. This Addendum considers effects on five species, namely: gannet, kittiwake, guillemot, razorbill and puffin for the operational period only at three Special Protection Areas (SPAs): Forth Islands SPA, Fowlsheugh SPA and St Abb’s Head to Fast Castle SPA and one proposed SPA (pSPA) – the Outer Firth of Forth and St Andrew’s Bay Complex pSPA.
2. Following agreement with MS and SNH, the species omitted from this Addendum is herring gull. This is because it was fully considered in the 2018 EIAR and no likely significant effects or adverse effects on site integrity were identified. For the same reason, no further assessment of Buchan Ness to Collieston Coast SPA was required. Finally, as only the operational period is considered in this Addendum, in line with the Habitats Regulations Appraisal (HRA) included in the Seagreen (2018) EIAR, there is no further discussion of construction and decommissioning impacts/effects.
3. At the request of Marine Scotland, this annex to the Addendum provides cross-references to the sections of the 2018 EIAR where the above assessments can be found.

1.2 Species: herring gull *Larus argentatus*

4. Herring gull is predicted to be at risk of collision rather than disturbance or displacement. It is assessed in this context in the following sections of the 2018 EIAR, Chapter 8: Ornithology and Chapter 16: Habitats Regulations Appraisal.

Table 1-1 Cross-references to herring gull (HG) assessment in the 2018 EIAR

Paragraph reference	Description
Chapter 8: paras 8.124-144	General description of Collision Risk Modelling (CRM) parameters including HG
Chapter 8: Table 8.10	Sensitivity of HG
Chapter 8: Tables 8.14 – 8.16	Reference population sizes and peak populations of HG within the Seagreen sites
Chapter 8: paras 8.183 - 189	Species description
Chapter 8: para 8.226 and Table 8.17	Predicted future baseline
Chapter 8: paras 8.388 -395 & Table 8.23	HG CRM and impact assessment: Alpha
Chapter 8: paras 8.468 -474 & Table 8.27	HG CRM and impact assessment: Bravo
Chapter 8: paras 8.544 -550 & Table 8.31	HG CRM and impact assessment: Alpha + Bravo combined
Chapter 8: paras 8.695 - 706 & Tables 8.41 &8.44	Cumulative North Sea effects on HG

Paragraph reference	Description
Chapter 8: Tables 8.45	Summary of impacts on HG
Chapter 16: para 16.32 & Table 16.2	HG scoped in to the HRA assessment at 4 SPAs and 1 pSPA
Chapter 16: para 16.34 & Table 16.4	No PVA done for HG and assessed for collision only
Chapter 16: para 16.88 & 90	Approach to non-breeding season HG assessment. Adults only considered in all seasons
Chapter 16: Table 16.7	Differences between the 2014 and 2018 HRA approach
Chapter 16: para 16.131 - 162	CRM description including HG
Chapter 16: para 16.211-240	HG population sizes included in SPA accounts
Chapter 16: Table 16.21	Approach to apportioning impacts on HG
Chapter 16: Table 16.22	HG baseline mortality
Chapter 16: Table 16.25	HG collision mortality- Alpha
Chapter 16: para 16.382; 398-399, 415-416 and 426-427	Effects from Alpha on HG at Buchan Ness to Collieston Coast, Forth Islands, Fowlsheugh and St Abb's Head to Fast Castle SPAs respectively
Chapter 16: Table 16.30	Summary of SPA effects, including HG, from Alpha
Chapter 16: Table 16.31	Summary of pSPA effects, including HG, from Alpha
Chapter 16: Table 16.34	HG collision mortality- Bravo
Chapter 16: para 16.447-448; 464-465, 481-482, 492-493	Effects from Bravo on HG at Buchan Ness to Collieston Coast, Forth Islands, Fowlsheugh and St Abb's Head to Fast Castle SPAs respectively
Chapter 16: Table 16.36	Summary of SPA effects, including HG, from Bravo
Chapter 16: Table 16.37	Summary of pSPA effects including HG, from Bravo
Chapter 16: Table 16.40	HG collision mortality- Alpha + Bravo combined
Chapter 16: para 16.512-513; 529-530; 546-547; 557-558	Effects from Alpha on HG at Buchan Ness to Collieston Coast, Forth Islands, Fowlsheugh and St Abb's Head to Fast Castle SPAs respectively
Chapter 16: Table 16.42	Summary of SPA effects from Alpha + Bravo combined
Chapter 16: Table 16.43	Summary of pSPA effects from Alpha + Bravo combined
Chapter 16: Tables 16.44, 16.46, 16.50 & 16.54	Cumulative collision effects on HG at Buchan Ness to Collieston Coast, Forth Islands, Fowlsheugh and St Abb's Head to Fast Castle SPAs respectively
Chapter 16: para 16.584-586, 603-605, 622-624 & 634-635	Cumulative effects on HG at Buchan Ness to Collieston Coast, Forth Islands, Fowlsheugh and St Abb's Head to Fast Castle SPAs respectively

Paragraph reference	Description
Chapter 16: Table 16.56	Summary of cumulative effects on each SPA
Chapter 16: Table 16.57	Summary of cumulative effects on the pSPA

1.3 Impacts/effects during construction and decommissioning

- The 2018 EIAR discusses the impacts on birds from disturbance and displacement during construction and decommissioning for all species. However, based on this it concludes that, for all except auk species (guillemot razorbill and puffin), which may be vulnerable to underwater noise, specific assessment of effects during construction and decommissioning is not required. For auks, effects are assessed in the following sections of the 2018 EIAR, Chapter 8: Ornithology and Chapter 16: Habitats Regulations Appraisal.

Table 1-2 Location of information on construction and decommissioning impacts /effects

Paragraph reference	Description of contents
Chapter 8: paras 8.42 - 8.44	Disturbance effects during construction
Chapter 8: para 8.52	Scoped out impacts during construction and operation are pollution and indirect effects on prey
Chapter 8: para 8.93 & 103	Attraction of gulls, kittiwakes and terns during construction
Chapter 8: paras 8.94 - 99	Displacement of auks during construction
Chapter 8: Table 8.18	Worst case scenario for disturbance during construction and decommissioning
Chapter 8: Table 8.19	Environmental management plans during construction and decommissioning
Chapter 8: paras 8.233 - 267	Impact assessment during construction-displacement-Alpha
Chapter 8: paras 8. 268 - 288	Impact assessment during construction-displacement -Bravo
Chapter 8: paras 8. 289 -309	Impact assessment during construction-displacement-Alpha + Bravo combined
Chapter 8: Table 8.32 - 34	Summary of decommissioning disturbance impacts on auks – Alpha, Bravo and Alpha + Bravo combined
Chapter 8: paras 8.574 - 581	Cumulative construction impacts - displacement on auks
Chapter 8: Table 8.45	Summary of predicted impacts from construction and decommissioning
Chapter 16: para 16.37	Construction and decommissioning scoped out of HRA due to no significant effects identified under EIA

1.4 SPAs: Buchan Ness to Collieston Coast SPA

6. The tables below summarises the location of information on the Buchan Ness to Collieston Coast SPA in the original 2018 EIAR.

Table 1-3 Location of information on impacts /effects at Buchan Ness to Collieston Coast SPA

Paragraph reference	Description of contents
Chapter 8: Table 8.4	Inclusion in Scoping Opinion
Chapter 8: para 8.54	Defined as part of the Seagreen zone of influence
Chapter 8: para 8.161	SPA species to be included in the assessment
Chapter 8: para 8.183	Regional population of HG including Buchan Ness to Collieston Coast SPA
Chapter 8: para 8.190	Regional population of guillemot including Buchan Ness to Collieston Coast SPA
Chapter 8: para 8.349 & 428	Only low levels of impact are predicted on kittiwake at this SPA by Searle et al. (2014)
Chapter 16: Table 16.2	Inclusion of the SPA in the 2017 Scoping Opinion
Chapter 16: para 16.32	Qualifying species of the SPA
Chapter 16: para 16.34	PVA is not conducted for this SPA
Chapter 16: para 16.36	CRM for herring gull only at this SPA
Chapter 16: para 16.41	Effect on fulmar scoped out at this SPA
Chapter 16: Table 16.4	Screening of effects
Chapter 16: para 16.92	Species assessed for displacement are kittiwake (although no effects predicted on this species) and guillemot
Chapter 16: para 16.211 - 215	Description of SPA
Chapter 16: Table 16.21	Apportioning impacts to the SPA
Chapter 16: Table 16.22	Baseline mortality at the SPA
Chapter 16: Table 16.23	Displacement mortality at the SPA from Alpha
Chapter 16: Table 16.25	Collision mortality at the SPA from Alpha
Chapter 16: para 16. 378 - 395	SPA site assessment - Alpha
Chapter 16: Table 30	Summary of SPA assessment - Alpha
Chapter 16: para 16.437 & 441	Bravo -species assessed for displacement - guillemot only; collision – herring gull only
Chapter 16: Table 16.32	Displacement mortality at the SPA from Bravo
Chapter 16: Table 16.34	Collision mortality at the SPA from Bravo
Chapter 16: para 16.444-451	SPA site assessment- Bravo
Chapter 16: Table 36	Summary of SPA assessment - Bravo

Paragraph reference	Description of contents
Chapter 16: para 16.504 & 507	Alpha + Bravo combined -species assessed for displacement-guillemot only; collision – herring gull only
Chapter 16: Table 16.38	Displacement mortality at the SPA from Alpha + Bravo combined
Chapter 16: Table 16.40	Collision mortality at the SPA from Alpha + Bravo combined
Chapter 16: para 16.509-516	SPA site assessment- Alpha + Bravo combined
Chapter 16: Table 42	Summary of SPA assessment - Alpha + Bravo combined
Chapter 16: para 16.568	Inclusion in cumulative (in-combination) assessment
Chapter 16: para 16.581-589	SPA site assessment- Cumulative assessment
Chapter 16: Table 44 & 45	Cumulative collision and displacement
Chapter 16: Table 56	Summary of cumulative assessment

1.5 References

Searle, K.R., Mobbs, D., Butler, A., Bogdanova, M., Freeman, S., Wanless, S. & Daunt, F. (2014). *Population Consequences of Displacement from Proposed Offshore Wind Energy Developments for Seabirds Breeding at Scottish SPAs (CR/2012/03)*. Report to Marine Science Scotland. [online] Available at: <http://www.gov.scot/Resource/0040/00404982.pdf>

2. Cross references to the Offshore Transmission Asset - Export Cable Route in relation to the Outer Firth of Forth and St Andrew's Bay pSPA in the Seagreen 2012 Environmental Statement

2.1 Introduction

7. The Seagreen Offshore Transmission Asset (OfTA) is the subject of a consent granted in 2014. It was based on detailed information provided in the Seagreen 2012 Environmental Statement (ES). At the time, documentation for the Outer Firth of Forth and St Andrew's Bay proposed Special Protection Area (the pSPA) had not reached draft status and it was therefore not considered in the Habitats Regulations Appraisal (HRA). Since that time it has become a pSPA and therefore has policy protection.
8. The 2017 Scoping Opinion noted that, initially, SNH was of the opinion that existing assessments '*adequately addressed cable impacts for each of the Forth and Tay wind farms*' noting that a cable installation plan or cable lay strategy would be required which would '*set out good practice working measures and any required mitigation to minimise habitat/prey disturbance and to avoid any significant disturbance of seabirds and waterfowl including pSPA features of interest*' (letter from SNH to the RSPB and MSLOT of 9 August 2017). On this basis no further information was required.
9. RSPB responded to this letter stating that the scale of infrastructure deployment within the pSPA was not insignificant and noted that Seagreen (and Inch Cape) had not quantified the scale of the affected area.
10. Following receipt of RSPB's communication, SNH responded to MSLOT (7th September 2017) recommending that developers provide the following information within the HRA. This was confirmed by MS in the 2017 Scoping Opinion. The information required was:
 - extent and route of export cable corridor and number of cables
 - duration and method of cable deployment including start and finish dates
 - type and number of vessels involved in cable laying operations
 - habitat mapping within the cable corridor and the likely prey species of pSPA interest where the cable route crosses the pSPA
 - use of any cable protection materials-type, location and method of deployment
 - schedule of operational maintenance checks, types of vessels, duration and timing
 - any proposed mitigation and inclusion of draft cabling plans and cable management plan.

11. The scope of this Addendum HRA is in respect of the operational effects of the optimised generation asset (the optimised Seagreen Project). The OfTA is considered as a separate project and it was previously agreed with MS (meetings of 22 November 2017 and 17 April 2018) that it should be taken into account in the assessment of cumulative effects for EIA and HRA, including the pSPA. However, the OfTA was subsequently screened out of further assessment in the 2018 HRA as this related only to the operational period as agreed with MS and the OfTA gives rise to potential construction and decommissioning effects only. References can be found in the 2018 EIAR HRA Table 16.2 and 16.5 and paragraphs 8.564, 16.575 to 16.580. Cross reference was also provided to the assessment made in the 2012 ES which formed the basis of the OfTA consent. Notwithstanding that, consistent with the approach on herring gull etc of referring to where construction and decommissioning is dealt with, Seagreen offers the following information for completeness.

2.2 Additional information and cross references to the 2012 ES

12. The area of the pSPA is 2720.68 km² (SNH 2019). The red line boundary of the OfTA cable corridor within the pSPA is 9.42 km² i.e. the cable corridor occupies approximately 0.3% of the pSPA area as a worst case scenario assuming that the whole area within the red line boundary is affected by works. A map showing the route of the export cable corridor is provided at a number of places in the 2012 ES, the 2018 EIAR and in this Addendum. Cross references are provided in Table 2.1 below. Note that these maps do not currently show the pSPA boundary.
13. The infrastructure of the export cable corridor was described in detail in the 2012 ES and cross references to the information as it relates to the 2017 Scoping Opinion request are given in Table 2.1.
14. The impact/effects of the works to install the export cables would be during construction and decommissioning only with no relevant effects during operation. The location of the assessment in the 2012 ES of impacts during construction (and decommissioning) on the sediments, water quality and benthic ecology, which may be relevant to the bird features of the pSPA, is also given in Table 2.1.

2.3 The Offshore Transmission Asset Marine Licence and the Cable Plan

15. Some elements of the 2017 Scoping Opinion information request outlined at paragraph 11 above are not specified in the 2012 Environmental Statement as they are generally determined post-consent at the detailed design stage and are normally provided as part of the conditions of the Marine Licence.
16. Seagreen's 2012 Offshore Transmission Asset Marine Licence (Licence No. 04678/14/0 as varied on 09/03/2019) specifies Cable Plan (CaP) and Operation and Maintenance Programme (OMP) conditions as follows:

3.2.2.10 The Licensee must, no later than 6 months prior to the Commencement of the Works, submit a CaP, in writing, to the Licensing Authority for their written approval. Such approval may only be granted following consultation by the Licensing Authority with the MOD, the JNCC, SNH, MCA, and the SFF and any such other advisors or organisations as may be required at the discretion of the Licensing Authority. The CaP must be in accordance with the Application.

The CaP must include the following:

- a) Details of the location and cable laying techniques for the cables;*
- b) The results of survey work (including geophysical, geotechnical and benthic surveys) which will help inform cable routing;*
- c) A pre-construction survey for Annex 1 habitat and priority marine features to inform cable micro-siting and installation methods in consultation with the Licensing Authority and their advisors;*
- d) Technical specification of all cables, including a desk based assessment of attenuation of electromagnetic field strengths and shielding;*
- e) A burial risk assessment to ascertain if burial depths can be achieved. In locations where this is not possible then suitable protection measures must be provided, including structural grade 40 concrete 200 mm thick at Danger Area D604;*
- f) Methodologies for over trawl surveys of the cables through the operational life of the Works where mechanical protection of cables laid on the sea bed is deployed; and*
- g) Measures to address exposure of any cables.*

3.2.3.2 Operation and Maintenance Programme (“OMP”)

The Licensee must, no later than 3 months prior to the commissioning of the first OSP, submit an OMP, in writing, to the Licensing Authority for their written approval. Such approval may only be granted following consultation by the Licensing Authority with the MOD, the JNCC, SNH, SEPA, MCA, NLB, Angus Council and any such other advisors or organisations as may be required at the discretion of the Licensing Authority. The OMP must set out the procedures and good working practices for the operations and maintenance of the OSPs, substructures, and cable network of the Works. Environmental sensitivities which may affect the timing of the operation and maintenance activities must be considered in the OMP.

The OMP must, so far as is reasonably practicable, be consistent with the EMP, the PEMP, the VMP, the NSP, the CaP and the LMP.

17. The above CaP and OMP information has been matched to the information required by the 2017 Scoping Opinion in Table 2.1, where not available from the information given in the Seagreen 2012 ES.

Table 2-1 Cross-references to the cable corridor in the Seagreen 2012 Environmental Statement and to the information required by the Cable Plan condition as part of the Transmission Asset Marine Licence Licence No. 04678/14/0 as varied on 09/03/2019)

Scoping Opinion request for information	Paragraph/Table reference	Description
Extent and route of export cable corridor and number of cables	This Addendum Figure 1	Map of Export Cable Route (ECR) location (general)
	2012 ES Figure Volume 1 Figure 5.9	Map of ECR location and habitat map
	2012 ES, Chapter 5 Project Description. Table 5.5, 5.9 -5.12 and paras 5.78 - 5.94	Description of transmission asset including all infrastructure
	OfTA Marine Licence Cable Plan condition a)	Details of the location and cable laying techniques for the cables
	OfTA Marine Licence Cable Plan condition d)	Technical specification of all cables, including a desk based assessment of attenuation of electromagnetic field strengths and shielding;
Duration and method of cable deployment and type of vessels involved in cable laying operations	2012 ES, Chapter 5 Project Description. Table 5.16	Description of construction activities including vessel types and deployment calculated from the information described in paragraph 12 and the Chapter.
	2012 ES, Chapter 5 Project Description paras 5.191 -5.196 and Tables 5.17	Description of cable numbers, installation methods and cable installation rates
	OfTA Marine Licence Cable Plan condition part f)	Methodologies for over trawl surveys of the cables through the operational life of the Works where mechanical protection of cables laid on the sea bed is deployed
Habitat mapping within the cable corridor and the likely prey species of pSPA interest where the cable route crosses the pSPA	2012 ES, Chapter 7 Physical Environment Tables 7.26 and 7.29 (Summary) and paras 7.209-7.218; 7.276 – 7.288	Effects of cable installation on existing sediments and seabed structures.
	2012 ES, Chapter 8 Water and Sediment Quality Table 8.22 and paras 8.174-8.177	Defines WCS and assesses effects of ECR installation on water and sediment quality
	2012 ES, Chapter 11, Benthic Ecology and Intertidal Ecology. Tables 11.10, 11.11, 11.15, paras 11.85-11.89; 11.186-11.209. Figures 11.3, 11.7-11.9	Assessment of the Transmission Asset Project in relation to benthic ecology plus sampling locations and habitat maps
	OfTA Marine Licence Cable Plan conditions parts b) & c)	The results of survey work (including geophysical, geotechnical and benthic surveys)

Scoping Opinion request for information	Paragraph/Table reference	Description
		<p>which will help inform cable routing;</p> <p>A pre-construction survey for Annex 1 habitat and priority marine features to inform cable micro-siting and installation methods in consultation with the Licensing Authority and their advisors;</p>
Use of any cable protection materials-type, location and method of deployment	2012 ES, Chapter 5 Project Description paras 5.182-185	Description of cable protection materials (mattress and rock placement)
	2012 ES, Chapter 11, Benthic Ecology and Intertidal Ecology. Table 11.12c, Table 11.16 and paras 11.195-11-197.	Specific assessment of cable protection materials on benthic ecology
	OfTA Marine Licence Cable Plan conditions part e)	A burial risk assessment to ascertain if burial depths can be achieved. In locations where this is not possible then suitable protection measures must be provided, including structural grade 40 concrete 200 mm thick at Danger Area D604;
Schedule of operational maintenance checks, types of vessels, duration and timing	Operation and Maintenance Programme (OMP) (Offshore Transmission Works)	The OMP must set out the procedures and good working practices for the operations and maintenance of the OSPs, substructures, and cable network of the Works.
Any proposed mitigation and inclusion of draft cabling plans and cable management plan.	Cable Plan Operation and Maintenance Programme (OMP) (Offshore Transmission Works)	<p>Measures to address exposure of any cables.</p> <p>Environmental sensitivities which may affect the timing of the operation and maintenance activities must be considered in the OMP</p>