

A photograph of an offshore wind farm at sunset. The sky is a mix of orange, yellow, and light blue, with a few wispy clouds. The sun is low on the horizon, creating a warm glow. In the foreground, dark, choppy waves are breaking, with white foam visible. Several wind turbines are visible in the mid-ground, their silhouettes dark against the bright sky. The overall mood is serene and powerful.

# Salamander Offshore Wind Farm

Offshore EIA Report

Volume ER.A.4, Annex 12.7 - Offshore Ornithology  
Consultation Report



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Document Title:	Offshore Ornithology Consultation Report
Document no:	08680030
Project:	Salamander Offshore Wind Farm
Revision	00
Originator	ERM
Date	April 2024

Revision History:

Revision	Date	Status	Originator	Reviewed	Approved
00	19 April 2024	Final	ERM	Salamander	Hugh Yendole



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## 1 Offshore Ornithology Consultation Report

### 1.1 Consultation

- 1.1.1.1 Consultation is a key part of the application process. It has played an important part in ensuring that the baseline characterisation and impact assessment is appropriate to the scale of development as well as meeting the requirements of the regulators and their advisors.
- 1.1.1.2 An overview of the Salamander Project consultation process is outlined in **Volume ER.A.2, Chapter 5 Stakeholder Consultation**. Consultation regarding Offshore and Intertidal Ornithology has been conducted through production of the Scoping Report, an Offshore and Intertidal Ornithology specific scoping workshop held on 28 November 2022, and comments on and official response to the Scoping Report (i.e. the Scoping Opinion). In the scoping workshop, a series of questions were presented to stakeholders and discussed in detail, formal responses to these, collated by NatureScot are included in **Table 1-1**.
- 1.1.1.3 The comments raised during consultation specific to Offshore and Intertidal Ornithology are outlined in **Table 1-1**, including consideration of where the comments have been addressed within the EIAR.
- 1.1.1.4 Consultation has also been undertaken with regard to the Onshore, Intertidal and Nearshore Wintering and Migratory Bird Surveys. This consultation was undertaken for NatureScot and the Royal Society for the Protection of Birds (RSPB) Scotland to provide advice and agreement on the survey methodology. The discussions on this topic are presented summarised in **Table 1-2 of Volume ER.A.4, Annex 12.2 Intertidal Baseline Ornithology Report**.

Table 1-1 Consultation Responses Specific to Offshore and Intertidal Ornithology topic

Consultee	Date and Forum	Comment	Where it is addressed within this EIAR
The Royal Society for the Protection of Birds (RSPB) Scotland	21 June 2023; comments on EIA Scoping Report	RSPB Scotland encourage the adoption of a precautionary approach to the identification of relevant protected sites for seabirds with clear methodology on the exclusion of sites and species. We generally agree with the collection and analysis methods advised by NatureScot, with some exceptions as set out below. We recommend use of the guidance notes available on their website to inform assessment. If an Applicant chooses to undertake supplementary modelling using alternative parameters to that recommended, we suggest this is clearly labelled.	<p>The Environmental Impact Assessment Report (EIAR) assesses impacts against regional populations, which are calculated using Seabird Monitoring Programme (SMP) data and seabird foraging ranges, as described in <b>Volume ER.A.4, Annex 12.8 Offshore Ornithology Regional Populations Report</b>. Designated sites and their qualifying features are considered and assessed in the Habitats Regulations Appraisal (HRA) and the Report to Inform Appropriate Assessment (RIAA) (<b>Volume RP.A.1, Report 1: Report to Inform Appropriate Assessment (RIAA) Sections 7 and 11 Birds Assessment</b>).</p> <p>Policy, legislation, and guidance used to inform the Offshore Ornithology assessment are listed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Table 12-1 (Section 12.3)</b>. The latest NatureScot Guidance Notes have been referred to in all aspects of baseline data collection, analyses, modelling, and impact assessment, except where otherwise stated.</p>
RSPB Scotland	21 June 2023; comments on EIA Scoping Report	As set out in Searle <i>et al</i> (2023) (Searle' K. R., O'Brien, S. H., Jones, E. L., Cook, A. S. C. P., Trinder, M. N., McGregor, R. M., Donovan, C., McCluskie, A., Daunt, F., and Butler, A., 2023. A framework for improving treatment of uncertainty in offshore wind assessments for protected marine birds, ICES Journal of Marine Science, 2023; fsad025, <a href="https://doi.org/10.1093/icesjms/fsad025">https://doi.org/10.1093/icesjms/fsad025</a> ), assessing impacts of offshore windfarms and other renewables developments is inherently uncertain. This uncertainty is propagated throughout the impact assessments, as there are not only direct impacts, but ecosystem wide impacts that can change, for example, the abundance and availability of prey. Multiple data sources and modelling techniques are used to capture a simplified version of reality. They do not fully capture the complexity of seabird behavioural or demographic processes in a dynamic marine environment.	<p>The worst-case scenario has been assessed for all effects, including the maximum potential for habitat loss, collision risk, displacement, and vessel disturbance.</p> <p>Seabird displacement rates and collision estimates, as presented in <b>Volume ER.A.4, Appendices 12.3 and 12.6 Marine Ornithology: CRM and Displacement</b>, area based on the worst-case parameters. The worst-case outputs are taken forward to the impact assessment, applying a precautionary approach to assessment (<b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.11</b>).</p>
RSPB Scotland	21 June 2023; comments on	Not recognising these uncertainties risks poorly informed decisions being made. Furthermore, an underestimation of impacts will have repercussions when consenting later offshore wind development. If a precautionary	



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	EIA Scoping Report	approach is taken from the beginning, the likelihood of irreversible damage occurring is reduced even whilst our knowledge base is incomplete, and modelling improves.	
RSPB Scotland	21 June 2023; comments on EIA Scoping Report	The precautionary principle requires the Applicant to demonstrate with scientific certainty that something would not be harmful. The concept of something being overly precautionary dismisses the inherent uncertainty in modelling and overlooks the simplistic version of reality that the modelling captures.	
RSPB Scotland	21 June 2023; comments on EIA Scoping Report	<p>Bio-seasons for Kittiwake and Gannet</p> <p>The RSPB has outstanding issues with the manner in which the bio-seasons definitions from Furness (2015) have been defined for gannet [northern gannet (<i>Morus bassanus</i>)] and kittiwake [black-legged kittiwake (<i>Rissa tridactyla</i>)]. This is because by using the “migration-free” seasonal definition as opposed to full breeding season the early and later months of the season are effectively excluded. For example, the kittiwake breeding season is defined as May to July, when evidence from colony monitoring shows that birds are present from April at least to August. In the latter part of the season all birds will have fledged but individual birds will still be present with both young and adult birds coming back to the cliff. These are still SPA [Special Protection Area] birds, and those most likely to be affected by impacts from the development</p>	<p>NatureScot guidance and Royal Society for the Protection of Birds (RSPB) comments on the Scoping Report, the ‘migration-free’ seasons defined by Furness (2015) were not used to produce regional population estimates.</p> <p>For kittiwake and gannet, the seasonality was based on NatureScot (2020). Kittiwake breeding season is considered to be mid-April to August, with the non-breeding season covering September to mid-April. For gannet, the breeding season is mid-March to September and non-breeding is October to mid-March.</p> <p>Details on seasonality and regional populations are provided in <b>Volume ER.A.4, Annex 12.5 Displacement Assessment</b> and <b>Volume ER.A.4 (Section 2.1.3, Table 1), Annex 12.8 Offshore Ornithology Regional Populations Report (Section 2)</b>.</p>
RSPB Scotland	21 June 2023; comments on EIA Scoping Report	<p>Foraging Ranges for Common Guillemot and Razorbill</p> <p>We welcome using foraging ranges as published in Woodward <i>et al.</i> (2019) to derive connectivity with SPA colonies. We also recommend that site specific data are examined and where the maximum foraging range from the colony exceeds the generic value, that the site-specific value is used. The exceptions to this are for common guillemot and razorbill. Tracking on Fair Isle showed foraging for both common guillemot and razorbill distances are greater than those of all other colonies. This may relate to poor prey availability during the study. However, trends for seabirds in the Northern Isles indicate this may be becoming a more frequent occurrence. For all designated sites south of the</p>	<p>Recommended foraging ranges, including those devised by Woodward <i>et al.</i> (2019), and colony-specific ranges, where stated and where appropriate, were used to define regional population estimates (<b>Volume ER.A.4, Annex 12.8 Offshore Ornithology Regional Populations Report (Section 2.1, Table 1)</b>) and to inform HRA screening (<b>Accompanying Report A.1: Report to Inform Appropriate Assessment Sections 7 and 11 Birds Assessment</b>).</p>

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		<p>Pentland Firth (i.e. excluding the Northern Isles), we advise use of mean max (MM) plus one standard deviation (SD) discounting Fair Isle values. For clarity, North Caithness Cliffs SPA is considered to lie south of the Pentland Firth.</p> <p>[Common guillemot: Northern Isles SPAs: 153.7 km MM+SD; south of Pentland Firth: 95.2 km MM+SD. Razorbill: Northern Isles SPAs: 164.4 MM+SD; south of Pentland Firth: 122.2 km MM+SD.]</p> <p>In the non-breeding season, seabirds are not constrained by colony location and can, depending on individual species, range widely within UK seas and beyond.</p>	
RSPB Scotland	21 June 2023; comments on EIA Scoping Report	<p>Gannet</p> <p>Whilst the RSPB agree with the majority of the NatureScot advised Avoidance Rates including the use of a 98.9% avoidance rate for non-breeding gannets, in our opinion, a 98% avoidance rate is more appropriate for breeding gannets. This is because the figures used for the calculation of avoidance rates advocated by the SNCBs are largely derived from the non-breeding season for gannet. During the breeding season, gannets are constrained to act as central placed foragers meaning they return to the colony after feeding in order to maintain territories, incubate eggs and provide for chicks. Once chicks have fledged adult gannets remain at sea and no longer visit the colony. Differences in behaviour between the breeding and non-breeding season are likely to result in changes in avoidance behaviour.</p> <p>This seasonally defined change in reactive behaviour will also be reflected in the distributional changes occurring due to the presence of turbines. As such, alongside the 70% displacement rate recommended by NatureScot for the assessment of gannet, we recommend the presentation of 60% displacement rate during the breeding season.</p>	<p>The NatureScot recommended avoidance rates have been used for all species. Details on the Collision Risk Modelling (CRM) are provided in <b>Volume ER.A.4, Annex 12.3 Collision Risk Modelling Report (Section 2, Table 3 and Table 4)</b>.</p> <p>Current guidance (NatureScot Guidance Note 7) recommends that Cook <i>et al.</i> (2014) avoidance rates are used, which, for gannet, is 98.9%. Recent review of avoidance rates for collision modelling (Ozsarlav-Harris <i>et al.</i>, 2023) recommends that gannet avoidance is increased to 99.3% for sCRM, this is also noted in the interim avoidance rates presented in Guidance Note 7. Therefore, the 99.3% rate is used in the assessment and is considered appropriate.</p> <p>Predicted collisions using 98.9% and 99.3% avoidance rates were very low (up to five collisions in the breeding season). Decreasing the rate to 98% would not result in a notable increase in the significance of collision impacts to gannet populations, thus the 99.3% rate has been used for assessment.</p> <p>NatureScot recommended displacement rate of 70% has been applied for both breeding and non-breeding gannets. This rate is supported through review of existing developments. Details on distributional responses are provided in <b>Volume ER.A.4,</b></p>

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			<p><b>Annex 12.5 Displacement Assessment (Section 2.1.4, Table 3).</b></p>
RSPB Scotland	21 June 2023; comments on EIA Scoping Report	<p>EIA Assessment of Significance</p> <p>An EIA report must include a description of the likely significant effects of the development on the environment. RSPB are frequently presented with a matrix approach to significance which combines the value of a receptor with the magnitude of impacts. This formulaic approach is one way to present significance, but the categorisation is not biologically meaningful and may not be the best way to assess the significance of impacts. Furthermore, the uncertainty in the score, as described by Wade <i>et al.</i> (2016) is typically not incorporated into this approach. This should be case, and we would recommend doing so following the principal that the greater the uncertainty the greater the need for precaution (Searle <i>et al.</i>, 2023).</p> <p>When assessing significance, it is particularly relevant that:</p> <ul style="list-style-type: none"> <li>• Seabirds are relatively long-lived, take longer to reach breeding age than most other birds and have just one or two young per year. As a result, their populations are sensitive to small increases in adult mortality.</li> <li>• NatureScot’s latest assessment of 11 Scottish breeding seabird species show that numbers fell by nearly half (49%) between 1986 and 2019.</li> <li>• Governments of the UK have collectively failed to meet 11 out of the 15 indicators of Good Environmental Status (GES) for our seas as required under the Marine Strategy Regulations 2010. The marine birds indicator is moving away from target. For breeding seabirds, more species are now experiencing frequent, widespread breeding failures.</li> <li>• Black-legged Kittiwake and Atlantic Puffin are red listed on the Birds of Conservation Concern and have been assessed by the IUCN as vulnerable to global extinction.</li> </ul>	<p>The assessment methodology is presented in <b>Volume ER.A.2, Chapter 6 EIA Methodology</b>, with specifics relating to Offshore Ornithology discussed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.10</b> of this chapter.</p> <p>Receptor-specific approaches, and determination of receptor sensitivity and the significance of impacts are discussed throughout <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.10.3</b>.</p> <p>The conservation status, including recent population trends and threats to European and UK populations of seabirds are discussed on species-specific basis in the EIAR baseline (<b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.7.1</b>). Future changes to the baseline without development are discussed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.7.2</b>, and climate change is considered in detail in <b>Volume ER.A.3, Chapter 20: Climate Change and Carbon</b>.</p> <p>As per I Guidance Note 11, a 0.02%-point change in baseline mortality rate has been used as a threshold for PVA. PVA was undertaken where this threshold was met, considering the impacts across the lifeline of the development in comparison to the population size.</p>



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		<ul style="list-style-type: none"> <li>The growth of offshore wind is placing great cumulative pressure on seabird colonies.</li> </ul> <p>RSPB Scotland disagree with the magnitude of impact being assessed in terms of predicted increases to baseline mortality. As above, small increases in mortality can have large impacts. It is more meaningful to view impacts across the lifeline of the development in comparison to population size in the absence of the development and consider long-term viability of colonies and time for recovery.</p>	
RSPB Scotland	21 June 2023; comments on EIA Scoping Report	<p>EIA Non-technical Summary</p> <p>RSPB Scotland advocate for the planning and consenting process to be accessible. In relation to ornithology, the EIA will contain complex statistical models, the output of which is not readily understood by a lay person. A non-technical summary (NTS) is therefore vital to set out the main findings of the EIA report in an accessible way and in plain English so that it is easily understood by the public. It should not just describe the process but also clearly present information (to the specifications of the scoping opinion) with interpretation and explanation with clear figures, maps, and tables as necessary. It should not hide any key messages of the EIA by over-summarising or averaging out findings.</p> <p>The ornithological section of the NTS should clearly explain what is meant by ‘significant’ in an ornithological context. It should provide direction to the reader of where in the EIA Report to find information on how the sensitivity of the receptor was assessed and how the magnitude of potential impacts was calculated. If magnitude of impact has been related to a specific element or elements (for example time to recovery following cessation of project or alteration of the long-term viability of the population) this should made clear.</p> <p>We recommend the NTS contains clear information on how the mitigation hierarchy has been followed. The mitigation hierarchy requires that:</p> <ul style="list-style-type: none"> <li>Adverse impacts should firstly be avoided as far as possible;</li> </ul>	<p>The non-technical summary is included in <b>Volume ER.A.1, Document 1: Non-technical Summary</b>.</p> <p>The NTS provides a summary of the Offshore and Intertidal Ornithology assessment in plain English. The NTS outlines the key species identified through site surveys and the main effects on Offshore and Intertidal Ornithology receptors. The assessment conclusions are summarised and presented in the NTS, with full detail available in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology</b>.</p> <p>To keep the EIAR proportionate to the scale of the development, and to maintain consistency with other receptors, the NTS does not contain detailed technical information. The information which RSPB suggest is included is detailed in this chapter, under the following sections:</p> <ul style="list-style-type: none"> <li>Annual mortality for relevant species using the methods set out in the scoping opinion for the development in isolation (<b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.11.2</b>);</li> <li>Annual mortality for relevant species using the methods set out in the scoping opinion for the development in cumulation with impacts arising from any existing or approved</li> </ul>

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		<ul style="list-style-type: none"> <li>• Any remaining adverse impacts should then be minimised or reduced to as low as practical; and</li> <li>• For residual adverse impacts which are both unavailable and cannot be reduced further, measures to remedy or offset the impacts should be included within the application.</li> </ul> <p>To make the NTS informative, we welcome the use of short summary tables. We suggest a series of tables are used to present the following information:</p> <ul style="list-style-type: none"> <li>• Annual mortality for relevant species using the methods set out in the scoping opinion for the development in isolation</li> <li>• Annual mortality for relevant species using the methods set out in the scoping opinion for the development in cumulation with impacts arising from any existing or approved development</li> <li>• Predicted population size of relevant SPA colonies after the lifetime of the proposed development using the methods set out in the scoping opinion presented and as a percentage (min-max) of what it would have been in the absence of the proposed development</li> <li>• Predicted population size of relevant SPA colonies after the lifetime of the proposed development and other relevant developments (i.e. in cumulation) using the methods set out in the scoping opinion and presented as a percentage (min-max) of what it would have been in the absence of the proposed development</li> </ul>	<p>development (<b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.13.2</b>);</p> <ul style="list-style-type: none"> <li>• Predicted population size of relevant SPA colonies after the lifetime of the proposed development using the methods set out in the scoping opinion presented and as a percentage (min-max) of what it would have been in the absence of the proposed development (<b>Volume RP.A.1, Report 1: Report to Inform Appropriate Assessment (RIAA) Sections 7 and 11 Birds Assessment and RIAA Annex A.2.1: Apportioning Report</b>); and</li> <li>• Predicted population size of relevant SPA colonies after the lifetime of the proposed development and other relevant developments (i.e. in cumulation) using the methods set out in the scoping opinion and presented as a percentage (min-max) of what it would have been in the absence of the proposed development (<b>Volume RP.A.1, Report 1: Report to Inform Appropriate Assessment (RIAA) Sections 7 and 11 Birds Assessment and RIAA Annex A.2.1: Apportioning Report</b>).</li> </ul>
NatureScot	21 June 2023; comments on EIA Scoping Report	<p>Assessment approach</p> <p>The EIAR should consider the impact of all phases of the proposed development on the receiving environment, including effects from pre-construction activities as well as the construction, operation and maintenance and decommissioning phases.</p> <p>We note some elements of pre-construction activities are specifically highlighted in the identification of impacts for some receptors such as seabed</p>	<p>Impacts are scoped in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.8.2</b>, where justification for any impacts scoped out of the Offshore Ornithology assessment is provided. Impacts which are scoped in are assessed in <b>Section 12.11</b>, following the methodology outlined in <b>Section 12.10</b> and detailed in <b>Volume ER.A.2, Chapter 6 EIA Methodology</b>.</p>

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		preparation on benthic interests. However, we advise potential impacts from pre-construction works need to be considered for all receptors.	Pre-construction activities are also considered under the construction phase, this includes habitat loss due to seabed preparation works. The full footprint of all potential habitat loss is considered
NatureScot	21 June 2023; comments on EIA Scoping Report	<p>Ecosystem assessment</p> <p>Increasingly, there is a need to understand potential impacts holistically at a wider ecosystem scale in addition to the standard set of discrete individual receptor assessments. We note the intention in Section 6.5 to consider inter-related effects. This assessment should focus on potential impacts across key trophic levels particularly in relation to the availability of prey species. This will enable a better understanding of the consequences (positive or negative) of any potential changes in prey distribution and abundance from the development of the wind farm on seabird and marine mammal (and other top predator) interests, and what influence this may have on population level effects.</p>	<p>Potential impacts arising from inter-related effects are considered in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.16</b>. This includes assessment of habitat loss through all project phases, with consideration for impacts to prey items.</p> <p>Population-level effects associated with collision and displacement (where quantitative assessment has been undertaken) are considered in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.16</b> via Population Viability Analysis (PVA), with details presented in <b>Volume ER.A.4, Annex 12.4 Population Viability Analysis</b>.</p>
NatureScot	21 June 2023; comments on EIA Scoping Report	<p>Wet storage</p> <p>Section 4.6.2 (Floating Substructures) refers to the potential for wet storage of the substructures prior to their installation within the array area, either at the initial assembly site, the wind turbine integration site or a separate dedicated storage location. Section 4.7.1 (Floating Assembly) also indicates that once operational the substructures and WTGs will form an integrated assembly piece – the replacement of any major component parts of which is expected to be achieved by towing the assembly to port. Wet storage could represent a significant impact. Consideration of the potential impacts on all receptors needs to be addressed with the EIAR and HRA. We would welcome further discussion on this as and when further details are confirmed, noting the intention to seek a separate Marine Licence application for any requirements for wet storage outwith the array area.</p>	<p>Wet storage of the floating substructures (and integrated WTGs) prior to tow-out to the Offshore Array Area (OAA) is considered to be outside the scope of this EIA and the Marine Licence applications for the Offshore Development. This is due to the fact that at this stage of the Salamander Project it is not known which port(s) will be used for wet storage and therefore it is challenging to undertake a meaningful assessment of impacts related to wet storage. The intent is that the Salamander Project will utilise the services of a port(s) that offer wet storage sites, which will have appropriate consents (obtained by the port authority) for wet storage of floating substructures, fabrication and assembly with the WTGs. To enable the availability of this option for the Salamander Project within the required timeframe, SWPC is an official member of the TS-FLOW UK-North Joint Industry Project (JIP) exploring the challenges of wet storage and identifying the opportunities and potentially suitable locations for these activities. This JIP is in collaboration with relevant ports and other floating offshore wind developers.</p>

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			Separate Marine Licences and associated impact assessments for wet storage areas outwith the Offshore Development Area will be applied for and undertaken as appropriate.
NatureScot	21 June 2023; comments on EIA Scoping Report	<p>Mitigation</p> <p>We welcome the embedded environmental measures described in each of the relevant sections of the Scoping Report. However, much of the embedded mitigation detailed throughout includes the development and adherence to post consent plans / programmes, these do not strictly constitute mitigation. The EIAR must clearly articulate those mitigation measures that are informed by the EIA (or HRA) and are necessary to avoid or reduce predicted significant adverse environmental effects of the proposed development. We advise that the full range of mitigation and monitoring measures, and published guidance, are considered and discussed in the EIAR.</p>	Embedded mitigation measures are described in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.8.3 (Table 12-14)</b> . These are considered part of the Salamander Project design. Additional mitigation measures, where required, are discussed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.12</b> .
NatureScot	21 June 2023; comments on EIA Scoping Report	<p>Legislation, policy &amp; guidance</p> <p>Scoping question from Section 8.4.11</p> <p>Do you agree that all relevant legislation, policy and guidance documents have been identified for the offshore ornithology assessment, or are there any additional legislation, policy and guidance documents that should be considered?</p> <p>In addition to the guidance and data sources outlined in Table 8-13 (Section 8.4.3), we refer the applicant to our recently published suite of ornithology guidance notes 'Guidance to Support Offshore Wind Applications: Marine Ornithology', which should be reviewed in conjunction with the advice provided below.</p> <p>Please also note the protection of Ramsar sites in Scotland as detailed in Scottish Government policy.</p>	Policy, legislation, and guidance which are relevant to Offshore Ornithology have been referred to and considered throughout the EIAR. Items considered, including the most recent Guidance Notes published by NatureScot, are listed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Table 12-1 (Section 12.3)</b> .

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NatureScot	21 June 2023; comments on EIA Scoping Report	<p>Study area</p> <p>Scoping question from Section 8.4.11</p> <p>Do you agree with the study areas defined for offshore ornithology?</p> <p>We are content with the overall study area as proposed in Section 8.4.4 and Figure 8-14 which comprises the proposed (redefined) array area, export cable corridor and 4km buffer, noting that while the array has reduced in size, baseline data has been collected from the wider (original) area and associated buffer.</p>	The Offshore Ornithology study area is described in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.1.</b>
NatureScot	21 June 2023; comments on EIA Scoping Report	<p>Baseline characterisation</p> <p>Scoping question from Section 8.4.11</p> <p>Do you agree with the data and information sources identified to inform the baseline for offshore ornithology, or are there any additional data and information sources that should be considered?</p> <p>Section 8.4.5 makes reference to the Year 1 Digital Aerial Survey (DAS) Report (March 2021 – February 2022) for which we provided advice to the applicant on 13 October 2022. Section 1 within Appendix C (Offshore Ornithology Assessment) provides an overview in Table 1-1 of those species recorded in the DAS between March 2021 and August 2022 noting that the full list of species to be considered in the impact assessment is still to be determined. We note that in Table 1-1 tern species are not considered for either displacement or collision risk. As advised in recent scoping consultations (such as West of Orkney) these impacts should be considered for tern species if appropriate numbers are present on the site (after the full 2 years data are made available).</p>	<p>The full 24-month Digital Aerial Survey (DAS) data have been considered and used to inform the baseline environment described in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.7.1. Volume ER.A.4, Annex 12.1 Offshore Ornithology Baseline Data Report (Section 3)</b> details the results of the survey and subsequent analyses, including site-specific population and density estimates used in quantitative assessments. Regional populations against which impacts are assessed are presented in the baseline (<b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.7.1</b>) and methodology (<b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.10.6</b>) and detailed in <b>Volume ER.A.4, Annex 12.8 Regional Populations Report (Section 2, Table 2 and Table 3)</b>. A full list of sources used to inform the baseline environment is provided in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.6.2.</b></p> <p>Tern species were observed in very low numbers in the 24-month DAS period, and therefore, have been scoped out of the impact assessment.</p>
NatureScot	21 June 2023; comments on	It would be helpful to see the final baseline characterisation report covering the full 24-month survey period once this is available, particularly as the survey campaign spans the highly pathogenic avian influenza outbreak including periods where higher mortality was experienced by some species / colonies.	The Final DAS Report was submitted to NatureScot on 07 July 2023. NatureScot provided comments on the report by email on 21 July 2023. Additional information, specifically

Consultee	Date and Forum	Comment	Where it is addressed within this EIAR
	EIA Scoping Report	Further discussion may also be required to agree how any gaps in survey coverage are dealt with, if applicable.	<p>regarding kittiwake and auk numbers was provided to NatureScot by email letter on 16 August 2023.</p> <p>The Final DAS Report also discusses HPAI, including numbers of deceased birds. Following review of the DAS data, no data gaps were identified, and no additional data were required to be collected outside the initial DAS programme (24 months).</p> <p>The Final DAS Report was amended according to NatureScot comments dated 21 July 2023; the amended report was submitted on 19 December 2023.</p>
NatureScot	21 June 2023; comments on EIA Scoping Report	Section 8.4.10 and Appendix A confirms, in line with advice provided during the Scoping workshop held on 28 November 2022, a model-based approach (MRSea) will be adopted to generate species-specific density surfaces using data collected from the site-specific surveys. We support this approach, which will make full use of data collected across the wider (133 km <sup>2</sup> ) area plus buffer to more accurately inform density surfaces for the redefined array area.	<b>Volume ER.A.4, Annex 12.1 Offshore Ornithology Baseline Data Report (Section 2.1.2)</b> provides details on the modelling approach used for producing population estimates. The results of these analyses inform the baseline environment ( <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.7.1</b> ) upon which the impact assessment is based.
NatureScot	21 June 2023; comments on EIA Scoping Report	Further advice is available in guidance notes 2 (Guidance Note 2: Guidance to support Offshore Wind Applications: Advice for Marine Ornithology Baseline Characterisation Surveys and Reporting) & 9 (Guidance to support Offshore Wind Applications: Seasonal periods for Birds in the Scottish Marine Environment).	<b>Volume ER.A.4, Appendix 12.1 Offshore Ornithology Baseline Data Report</b> provides details on the modelling approach used for producing population estimates. The results of these analyses inform the baseline environment ( <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.7</b> ) upon which the impact assessment is based ( <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.11</b> ).
NatureScot	21 June 2023; comments on EIA Scoping Report	<p>Potential impacts</p> <p>Scoping question from Section 8.4.11</p> <p>Do you agree with the suggested embedded mitigation measures?</p>	Embedded mitigation measures are listed and discussed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.8.3 (Table 12-14)</b> ; additional mitigation measures, where required, and monitoring approaches are discussed and detailed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.12</b> .



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		<p>Do you agree that all potential receptors and impacts have been identified for offshore ornithology?</p> <p>We are content that requirements under the Marine Pollution Contingency Plan (MPCP) embedded mitigation measure is sufficient to address this impact pathway. However, please note that the full range of mitigation measures and published guidance should be considered and discussed in the EIAR.</p>	
NatureScot	21 June 2023; comments on EIA Scoping Report	No specific monitoring for offshore ornithology is mentioned in the ornithology section of the Scoping Report – further information on proposed ornithological monitoring should be discussed in the EIAR.	Monitoring plans and approaches are discussed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.12.</b>
NatureScot	21 June 2023; comments on EIA Scoping Report	The standard pathways of collision, disturbance and displacement have been captured in Section 8.4.7, together with relevant indirect effects. Increasingly there is need to ensure inter-related effects are considered holistically across key trophic levels to enable better understanding of the consequences (positive or negative) of potential changes to prey distribution and abundance upon top predators including ornithological interests and how this may influence population level effects.	Inter-related effects are considered in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.16</b> which include assessment of habitat loss (as supporting habitat for prey species) within the OAA and the Offshore ECC. Potential impacts to prey items are considered throughout the assessment, and the effect of prey availability on key receptors (e.g. auks) is discussed.
NatureScot	21 June 2023; comments on EIA Scoping Report	Consideration of pre-construction seabed preparation works may be required particularly with respect to vessel transit routes and potential disturbance.	Impacts associated with vessel transits are considered under ‘Displacement’ and are scoped in for all phases of the Salamander Project. Seabed preparation works are considered under ‘Direct Impacts to Supporting Habitat’, where short-term effects are scoped in for construction and decommissioning, and long-term impacts are scoped in for operation and maintenance. The scoping of impacts is detailed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.8.2</b> and the impact assessment in <b>Section 12.11.</b>
NatureScot	21 June 2023; comments on EIA Scoping Report	Barrier effects have been missed from Table 8-15 (Section 8.4.7). However, we accept that this impact pathway can be difficult to separate from displacement and that these can both be dealt with together in the assessment. As a general comment – we are moving towards terming these “distributional responses”.	Distributional responses, comprising both displacement and barrier effects arising from the presence of structures within the OAA, are considered in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.11.2.</b> The displacement assessment, including displacement matrices, is presented in <b>Volume ER.A.3, Chapter 12 Offshore and</b>

Consultee	Date and Forum	Comment	Where it is addressed within this EIAR
			<b>Intertidal Ornithology, Section 12.11.2</b> with supporting information in <b>Volume ER.A.4, Annex 12.5 Displacement Assessment (Section 3.1)</b> . Species specific displacement matrices for the breeding and non-breeding seasons are also presented in the assessment.
NatureScot	21 June 2023; comments on EIA Scoping Report	Section 4.6.2 (Floating Substructures) refers to the potential for wet storage of the substructures prior to their installation within the array area, either at the initial assembly site, the wind turbine integration site or a separate dedicated storage location. Section 4.7.1 (Floating Assembly) also indicates that once operational the substructures and WTGs will form an integrated assembly – the replacement of any major component parts of which is expected to be achieved by towing the assembly to port. Wet storage could represent a significant impact pathway. Consideration of which including potential impacts on ornithology receptors needs to be addressed with the EIAR and forthcoming HRA. We would welcome further discussion on this as and when further project details are confirmed, noting the intention to seek a separate Marine Licence application for any requirements for wet storage outwith the array area.	Wet storage of the floating substructures (and integrated WTGs) prior to tow-out to the OAA is considered to be outside the scope of this EIA and the Marine Licence applications for the Offshore Development. This is due to the fact that at this stage of the Salamander Project it is not known which port(s) will be used for wet storage and therefore it is challenging to undertake a meaningful assessment of impacts related to wet storage. The intent is that the Salamander Project will utilise the services of a port(s) that offer wet storage sites, which will have appropriate consents (obtained by the port authority) for wet storage of floating substructures, fabrication and assembly with the WTGs. To enable the availability of this option for the Salamander Project within the required timeframe, SWPC is an official member of the TS-FLOW UK-North Joint Industry Project (JIP) exploring the challenges of wet storage and identifying the opportunities and potentially suitable locations for these activities. This JIP is in collaboration with relevant ports and other floating offshore wind developers.  Separate Marine Licences and associated impact assessments for wet storage areas outwith the Offshore Development Area will be applied for and undertaken as appropriate.
NatureScot	21 June 2023; comments on EIA Scoping Report	Impact assessment  Scoping question from Section 8.4.11  Do you agree with the approach to analysis and assessment that will inform the EIA?	The impact assessment methodology is outlined in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.10</b> and detailed in <b>Volume ER.A.2, Chapter 6 EIA Methodology</b> .  The approach to and outputs of specific analyses and modelling (collision risk modelling (CRM) and assessment of distributional responses) are detailed in <b>Volume ER.A.4,</b>

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		We are content with the high-level summary provided in Section 8.4.10 on the tools and methods to be used in the impact assessment. Further detail can be found across our suite of guidance notes which we refer to below together with additional specific advice where appropriate.	<b>Annex 12.3 Collision Risk Modelling Report</b> and <b>Volume ER.A.4, Annex 12.5 Displacement Assessment</b> .  NatureScot Guidance Notes have been adhered to, with relevant policy, legislation, and guidance listed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Table 12-1 (Section 12.3)</b> .
NatureScot	21 June 2023; comments on EIA Scoping Report	Collision  We are content with the use of the stochastic collision risk model (McGregor <i>et al.</i> , 2018) and advise use of the 2022 update to the sCRM tool shiny app (Caneco, 2022). This update should also be used to run deterministic outputs (with values specified to enable repeatability). Outputs for both stochastic and deterministic CRM should be presented using this tool. Table 3-1, Section 3, in Appendix C provides parameters for CRM for likely species which aligns with our guidance. In terms of nocturnal activity, we would expect that Garthe and Hüppop (2004) be used for all species other than gannet which should use Furness <i>et al.</i> (2018), as stated in our guidance. We are aware that a Natural England report on nocturnal avoidance rates has just been published. NatureScot are currently reviewing this and will update our Guidance if needed. We aim to issue comments on the Natural England report to all ScotWind and INTOG applicants in the near future.	The stochastic CRM (sCRM) tool (Caneco, 2022) was used for all scenarios, and results from the stochastic tool as well as deterministic outputs are presented.  Full detail of input parameters and outputs are presented in <b>Volume ER.A.4, Annex 12.3 Collision Risk Modelling Report (Section 2 and Section 3)</b> .
NatureScot	21 June 2023; comments on EIA Scoping Report	Avoidance rates for sCRM are presented in Table 3-2, Section 3, Appendix C. We are currently reviewing the Ozsanlav-Harris <i>et al.</i> (2023) report and will be providing an imminent update on our recommended avoidance rates.	CRM has been run with recommended avoidance rates and with the Ozsanlav-Harris <i>et al.</i> (2023) avoidance rates. Assessment conclusions are based on the Applicant Approach using Ozsanlav-Harris <i>et al.</i> (2023) avoidance rates, however, collision estimates based on the 2014 avoidance rates are presented for additional context. The specific values applied under both approaches are presented in Volume ER.A.4, Annex 12.3: Collision Risk Modelling Report
NatureScot	21 June 2023; comments on EIA Scoping Report	The potential collision risk to migratory species should be assessed qualitatively with reference to the survey results and the existing strategic level report WWT and MacArthur Green (2014). However, we advise that an updated review of migratory routes and vulnerabilities across the UK is currently being prepared on behalf of Marine Directorate. This work also	It is noted that, as of end 2023, the migratory CRM (mCRM) tool is currently not finalised, and the Cumulative Effects Framework (CEF) tool has not yet been published (this will include an updated version of the mCRM tool).

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		includes development of a stochastic migration CRM tool (known as mCRM) to enable quantitative assessment of risks to migratory Special Protection Area (SPA) species including swans, geese, divers, sea duck and raptors. The updated review and its associated mCRM tool should be available imminently to then be used within the assessment.	<p>The British Trust for Ornithology (BTO) Strategic Ornithological Support Services Migration Assessment Tool (SOSS-MAT) has been used to identify the potential for interaction between migrating birds and the Offshore Development Area. Where present, spatial overlap is minimal, with the Salamander Project having potential to interact with a small proportion of migration corridors for all species.</p> <p>Migratory birds are described and discussed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.7.1.</b></p>
NatureScot	21 June 2023; comments on EIA Scoping Report	<p>Distribution responses (displacement / barrier effects)</p> <p>As confirmed through the Scoping workshop held in November 2022, we are content, in this instance, for the matrix approach to be used as the primary method to assess displacement, reiterating that we are also keen to see outputs from SeabORD where possible. Table 2-1 in Section 2 (Appendix C) presents displacement and mortality rates that aligns with our guidance. We are content with the parameterisation of SeabORD as per Table 5-1, section 5 in Appendix C.</p>	<p>The matrix approach has been used to inform the quantitative assessment of distributional responses. The approach and outputs are detailed in <b>Volume ER.A.4, Annex 12.5 Displacement Assessment.</b></p>
NatureScot	21 June 2023; comments on EIA Scoping Report	<p>Apportioning</p> <p>We expect apportioning during the breeding season to be undertaken following the theoretical approach, with the exception of kittiwake, guillemot, razorbill and shag species, which should use the apportioning tool (Butler <i>et al.</i>, 2020).</p>	<p>Apportioning to specific colonies and populations has not been undertaken for the EIAR. The EIAR assesses impacts against regional populations, which includes the sum of impacts during breeding and non-breeding to present annual estimates.</p> <p>Apportioning to specific populations has been undertaken for the HRA (<b>Volume RP.A.1, Report 1: Report to Inform Appropriate Assessment (RIAA) Sections 7 and 11 Birds Assessment and RIAA Annex A.2.1: Apportioning Report</b>).</p>
NatureScot	21 June 2023; comments on	<p>For most species, non-breeding season impacts should be apportioned using the BDMPS approach (Furness, 2015). Species where we expect a majority of the breeding season population to be present in the surrounding region in the non-breeding season (for example guillemot and herring gull), the correct population to assess impacts for in the non-breeding season is a regional one</p>	<p>Regional populations have been defined and used as a baseline against which impacts are assessed (<b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.11</b>). The methodology for determining regional population estimates is detailed in <b>Volume ER.A.4,</b></p>

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	EIA Scoping Report	defined by the breeding season mean-max foraging range plus 1 standard deviation distance.	<b>Annex 12.8 Offshore Ornithology Regional Populations Report (Section 2).</b>
NatureScot	21 June 2023; comments on EIA Scoping Report	For guillemot, non-breeding season impacts should be apportioned based on breeding season regional populations with reference tracking data from Buckingham <i>et al.</i> (2022).	Buckingham <i>et al.</i> (2022) indicate that birds do not disperse widely post-breeding, therefore, the non-breeding regional population has been derived from the breeding season population. This is detailed in <b>Volume ER.A.4, Annex 12.8 Offshore Ornithology Regional Populations Report (Section 2.2).</b>
NatureScot	21 June 2023; comments on EIA Scoping Report	Apportioning is not required for puffin in the non-breeding season. For herring gull during the non-breeding season – a correction factor should be applied to the breeding season regional population to account for the influx of non-UK and west coast UK birds into the North Sea BDMPS.	Non-breeding season puffins were not apportioned.  A correction factor of 29.8% has been applied to the herring gull population to account for the influx of non-UK and west coast birds into the North Sea region.  This is reflected in <b>Volume ER.A.4, Annex 12.8 Offshore Ornithology Regional Populations Report (Section 2)</b> , in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Table 12-9</b> , and impacts on herring gull have been assessed against the corrected population.
NatureScot	21 June 2023; comments on EIA Scoping Report	Population Viability Analysis (PVA)  We support the use of the NE PVA tool (Searle <i>et al.</i> , 2019) – please see guidance note 11 for further advice, noting that the modelling of impacts should be undertaken over three time periods:  <ul style="list-style-type: none"> <li>• 25 years</li> <li>• 35 years – the lease period [the operational life of the Salamander Project]</li> <li>• 50 years</li> </ul> While we use a threshold of 0.02 percentage point to determine the need for PVA, we do not advocate use of a threshold when considering counterfactuals	PVA has been undertaken for a range of scenarios, including those specified by NatureScot (25, 35, and 50 years).  Impacts against regional populations ( <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.10.6</b> ) and SPA populations have been assessed, to inform the EIAR ( <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.11</b> ) and HRA ( <b>Volume RP.A.1, Report 1: Report to Inform Appropriate Assessment (RIAA) Sections 7 and 11 Birds Assessment</b> ), respectively. A narrative approach has been employed for the HRA.  The methodology and outputs are detailed in <b>Volume ER.A.4, Annex 12.4 Population Viability Analysis.</b>

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		metrics. Instead, we expect narrative to accompany the PVA output tables to justify assessment conclusions.	It should be noted that, whilst PVA has been undertaken for the periods specified, the Exclusivity Agreement (i.e. not yet a Lease) is for 25 years. However, the worst-case scenario is for a 35-year operational life, therefore, outputs for the 35-year scenario are used to inform the assessment.
NatureScot	21 June 2023; comments on EIA Scoping Report	<p>Cumulative effect and transboundary impacts</p> <p>Scoping question from Section 8.4.11</p> <p>Do you agree with the approach for cumulative effects assessment and transboundary impacts?</p> <p>We note and support the use of the CEF and direct the applicant to MD-LOT for further information on when this tool will be available.</p> <p>We recently concluded that the Berwick Bank application would have an adverse effect on site integrity (AEoSI) across multiple seabird species within The UK European Site Network, some of which overlap with the species and sites likely to require assessment for this application. Due to this conclusion and the unknown outcome of the Berwick Bank application at present, we anticipate that multiple PVA models should be run, with and without Berwick Bank.</p> <p>Cumulative assessment should be further discussed with NatureScot to ensure that both the worst case and realistic worst case are both taken forward into a cumulative assessment.</p> <p>The proposed approach to transboundary impacts is set out in Section 8.4.9. Further discussion on this topic with MD-LOT and NatureScot will be required following submission of the final Ornithology Baseline Report. The HRA Stage 1 Screening Report identifies connectivity and likely significant effect (LSE) with seabird populations that breed outside Scotland.</p>	<p>Population Viability Analysis (PVA) has been run using several scenarios, including with and without Berwick Bank, and for periods including 25 years, 35 years (operational life), and 50 years. PVA methodology and results are presented in full in <b>Volume ER.A.4, Annex 12.4 Population Viability Analysis</b>.</p> <p>Cumulative effects of relevance to Offshore Ornithology are discussed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.13</b>.</p> <p>Transboundary effects are considered in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.14</b>. Transboundary effects with relevance to Natura 2000 Sites are considered in <b>Volume RP.A.1, Report 1: Report to Inform Appropriate Assessment (RIAA) Sections 7 and 11 Birds Assessment</b>.</p>
Marine Directorate – Licensing	21 June 2023; Scoping Opinion	EIA Scope	Scoping of impacts has been considered in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.8.2. Table 12-13</b> lists scoped out impacts and



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Operations Team (MD-LOT)		Matters are not scoped out unless specifically addressed and justified by the Developer and confirmed as being scoped out by the Scottish Ministers. The matters scoped out should be documented and an appropriate justification noted in the EIA Report.	associated phases and provides justification for scoping impacts out of assessment.
MD-LOT	21 June 2023; Scoping Opinion	Mitigation and Monitoring  Any embedded mitigation relied upon for the purposes of the assessment should be clearly and accurately explained in detail within the EIA Report. The likely efficacy of the mitigation proposed should be explained with reference to residual effects. The EIA Report must identify and describe any proposed monitoring of significant adverse effects and how the results of such monitoring would be utilised to inform any necessary remedial actions.	Embedded mitigation is discussed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.8.3</b> and listed in <b>Table 12-14</b> . Additional mitigation and monitoring commitments are discussed in <b>Section 12.12</b> .
MD-LOT	21 June 2023; Scoping Opinion	The EIA Report must include a table of mitigation which corresponds with the mitigation identified and discussed within the various chapters of the EIA Report and accounts for the representations and advice attached in Appendix I.	Mitigation of relevance to Offshore Ornithology is discussed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Sections 12.8.3 and 12.12</b> .
MD-LOT	21 June 2023; Scoping Opinion	Where potential impact on the environment have been fully investigated but found to be of little or no significance, it is sufficient to validate that part of the assessment by detailing in the EIA Report, the work that has been undertaken, the results, what impact, if any, has been identified and why it is not significant.	Impacts on Offshore Ornithology are assessed against the baseline environment described in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.7.1</b> , and the assessment ( <b>Section 12.11</b> ) uses the magnitude of the impact and sensitivity of each receptor to determine the significance of the impact.
MD-LOT	21 June 2023; Scoping Opinion	Offshore Ornithology  The Scottish Ministers are content with the proposed study areas defined and outlined in Figure 8-14 of the Scoping Report.	The Offshore Ornithology study area is discussed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.1</b> .
MD-LOT	21 June 2023; Scoping Opinion	Regarding the relevant legislation, policy and guidance documents identified and outlined in Table 8-13, the Scottish Ministers highlight the additional guidance notes and policy recommended within the NatureScot representation and advise these must be fully considered by the Developer within the EIA Report. In addition, the Scottish Ministers highlight the RSPB Scotland representation regarding the non-technical summary to be included	Policy, legislation, and guidance with relevance to Offshore Ornithology are considered in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.3</b> .

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		within the EIA Report. The Scottish Ministers advise that the comments and recommendations of RSPB Scotland with regard to guidance must be fully considered and addressed by the Developer.	The Non-technical Summary is provided in <b>Volume ER.A.1, Document 1: Non-technical Summary.</b>
MD-LOT	21 June 2023; Scoping Opinion	In relation to the baseline characterisation, the Scottish Ministers note the reference to the Year 1 Digital Aerial Survey report which provides an overview of the species recorded between March 2021 and August 2022, and that the full list of species to be considered within the assessment is still to be determined. The Scottish Ministers highlight the NatureScot representation in this regard and advise the Developer that consideration must be given to tern species within the assessment for displacement and collision risk. The Scottish Ministers also highlight the NatureScot representation requesting sight of the final baseline characterisation report covering the full 24-month survey period once available. In addition, the Scottish Ministers highlight the representation by RSPB Scotland regarding the adoption of a precautionary approach to the identification of relevant protected sites for seabirds. The Scottish Ministers advise that the Developer must present clear methodology within the EIA Report with regard to the exclusion of any sites and species not considered within the assessment.	<p>The full 24-month DAS data have been considered and used to inform the baseline environment described in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.7.1. Volume ER.A.4, Annex 12.1 Offshore Ornithology Baseline Data Report</b> details the results of the survey (<b>Section 2.1</b>) and subsequent analyses (<b>Section 2.1.2</b>), including site-specific population and density estimates used in quantitative assessments (<b>Section 3</b>). Regional populations against which impacts are assessed are presented in the baseline (<b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.7.1</b>) and detailed in <b>Volume ER.A.4, Annex 12.8 Regional Populations Report (Section 2, Table 2 and Table 3)</b>. A full list of sources used to inform the baseline environment is provided in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.6.2.</b></p> <p>To clarify, tern species were observed in very low numbers in the 24-month DAS period, and therefore, have been scoped out of the impact assessment.</p>
MD-LOT	21 June 2023; Scoping Opinion	In Section 8.4.7 of the Scoping Report the Developer summarises the potential impacts for offshore and intertidal ornithology during the different phases of the Proposed Development which it proposes to scope in and out for assessment within the EIA Report. The Scottish Ministers broadly agree with the potential impacts proposed to be scoped in and out however, direct the Developer further to the NatureScot representation. The Scottish Ministers advise that consideration of inter-related effects and pre-construction seabed preparation works must be considered within the EIA Report. With regard to wet storage, the Scottish Ministers advise that the Scoping Report does not adequately capture impacts of wet storage on ornithological interests and must be fully addressed by the Developer in the EIA Report.	<p>Scoping of impacts has been considered in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.8.2. Table 12-13</b> lists scoped out impacts and associated phases and provides justification for scoping impacts out of assessment.</p> <p>Impacts associated with wet storage within the OAA are covered by Displacement (for wet storage during all phases of the Salamander Project) and / or Distributional Responses (for any wet storage that may overlap with the operation and maintenance phase). These effects are considered in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.11.</b></p>

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			<p>Impacts associated with wet storage outside the OAA are not scoped in for assessment within the EIAR.</p> <p>Wet storage of the floating substructures (and integrated WTGs) prior to tow-out to the OAA is considered to be outside the scope of this EIA and the Marine Licence applications for the Offshore Development. This is due to the fact that at this stage of the Salamander Project it is not known which port(s) will be used for wet storage and therefore it is challenging to undertake a meaningful assessment of impacts related to wet storage. The intent is that the Salamander Project will utilise the services of a port(s) that offer wet storage sites, which will have appropriate consents (obtained by the port authority) for wet storage of floating substructures, fabrication and assembly with the WTGs. To enable the availability of this option for the Salamander Project within the required timeframe, SWPC is an official member of the TS-FLOW UK-North Joint Industry Project (JIP) exploring the challenges of wet storage and identifying the opportunities and potentially suitable locations for these activities. This JIP is in collaboration with relevant ports and other floating offshore wind developers.</p> <p>Separate Marine Licences and associated impact assessments for wet storage areas outwith the Offshore Development Area will be applied for and undertaken as appropriate.</p>
MD-LOT	21 June 2023; Scoping Opinion	In relation to the tools and methods to be used in the impact assessment, the Scottish Ministers are broadly content with the summary provided in Section 8.4.10 of the Scoping Report. The Scottish Ministers advise that, regarding the approach to analysis and assessment to inform the EIA, the Developer must fully consider and implement the recommendations within the NatureScot and RSPB Scotland representations specifically in relation to collision, distribution responses, apportioning and population viability analysis ("PVA"). With regard to avoidance rates, the Scottish Ministers highlight the RSPB Scotland representation regarding gannet and the NatureScot comments around the review of avoidance rates, specifically for application in the stochastic Collision Risk Model, is ongoing and NatureScot will advise of any	<p>The impact assessment methodology is outlined in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.10</b> and detailed in <b>Volume ER.A.2, Chapter 6 EIA Methodology</b>.</p> <p>The approach to, input parameters, and outputs / results of specific analyses and modelling and assessment of distributional responses) are detailed in <b>Volume ER.A.4, Annex 12.3 Collision Risk Modelling Report</b> and <b>Volume ER.A.4, Annex 12.5 Displacement Assessment</b>.</p>

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		revised position once this process is complete. Further discussion on this will be required with NatureScot and MD-LOT.	NatureScot Guidance Notes have been adhered to, with relevant policy, legislation, and guidance listed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Table 12-1 (Section 12.3)</b> .
MD-LOT	21 June 2023; Scoping Opinion	The Scottish Ministers advise the Developer to address the points raised in the RSPB Scotland response in full including the recommendation that site specific data should be examined and, where maximum foraging range from colonies exceeds its generic value, the site-specific value should be used.	The Final DAS Report, covering the full 24-month DAS results, was submitted on 07 July 2023.  Recommended foraging ranges, including those devised by Woodward <i>et al.</i> (2019), and colony-specific ranges, where appropriate, were used to define regional population estimates ( <b>Volume ER.A.4, Annex 12.8 Offshore Ornithology Regional Populations Report (Section 2.1, Table 1 and Table 2)</b> ) and to inform HRA ( <b>Volume RP.A.1, Report 1: Report to Inform Appropriate Assessment (RIAA) Sections 7 and 11 Birds Assessment</b> ).
MD-LOT	21 June 2023; Scoping Opinion	In line with the NatureScot representation, the Scottish Ministers advise that where impact pathways have been identified, the Developer must include a full range of monitoring and mitigation techniques within the EIA Report. The EIA Report must clearly articulate those Mitigation measures that are informed by the EIA and are necessary to avoid or reduce predicted significant adverse environmental effects of the proposed development.	Embedded mitigation is discussed in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.8.3</b> and listed in <b>Table 12-14</b> . Additional mitigation and monitoring commitments are discussed in <b>Section 12.12</b> .
MD-LOT	21 June 2023; Scoping Opinion	The Scottish Ministers agree with the NatureScot representation regarding cumulative effects and transboundary impacts and advise that multiple PVA models should be run which both include and omit the Berwick Bank Offshore Wind farm. The Scottish Ministers also agree that the cumulative assessment should be further discussed with MD-LOT and NatureScot to ensure that both worst case and realistic worst case are both taken forward into a cumulative assessment. Further discussions will also be required on the proposed approach to transboundary impacts following the submission of the final Ornithology Baseline Report.	PVA has been run using several scenarios, including with and without Berwick Bank, and for periods including 25 years, 35 years (operational life), and 50 years. PVA methodology and results are presented in full in <b>Volume ER.A.4, Annex 12.4 Population Viability Analysis</b> .  Transboundary effects are considered through determination of regional populations. Species foraging ranges have been used to identify which colonies are included in calculating regional population estimates against which impacts are assessed. For the non-breeding season, a combination of foraging ranges and Biologically Defined Minimum Population Scales (BDMPS) have been used. Further information on the approach is presented in <b>Volume ER.A.3, Chapter 12 Offshore</b>

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			<b>and Intertidal Ornithology, Section 12.1</b> and in <b>Volume ER.A.4, Annex 12.8 Offshore Ornithology Regional Populations Report (Section 2.2, Table 3).</b>
MD-LOT	21 June 2023; Scoping Opinion	In regard to the HRA Screening Report, the Scottish ministers highlight NatureScot comments in relation to guidance notes used and advise the Developer must address this. The Scottish Ministers also advise the Developer that if wet storage is to be an integral part of the application, then impacts arising from wet storage must also be fully addressed in the HRA, with specific reference to the NatureScot comments in relation to the potential impact on shag populations.	The HRA screening and RIAA are presented in <b>Volume RP.A.1, Report 1: Report to Inform Appropriate Assessment (RIAA) Sections 7 and 11 Birds Assessment.</b>
MD-LOT	21 June 2023; Scoping Opinion	The Scottish Ministers refer the Developer to NatureScot comments regarding connectivity and identification of key sites for migratory birds (non-seabirds) and advise the Developer must fully consider and address the advice and recommendations provided.	Migratory birds are described in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.7.1.</b> Interaction with the Salamander Project is determined through use of SOSS-MAT and the site-specific DAS data.  Spatial interaction with migration corridors is small or non-existent for all species. Combined with no observations of migratory birds recorded in the DAS, impacts to birds during migration are assessed as negligible.  Impacts to SPA populations are assessed in <b>Volume RP.A.1, Report 1: Report to Inform Appropriate Assessment (RIAA) 7 and 11 Birds Assessment.</b>
NatureScot	21 July 2023; comments on Year 2 Digital Aerial Survey (DAS) Report	Survey Results  We note that there are substantial differences in numbers of some species between the 2021 and 2022 surveys.	The Final DAS Report was submitted to NatureScot on 07 July 2023. NatureScot provided comments on the report by email on 21 July 2023. Additional information, specifically regarding kittiwake and auk numbers was provided to NatureScot by email letter on 16 August 2023.  The Final DAS Report has been amended according to NatureScot comments dated 21 July 2023; the amended report was submitted on 19 December 2023.

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NatureScot	21 July 2023; comments on Year 2 DAS Report	<p>Auks</p> <p>There is a marked increase in guillemot numbers in year 2, with a total of 5237 birds in 2021 and 12,640 in 2022. This is especially noticeable in August and September – 858 in August 2021 compared with 4629 in August 2022; 831 in September 2021 compared with 3795 in September 2022.</p> <p>Puffins show a similar peak in August 2022 of 1553, with only 45 records in August 2021. Razorbill were generally only recorded in small numbers, but August 2022 showed a peak of 253 which was not reflected in the August 2021 figure of 22 birds.</p> <p>These peaks occur within the large auk (common guillemot and razorbill) post-breeding dispersal (approximately July – October), with large aggregations of birds often appearing offshore during these months. This post-breeding period is when fledged young remain dependent upon their parent and guillemot and razorbill also moult during this period and are therefore flightless.</p> <p>Aggregations like these have been noted within other offshore wind farm surveys along the east coast, however, there is limited understanding of the drivers behind the post-breeding aggregations that have been observed and whether the same areas are used consistently or by the same individuals, across years. We acknowledge that these aggregations are temporary, can be variable in nature and may be influenced by factors such as diet and fish stocks. We also appreciate that a single survey per month may not pick up the peak aggregations.</p> <p>It is possible large auks could make use of established currents during this period, defining to some extent their likely locations each year. The proposed development is situated in an area where guillemots from colonies along the length of the east coast of Scotland could congregate, suggesting that large aggregations may be likely. In addition, the survey results generally indicate that this area is being used for foraging and availability of fish may attract large numbers of birds.</p> <p>Therefore, in summary, we have concerns about the low numbers of auks, especially guillemots, recorded for the August / September auk dispersal period in 2021, relative to 2022, and consider that the 2021 results may not</p>	<p>The Final DAS Report was submitted to NatureScot on 07 July 2023. NatureScot provided comments on the report by email on 21 July 2023. Additional information, specifically regarding kittiwake and auk numbers was provided to NatureScot by email letter on 16 August 2023.</p> <p>The Final DAS Report has been amended according to NatureScot comments dated 21 July 2023; the amended report was submitted on 19 December 2023.</p> <p>NatureScot’s second recommended approach has been adopted: available data have been undertaken reviewed. Auk abundance and distribution, specifically during the post-breeding moult period, and influential factors are discussed in the additional information response letter and in the EIAR baseline (<b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.7.1</b>).</p>



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		<p>provide representative data. We suggest that the following may have affected the results in 2021:</p> <ul style="list-style-type: none"> <li>• The auk wreck of Autumn 2021, which began with initial strandings in August on the east coast of Britain.</li> <li>• The presence of a man-made object in the survey area during the August 2021 survey. No detail about this object is provided in terms of its size, activity etc., making it difficult to assess whether its presence was likely to have disturbed / displaced birds.</li> </ul> <p>We would be interested in any information you could provide that might help explain the significant differences in numbers of auks, especially guillemots, recorded in the two years.</p> <p>In view of the issues outlined above, we suggest two possible options for addressing this:</p> <ol style="list-style-type: none"> <li>1. Undertake additional digital aerial surveys in August and September 2023 following the same methodology used in the previous surveys and, if possible, similar dates. This could help establish more reliable baseline data for auks in the dispersal period.</li> <li>2. Carry out a review of data available, or being collected, from east coast offshore wind farm sites on auk numbers and dispersal, particularly in August and September. This could provide useful data to help inform how the post-breeding dispersal period is considered within the assessment and for developing management options for the construction, operation and decommissioning phases. As well as data from other site-specific bird surveys and monitoring, the study could include the regional DAS surveys being undertaken by the East Developer Collaboration. It may also be useful to review any recent guillemot productivity data from the region, if available, to clarify chick fledging dates.</li> </ol> <p>Our recommendation would be to undertake option 2, as we consider that this option would provide the most useful information. The continuation of the Highly Pathogenic Avian Influenza (HPAI) event this year, which seems to be</p>	

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		affecting auks, may mean that additional survey data from this year would not clarify the issue sufficiently.	
NatureScot	21 July 2023; comments on Year 2 DAS Report	<p>Kittiwake</p> <p>We also note that kittiwake numbers show a peak in August 2022 of 988 records, which is not apparent in 2021 when only 84 were recorded. It would be helpful if you could provide any information to explain this peak.</p>	<p>The Final DAS Report was submitted to NatureScot on 07 July 2023. NatureScot provided comments on the report by email on 21 July 2023. Additional information, specifically regarding kittiwake and auk numbers was provided to NatureScot by email letter on 16 August 2023.</p> <p>The Final DAS Report has been amended according to NatureScot comments dated 21 July 2023; the amended report was submitted on 19 December 2023.</p> <p>Black-legged kittiwake abundance and distribution, specifically during the post-breeding moult period, and influential factors are discussed in the additional information response letter and in the EIAR baseline (<b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.7.1</b>).</p>
NatureScot	21 July 2023; comments on Year 2 DAS Report	<p>HPAI [Highly Pathogenic Avian Influenza]</p> <p>In our response to the year 1 survey report we commented ‘As the year 1 surveys were carried out before the HPAI outbreak and the year 2 surveys will have been carried out as the outbreak intensified, it will be interesting to know in the second year analysis if impacts from HPAI are observed.’</p> <p>There is no mention of HPAI in the report and we would be interested to know if you have any comments to make in this respect. For example, it would be helpful to know whether any dead or dying birds were recorded during the surveys.</p>	<p>The Final DAS Report has been amended according to NatureScot comments dated 21 July 2023; the amended report was submitted on 19 December 2023.</p> <p>The report includes reference to any deceased birds observed during the DAS. HPAI is also discussed with relevance to specific species in the EIAR baseline (<b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.7.1</b>) and with consideration of the future baseline (<b>Section 12.7.2</b>).</p>
NatureScot	21 July 2023; comments on Year 2 DAS Report	Fish Stocks	Fish stocks, as prey items for seabirds, are discussed in relation to the DAS results in the EIAR baseline ( <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.7.1</b> ).

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		<p>The survey report highlights that, for a number of species including guillemot, razorbill, puffin and gannet, large numbers of birds were recorded sitting on the water, indicating the survey area was being used for foraging.</p> <p>In light of this, it will be important to ensure that sufficient data are available /collected to enable an assessment of bird prey availability – including fish stocks, spawning grounds, fish habitat and fishing activity. We advise the ornithology chapter of the EIA Report should contain a summary of this assessment, with clear links to relevant data in the benthic and fish / shellfish chapter, including the Essential Fish Habitat Maps for Fish and Shellfish Species in Scotland developed by the Scottish Marine Energy Research (ScotMER) programme.</p>	<p>The results of the Benthic Ecology and Fish and Shellfish Ecology impact assessments (<b>Volume ER.A.3, Chapter 9 Benthic and Intertidal Ecology (Section 9.11)</b> and <b>Volume ER.A.3, Chapter 10 Fish and Shellfish Ecology (Section 10.11)</b>) are also considered where relevant to the Offshore Ornithology impact assessment (<b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.11</b>).</p>
NatureScot	26 September 2023; email communication	Regarding our advice at Scoping on transboundary impacts – having reviewed the Year 2 Digital Aerial Survey Report we are content with the approach as set out in Section 8.4.9 of the Scoping Report.	Transboundary effects are presented in <b>Volume ER.A.3, Chapter 12 Offshore and Intertidal Ornithology, Section 12.14</b> .