STROMAR

Stromar Offshore Wind Farm

Habitats Regulations Appraisal

Stage 1: Screening

Proposed Offshore Development

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Executive Summary

This report presents the conclusions of The Habitats Regulations Appraisal (HRA) Step 3 Screening, undertaken for the offshore aspects of the Stromar Offshore Wind Farm (the Project). The Project is being developed by a consortium of Ørsted, Falck Renewables and BlueFloat Energy (hereafter the Developer) and is progressing through the ScotWind leasing round. The Project is a floating wind farm, located off the north-east coast of Scotland. HRA Screening for the onshore aspects is presented in the Onshore Screening Report (Ørsted, 2023a).

This report provides the necessary information required by the Competent Authority under the Conservation (Natural Habitats &c.) Regulations 1994 and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (the 'Habitats Regulations') to undertake HRA Screening of the offshore aspects of the Project, to determine the potential for a Likely Significant Effect (LSE) in relation to the conservation objectives of certain protected sites during the construction, operation & maintenance and decommissioning of the Project. The information is provided with respect to European Sites (the UK Site Network) and includes Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Ramsar sites are included as a matter of government policy. The approach to Screening has been informed by relevant guidance, recent Scottish examples and project level consultation.

The conclusions of the report include the identification of the potential for LSE for a number of designated sites and features. Project mitigation has not been taken into consideration during the screening process. Where potential for LSE applies, these sites will be taken forward for assessment alone and in-combination in HRA Step 4, with a Report to Inform Appropriate Assessment (RIAA) to be subsequently prepared.

The approach to Screening and the resulting conclusions are presented by receptor group. Key findings for each receptor group are summarised below.

Benthic subtidal and intertidal ecology (Annex I habitats and supporting habitats) have been screened on the basis of distance from the Offshore Project Boundary (OPB). The closest SAC with an Annex I habitat feature is the East Caithness Cliffs SAC, located approximately 49 km distant and therefore well beyond the maximum screening distance applied for the receptor group (15 km). Therefore, no benthic subtidal or intertidal ecology Annex I habitats have been screened in and the receptor group will not be considered further in the HRA process (other than as supporting habitats for other groups where relevant).

Marine mammals include the Annex II species bottlenose dolphin (*Tursiops truncatus*), harbour porpoise (*Phocoena phocoena*), grey seal (*Halichoerus grypus*) and harbour or common seal (*Phoca vitulina*). These species have been screened based on a fixed distance from the OPB, to take account of the mobile nature of the species and the Zone of Influence (ZoI) of the Project. For the cetacean species, a range of 200 km has been applied. That range ensured that the Scottish SAC (Moray Firth SAC) is screened in, with the remaining bottlenose dolphin sites in the UK (in Welsh waters) screened out. The range also screened out SACs for harbour porpoise, including the Inner Hebrides and the Minches SAC (located in a separate Management Unit to the Project) and the Southern North Sea SAC (over 500 km to the south). For harbour and grey seals, the screening ranges applied are drawn from recent screening reports and consultation responses that identify an appropriate range for potential site connectivity to be established (50 km for harbour seal and 20 km for grey seal). The result from Screening for marine mammals is a single SAC screened in for potential LSE, the Moray Firth SAC for bottlenose dolphin.

For offshore and intertidal ornithology, screening has been undertaken with respect to the following to account for species ecology:

- Breeding seabirds in the breeding season;
- Breeding seabirds in the non-breeding season;
- Non-breeding seabirds;
- Migratory seabirds; and
- Migratory waterbirds.

The approach to screening for these species is applied in two discrete stages. Stage 1 applied a predefined set of criteria to identify potential connectivity to the Project (but does not necessarily equate to a potential for LSE). Stage 2 applied published guidance and literature, together with an understanding of migratory bird risk, to determine the potential for LSE in each instance. A total of 20 species from 42 SPAs and one Ramsar have been identified as having potential LSEs.

The migratory fish receptor group includes the freshwater pearl mussel (FWPM) (*Margaritifera margaritifera*) as the life cycle of the species is linked to salmonids. The migratory fish included in screening are sea lamprey (*Petromyzon marinus*), river lamprey (*Lampetra fluviatilis*), allis shad (*Alosa alosa*), twaite shad (*Alosa fallax*) and Atlantic salmon (*Salmo salar*). These species have been considered initially for potential connectivity based on a fixed 200 km distance from the OPB, to take account of the mobile nature of the species and the ZoI of the Project. The subsequent determination of potential for LSE takes account of recent advice provided on projects in a similar location and as confirmed for the Project by NatureScot during the scoping workshop. Specifically, that the lack of data on migratory fish at sea means it is not possible to identify potential connectivity between fish at sea and specific SACs. Therefore, the potential for LSE is made with respect to a precautionary maximum range of 50 km from the OPB to the SAC, to exceed the expected ZoI of the Project that may have direct connectivity to a relevant SAC and the feature(s) within. A single site (the River Spey SAC) is just within that range for part of the export cable corridor (ECC), with the expectation that site specific underwater noise modelling will confirm a lack of connectivity and the conclusion of no LSE for all migratory fish (and FWPM) SACs.

The sites and features where potential for LSE has been identified will be taken forward for assessment in the RIAA and the potential for adverse effect on integrity (AEOI) considered with respect to the pressures associated with activities linked to each stage of the project.

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Glossary of Terminology

Term	Definition
Array Area	The area in which the generation infrastructure will be located, including turbines and associated foundations, inter-array/interconnector cables, and offshore substations.
Developer	Stromar Offshore Wind Farm Limited. A consortium comprising Ørsted, Renantis, and BlueFloat Energy.
Effect	Term used to express the consequences of an impact. The significance of an effect is determined by correlating the magnitude of the impact with the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria.
Environmental Impact Assessment	A statutory process whereby planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements on the EIA Directive and EIA Regulations, including the publication of an Environmental Impact Assessment (EIA) Report.
Habitats Regulations Appraisal (HRA)	A process which helps determine likely significant effects and (where appropriate) assesses adverse impacts on the integrity of European conservation sites and Ramsar sites. The process consists of up to four stages of assessment: screening, appropriate assessment, assessment of alternative solutions and assessment of imperative reasons of over-rising public interest (IROPI).
In-combination effects	Used to refer to the effects of the Project on a European Site in-combination with other relevant plans and projects with the potential to contribute to a Likely Significant Effect on or adverse effect on the integrity of that European Site.
Landfall	The location (from Mean Low Water Springs) where the Offshore Export Cables will interface with and are connected to the Onshore Export Cables at a transition joint bay.
Likely Significant Effects	It is a requirement of Environmental Impact Assessment Regulations to determine the Likely Significant Effects of the Proposed Development on the environment which should relate to the level of an effect and the type of effect.
Marine Directorate (MD)	The Directorate responsible for the integrated management of Scottish waters. Acts on behalf of the Scottish Ministers. Formerly Marine Scotland.
Marine Directorate – Licensing Operations Team (MD-LOT)	The division of MD responsible for the regulation of marine licence applications within the Scottish inshore region (between 0 and 12 nm) under the Marine (Scotland) Act 2010 and in the Scottish offshore region (between 12 and 200 nm) under the Marine and Coastal Access Act 2009.
Marine Directorate – Science, Evidence, Data and Digital (MD-SEDD)	The scientific division of Marine Directorate, responsible for provision of expert scientific, economic and technical advice and services on issues relating to fisheries, aquaculture, marine renewable energy. MD-SEDD provides the evidence to support the policies and regulatory activities of the Scottish Government through a programme of monitoring and research as well as performing regulatory and enforcement activities.

Term	Definition
Marine Licence	Licence granted under the Marine (Scotland) Act 2010 and also under the Marine and Coastal Access Act 2009 if relevant.
National Site Network	The UK's network of sites designated under the EU Habitats and Birds Directives. The National Site Network comprises Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) designated (or proposed) on EU Exit day and which formerly formed part of the Natura 2000 network. The term "national site network" is used in each of the Habitats Regulations and the terms refer to the same network of sites (Scottish Government, 2020).
Offshore Export Cable(s)	The subsea electricity cable(s) running from the Offshore Substation(s) to the transition joint bay at the landfall, which transmit the electricity generated by the offshore wind farm to the onshore export cable(s) for transmission onwards to the onshore substation and the national electrical transmission system.
Offshore Export Cable Corridor (ECC)	The specific corridor of seabed (seaward of Mean High Water Springs (MHWS)) from array area to the landfall, within which the offshore export cable(s) will be located.
Offshore Project Boundary	The boundary within which all offshore development will take place.
Offshore Scoping Report	The Scoping Report setting out the proposed contents of the Offshore EIAR and provided to Marine Directorate Licencing Operations Team (MD-LOT) to support the request for a Scoping Opinion.
Offshore Substation	Offshore platforms potentially consisting of a combination of High Voltage Alternating Current (HVAC) substations, High Voltage Direct Current (HVDC) converter stations and/or a combined HVAC/HVDC substation depending on the final electrical set up of the project.
Offshore Scoping Opinion	The Scoping Opinion that will be provided by Marine Directorate Licensing Operations Team (MD-LOT) under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 and the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017, setting out the Scottish Ministers' opinion on the content of the Offshore EIAR including those issues that will or will not need to be addressed in the Offshore EIA.
Offshore Transmission Works	The proposed transmission infrastructure comprising: Offshore Substation(s) and associated foundations and substructures; the offshore export cable(s); and the landfall area up to Mean High Water Springs (MHWS).
Offshore Wind Farm	Infrastructure comprising wind turbines and associated foundations and substructures, Substation Platform(s) and associated foundations, export cables and inter-array / interconnector cables.
Project	Stromar Offshore Wind Farm.
Stromar Offshore Wind Farm	The Project.
Transition Joint Bay	The area where Offshore Export Cables are connected to Onshore Export Cables at landfall.

Term	Definition
Wind Turbine Generator (WTG)	The wind turbines that generate electricity consisting of tubular towers and blades attached to a nacelle housing mechanical and electrical generating equipment.

Glossary of Acronyms

Acronym	Definition
AA	Appropriate Assessment
AEOI	Adverse Effect on Integrity
AON	All Observable Nests
CES	Crown Estate Scotland
CES	Crown Estate Scotland
CfD	Contract for Difference
CIA	Cumulative Impact Assessment
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
GIS	Geographical Information System
HRA	Habitats Regulation Appraisal
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IROPI	Imperative Reason of Overriding Public Interest
JNCC	Joint Nature Conservation Committee
JV	Joint Venture
km	Kilometres
kV	Kilovolt
LSE	Likely Significant Effect
MD-LOT	Marine Directorate – Licensing Operations Team (Formerly MS-LOT)
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MS-LOT	Marine Scotland – Licensing Operations Team (Now MD-LOT)
MDS	Marine Directorate Science
MW	Megawatt

OLA	Option to Lease Agreement
OWF	Offshore Wind Farm
RIAA	Report to Inform Appropriate Assessment
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SMP	Seabird Monitoring Programme
SNCB	Statutory Nature Conservation Bodies
SPA	Special Protection Area
WTG	Wind Turbine Generator

1 Introduction

1.1 Project Description

1.1.1 The Stromar Offshore Wind Farm (the Project) is being developed by a consortium of Ørsted, Falck Renewables and BlueFloat Energy (hereafter named the Joint Venture (JV)). Ørsted are leading delivery of the Project's consenting activities. The Project is being progressed through the ScotWind leasing round and comprises a wind farm array, located off the north-east coast of Scotland in the Plan Option (PO) area NE3 (Crown Estate Scotland Site Number 8), as identified in the Sectoral Marine Plan[1], and associated transmission assets.

1.1.2 The JV partnership brings together Ørsted's unparalleled record in offshore wind, BlueFloat Energy's unique knowledge and experience in developing, financing and executing floating wind projects, and Falck Renewables' pioneering approach and community engagement experience. Collaboration with Energy Skills Partnership Scotland (ESP) will deliver a skilled workforce, whilst investing in the local supply chain, boosting the economy and labour market and facilitating an increase in green skills within the region.

1.1.3 The project site is located approximately 50 km east of Wick, with an array area of approximately 256 km². The Project will comprise of Wind Turbine Generators (WTGs) and all offshore electrical infrastructure required to transmit power generated by the WTGs to the Onshore Substation. Two main transmission technologies being considered: High Voltage Alternative Current (HVAC) and High Voltage Direct Current (HVDC). The Project will determine the appropriate transmission type during the detailed design and procurement stage, post-consent, based on a range of factors including project economics and technology risk.

1.1.4 This Report relates to the offshore aspects of the Project only, covering the area seawards from Mean High Water Springs (MHWS). Onshore aspects are addressed separately in the Onshore Screening Report submitted alongside this document (Ørsted, 2023a).

1.1.5 The main offshore components may include:

- Up to 71 WTGs;
- Floating/fixed WTG foundation substructures;
- Mooring and anchoring systems;
- Inter-array/interlink Cables (including dynamic and static parts);
- Up to three Offshore Substations;
- One Reactive Compensation Station (if HVAC technology is selected);
- One Innovation Platform;
- One Accommodation Platform; and

[1] https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2020/10/sectoral-marine-plan-offshore-wind-energy/documents/sectoral-marine-plan-offshore-wind-energy/sectoral-marine-plan-offshore-wind-energy/govscot%3Adocument/sectoral-marine-plan-offshore-wind-energy.pdf

- Up to three Offshore Export Cable(s).

1.1.6 Additionally, there may be a need for wet storage of the substructures during their assembly and/or prior to their installation within the Array Area, either at the initial assembly site, the WTG integration site, or a separate dedicated storage location. Once the detailed requirements for wet storage are known, a consenting route will be determined in line with any guidance, and this may be a separate Marine Licence/planning permission application if outside of the Offshore Project Boundary (OPB).

1.1.7 Following the JV's successful bid and award of an Option to Lease Agreement (OLA), a seabed lease is being sought under the recent ScotWind leasing round administered by Crown Estate Scotland. Contracts for Difference (CfD) submission is planned for 2027, with construction beginning in 2028 and grid connection expected in 2030.

1.1.8 Further details of the offshore aspects of the Project are provided within the Offshore Scoping Report accompanying this Report submission (Ørsted, 2023b), with onshore addressed within the Onshore Screening (Ørsted, 2023a) and Scoping Reports (Ørsted, 2023c). A summary of the offshore elements of the Design Envelope is provided in **Table 1.1** below:

Table 1.1: Stromar Offshore Infrastructure Overview

Description	Design Parameter
Maximum capacity	Number of WTGs: ≤ 71
Offshore Array Area	Around 50 km east of Wick, with a surface area of 256 km^2. Water depths from approximately 60 m below Chart Datum (CD) to more than 100 km below CD.
WTG parameters	Turbine power rating: ≤ 30 MW Maximum rotor diameter: ≤ 320 m Maximum hub height: ≤ 225 m (HAT) Maximum blade tip height: ≤ 385 m (HAT) Minimum blade tip height: ≥ 30 m (HAT)
Mooring and anchoring	Mooring line radius: 1000 m Types of anchor: suction, pile, gravity, vertical load anchor, drag embedment
Array Cables	Number of cables: 71 Cable length (km): 720 Cable trench width (m): 30 (measured at bottom of trench) Seabed preparation methodology: boulder and debris clearance, seabed levelling Cable installation methodology: trenching, dredging, jetting, ploughing, vertical injection Cable protection methodology: primary – burial; secondary – sandbags, rock placement, concrete mattresses, fronded mattress, rock bags, metal or plastic protective half sleeves
Interlink cables	Number of cables: 5

Description	Design Parameter
Offshore Export Cable Corridor	Comprises up to three 3 km wide corridors up to 126 km long, connecting to a number of Landfall options along the Aberdeenshire coast. Runs from the Offshore Array Area south to Mean High Water Springs (MHWS) at Landfall. The Offshore Export Cable will be installed via trenched or trenchless methods or a combination of both, to be determined following more detailed engineering design. Number of cables: 3 per corridor Corridor length x width (km): 126 x 3 Cable trench width (m): 30 (measured at bottom of trench) Seabed preparation methodology: boulder and debris clearance, seabed levelling Cable installation methodology: trenching, dredging, jetting, ploughing, vertical injection Cable protection methodology: primary – burial; secondary – sandbags, rock placement, concrete mattresses, fronded mattress, rock bags, metal or plastic protective half sleeves
Landfall	Extends along approximately 4 km of the north Aberdeenshire coastline, between Rosehearty and Fraserburgh. This is the area between MHWS and Mean Low Water Springs (MLWS) through which the Offshore Export Cable(s) will be installed. Number of trenches: 3 Number of cable drills: 11 HDD exit offshore pit length x width (m): 50 x 10 Transition joint bay working area length x width (each TBJ) (m): 40 x 40 Cable installation methodology: direct burial or trenchless techniques
Offshore structures (e.g. substations etc.)	A range of fixed and floating foundation options are currently under consideration for structures in the Array. A HVAC Reactive Compensation Station (RCS) may be located along the Offshore ECC if needed, which may be located above the sea surface or on the seabed. Design scenarios for each of these options are presented in the Scoping Report.

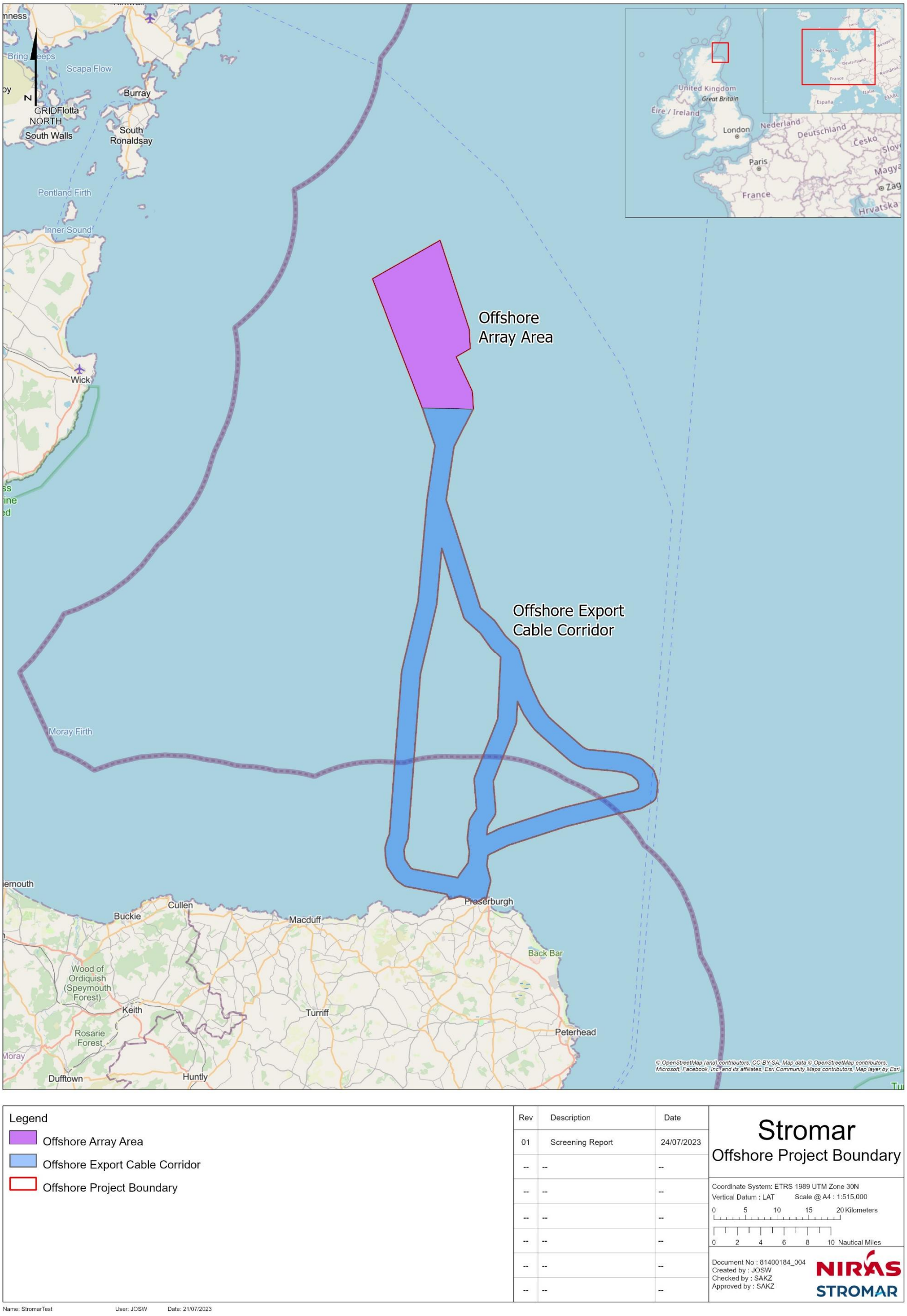

Figure 1.1: Stromar Offshore Project Boundary

1.2 Purpose of this Report

1.2.1 The purpose of this document is to present the approach to and conclusions from Habitats Regulations Appraisal (HRA) Screening for the works proposed within the OPB. Screening for the onshore aspects of the Project is presented in the Onshore Screening Report (Ørsted, 2023a).

1.2.2 Screening is often referred to as HRA Step 3 and is included in **Figure 2.1**. The HRA Screening will support the consenting process as required under:

- Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (which translates the legal obligations in Scotland); and
- Conservation of Offshore Marine Habitats and Species Regulations 2017 (which applies to Scottish waters more than 12 nautical miles (nm) from land).

1.2.3 The above are collectively referred to here as 'The Habitats Regulations'. Post Brexit, it should be noted that 'The Habitats Regulations' have been amended as a result of the UK leaving the EU in the 'The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019'. NatureScot state the following with respect to this: "The Habitats Regulations have been amended in Scotland, most recently in 2019 as a result of the UK leaving the EU. These amendments mean that we must continue to apply the requirements of the Habitats and Birds Directives to how European sites are designated and protected"[2].

1.2.4 The report provides the necessary information required to undertake HRA Screening of the offshore aspects of the Project, to determine the potential for a Likely Significant Effect (LSE) during the construction, operation & maintenance and decommissioning of the Project. The determination is made with respect to European Sites (the UK Site Network) and includes Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Ramsar sites are included as a matter of government policy. The steps that make up the HRA process are described in Section 2.

1.2.5 The Developer requests a formal Screening Opinion from MD-LOT, on behalf of the Scottish Ministers in relation to the Proposed Offshore Development, the scope of the Offshore HRA, and the content of the supporting Offshore RIAA for the Proposed Offshore Development.

[2] https://www.nature.scot/professional-advice/protected-areas-and-species/protected-species/legal-framework/habitats-directive-and-habitats-regulations#:~:text=The%20Habitats%20Regulations%20have%20been,sites%20are%20designated%20and%20protected

2 The HRA Process

2.1 Legislative Context

2.1.1 The key items of legislation relevant to the HRA process in Scotland are summarised in **Table 2.1**.

Table 2.1: Key Legislation for the HRA process in Scotland

Legislation	Relevance
The Habitats Directive (92/43/EEC) on the Conservation of Natural Habitats and of Wild Fauna and Flora (the 'Habitats Directive')	The Habitats Directive requires the establishment of a strict protection regime for certain habitats, commonly referred to as the 'Natura 2000' network of European protected sites. European sites designated under the Habitats Directive are called Special Areas of Conservation (SACs).
Council Directive (2009/147/EC) on the conservation of wild birds (the 'Birds Directive')	The Birds Directive aims to protect all naturally occurring wild bird species and their most important habitats. The designated sites form part of the 'Natura 2000' network of European protected sites. European sites designated under the Birds Directive are called Special Protection Areas (SPAs).
Conservation (Natural Habitats &c.) Regulations 1994 (the 'Habitats Regulations')	UK legislation that covers terrestrial areas and territorial waters out to 12 nm and implements the Habitats and Birds Directives.
Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2017 (the 'Offshore Habitats Regulations').	UK legislation that covers waters beyond 12 nm, up to the extent of the British Fishery Limits and UK Continental Shelf Designated Area and implements the Habitats and Birds Directives.
Conservation on Wetlands of International Importance especially as Waterfowl Habitat 1971 (the 'Ramsar Convention')	Designates wetland sites for protection ('Ramsar sites'). The Scottish Government reiterated its policy on the protection of Ramsar sites in 2019[3], specifically stating that "where Ramsar interests coincide with Natura qualifying interests protected under an SPA or an SAC, as the case may be, the interests are thereby given the same level of (legal) protection as Natura sites" and "where Ramsar interests are not the same as Natura qualifying interests but instead match Sites of Special Scientific Interest (SSSI) features, these receive protection under the SSSI regime".
Post-Brexit Amendments	The Habitats Regulations and the Offshore Habitats Regulations remain in force, with the same protections retained, but UK sites are no longer part of the EU's Natura 2000 network, instead forming a national network of protected sites. Key terminology is primarily unchanged, with the terms 'European site', 'European marine site', 'European offshore marine site', 'Special Area of Conservation (SAC)' and 'Special Protection Area (SPA)' all being retained. In cases where no adverse effect on integrity (AEOI) can be proven, the competent authority (i.e., Scottish Ministers, for projects of this type) would previously have been required to seek the opinion of the European Commission on whether the plan or project should be carried out for imperative reasons of overriding public interest (IROPI). Since exiting the EU, this now falls under the remit of the Scottish Ministers, who must seek the opinion of the Secretary of State, the Joint Nature Conservation Committee (JNCC), and any other person the Scottish Ministers consider appropriate.

[3] https://www.gov.scot/publications/implementation-of-scottish-government-policy-on-protecting-ramsar-sites/

Habitats Directive and Habitats Regulations

2.1.2 The Habitats Directive (92/43/EEC) on the Conservation of Natural Habitats and of Wild Fauna and Flora (the 'Habitats Directive') protects habitats and species of European conservation importance. The Habitats Directive combines with the Council Directive (2009/147/EC) on the conservation of wild birds (the 'Birds Directive'), which protects rare, vulnerable, and migratory bird species, to create the 'Natura 2000' network of European protected sites. European sites designated under the Habitats Directive are called Special Areas of Conservation (SACs), and those designated under the Birds Directive are Special Protection Areas (SPAs).

2.1.3 In Scotland these directives are implemented through the Conservation (Natural Habitats &c.) Regulations 1994 (the 'Habitats Regulations'), which cover terrestrial areas and territorial waters out to 12 nm. Waters beyond 12 nm, up to the extent of the British Fishery Limits and UK Continental Shelf Designated Area, are covered by The Conservation of Offshore Marine Habitats and Species Regulations 2017 (the 'Offshore Habitats Regulations'). These are collectively referred to as 'the Habitats Regulations'.

2.1.4 Additionally, the Conservation on Wetlands of International Importance especially as Waterfowl Habitat 1971 (the 'Ramsar Convention') designates wetland sites for protection ('Ramsar sites'). The Scottish Government reiterated its policy on the protection of Ramsar sites in 2019[4], specifically stating that "where Ramsar interests coincide with Natura qualifying interests protected under an SPA or an SAC, as the case may be, the interests are thereby given the same level of (legal) protection as Natura sites" and "where Ramsar interests are not the same as Natura qualifying interests but instead match Sites of Special Scientific Interest (SSSI) features, these receive protection under the SSSI regime".

Amendments Post EU Exit

2.1.5 Post-Brexit, The Habitats Regulations and the Offshore Habitats Regulations remain in force, with the same protections retained, but UK sites are no longer part of the EU's Natura 2000 network, instead forming a national network of protected sites. Key terminology is primarily unchanged, with the terms 'European site', 'European marine site', 'European offshore marine site', 'Special Area of Conservation' and 'Special Protection Area' all being retained[5].

2.1.6 In cases where no adverse effect on integrity (AEOI) can be proven, the competent authority (i.e., Scottish Ministers, for projects of this type) would previously have been required to seek the opinion of the European Commission on whether the plan or project should be carried out for imperative reasons of overriding public interest (IROPI). Since exiting the EU, this now falls under the remit of the Scottish Ministers, who must seek the opinion of the Secretary of State, the Joint Nature Conservation Committee (JNCC), and any other person the Scottish Ministers consider appropriate.

2.2 The Stepped Process for HRA

2.2.1 **Figure 2.1** below summarises the steps to take when determining if a plan or project could affect a European Site.

[4] https://www.gov.scot/publications/implementation-of-scottish-government-policy-on-protecting-ramsar-sites/
[5] https://www.gov.scot/publications/eu-exit-habitats-regulations-scotland-2/documents/

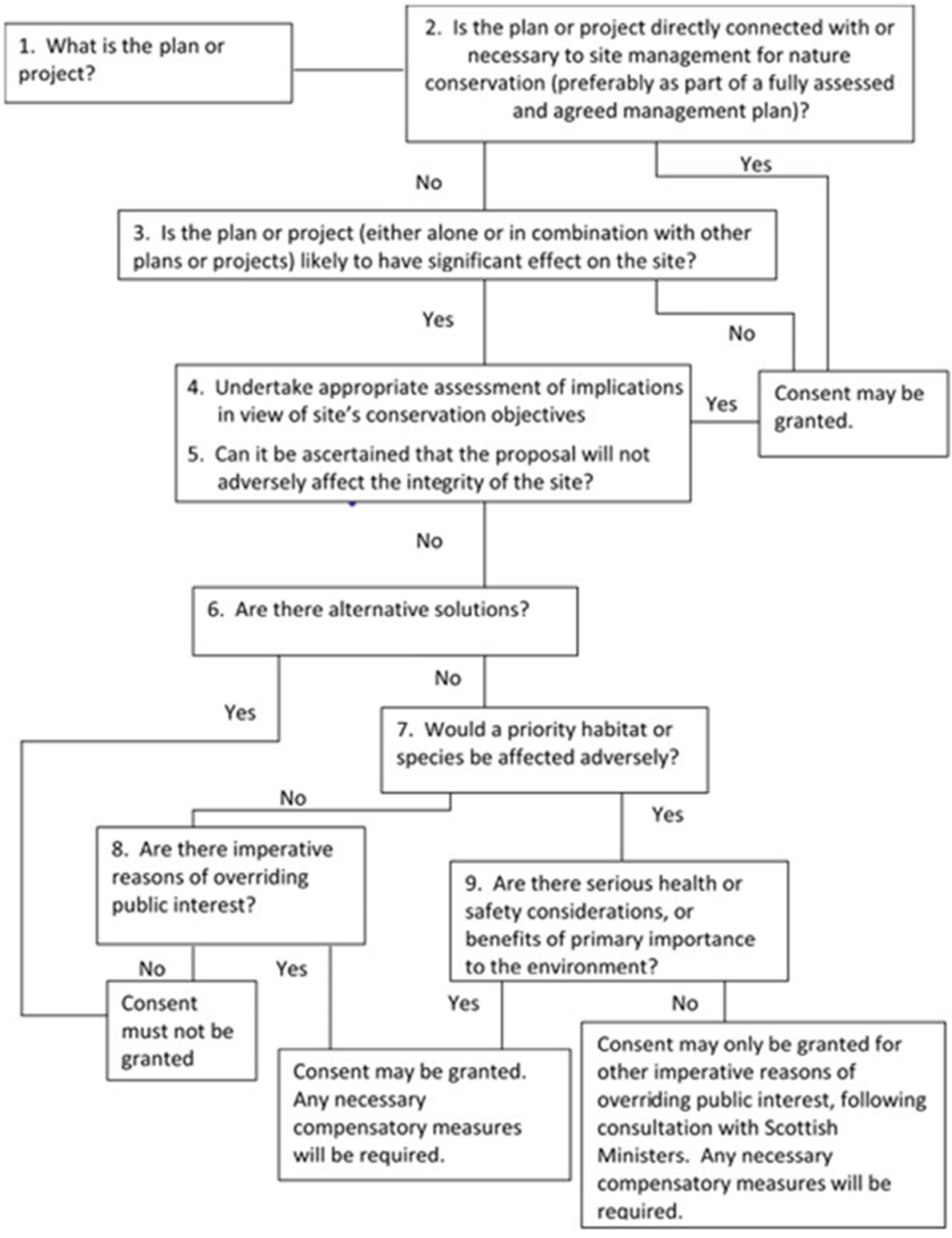

Figure 2.1: How to consider plans and projects which could affect European Sites (from NatureScot)[6]

[6] https://www.nature.scot/professional-advice/planning-and-development/environmental-assessment/habitats-regulations-appraisal-hra

2.2.2 For the Project, Step 1 is addressed in **Section 1 'Project Description'**. With respect to Step 2, as the Project is not directly connected with or necessary to site management for nature conservation, the Project is expected to progress to Step 3. At this point, the HRA process is typically viewed as occurring across a number of Steps, with these summarised in **Table 2.2**.

Table 2.2: Key Steps to HRA

Stage	Summary
Step 3 – Screening	Determination of potential for likely significant effect (LSE) of the proposal on European sites, either alone or in combination with other projects or plans. Mitigation measures cannot be considered at this stage.
Steps 4 and 5 - Appropriate Assessment and determination of adverse effect	A Report to Inform Appropriate Assessment (RIAA) is prepared, to provide the Competent Authority with the necessary information to determine whether the plan or project will have an adverse effect on the integrity (AEOI) of any European Site. Consideration is here given to any planned mitigation measures within the proposal.
Step 6 - Examination of Alternative Solutions	If the AA cannot rule out potential AEOI, then alternative options for the plan or project must be considered.
Step 7 – presence/absence of a priority habitat or species	To determine if the assessment includes a priority habitat or species (if the answer is yes an additional step, Step 9, is required).
Step 8 - Assessment of IROPI (Imperative Reasons of Overriding Public Interest)	Where no alternative solutions are determined to be possible, assessment will be undertaken to determine whether there is an overriding public interest for the proposal to be consented.

2.2.3 The need for and content of each step in **Table 2.2** and **Figure 2.1** will be informed by the previous, with progression post Step 3 informed by each subsequent step. Together, the steps identified above are referred to in Scotland as Habitats Regulations Appraisal (HRA).

2.2.4 This report provides the information required to inform Step 3 Screening for the OPB. Onshore screening is provided in the Onshore Screening Report (Ørsted, 2023a).

2.3 Relevant Guidance

2.3.1 Screening, and subsequent preparation of the RIAA, which includes Step 4 and 5 in **Figure 2.1**, will be undertaken with reference to key HRA guidance documents, including:

- Scottish Government 'Habitats Regulations Appraisal (HRA)'[7];
- NatureScot 'Habitats Regulations Appraisal'[8]; and

[7] https://www.gov.scot/policies/environmental-assessment/habitats-regulations-appraisal-hra/

[8] https://www.nature.scot/professional-advice/planning-and-development/environmental-assessment/habitats-regulations-appraisal-hra

- UK Government including recent guidance 'Guidance on the use of the Habitats Regulations Assessment'[9].

2.3.2 Noting that the above also include links to relevant European guidance.

[9] https://www.gov.uk/guidance/appropriate-assessment

3 Consultation

3.1.1 A Scoping Workshop was held on 16th November 2023, to discuss the Project and to provide an overview of the approach to Scoping and Screening. Workshop slides were supplied to attendees in advance, together with a note outlining the proposed approach to migratory bird screening. Comments specific to HRA Screening are summarised in **Table 3.1**, including the status of the comment.

Table 3.1: Summary of Screening Consultation

Workshop Title	Workshop Date	Stakeholders Present (unless noted)	Key Comments	Status
Pre-Scoping consultation workshop	16th November 2023	MD-LOT NatureScot Scottish Fishermen's Federation RSPB Scotland	Benthic receptors: NatureScot agreed that given the distance between the Project and all SACs with an Annex I feature, all Annex I benthic habitats screened out.	Noted and confirmed in **Section 6.2**.
			Marine mammal receptors: NatureScot agreed that all harbour porpoise SACs screened out, agreed with the screening distances for harbour seal (20 km) and grey seal (50 km) with all seal sites screened out (unless there is connectivity between SAC and the Project), agreed that the Moray Firth SAC should be screened in for bottlenose dolphin.	Noted and confirmed in **Section 6.3**.
			Migratory fish (and FWPM): NatureScot agreed that the advice on migratory fish (addressed offshore in EIA only and not HRA) applies to the Project (**Section 6.5**). Agreed if no connectivity that the closest such site to the Project (the River Spey SAC, which lies just within 50 km of the ECC could also be screened out (**Table 6.18**).	Noted and confirmed in **Section 6.5**.
			Offshore ornithology:	
			The impacts of wet storage should be considered within the EIA.	Noted and consideration provided in **Section 1.1**.
			Artificial light to be screened in.	Noted and confirmed screened in.
			Agreement that construction and decommissioning impacts with respect to displacement can be scoped out for cumulative assessment.	Applied to the HRA process for consistency.

Workshop Title	Workshop Date	Stakeholders Present (unless noted)	Key Comments	Status
			Agreement that barrier effects will be picked up via distributional responses as per NatureScot guidance.	Noted. Distributional responses (displacement and barrier effects) are included in the screening tool as separate pressures (**Table 5.4**) and will assessed in the RIAA according to the screening conclusions (**Table 6.17**).
			NatureScot will provide their position on vessel disturbance for Stromar (regarding how offshore the site is) in writing.	Pending feedback from stakeholders.
			Advice on auk displacement assessment post Beatrice monitoring report remains as now and will not be updated until the Beatrice monitoring report has been peer reviewed.	Pending feedback from stakeholders.
			Agreement with the use of the foraging range tool for screening.	Noted and applied in **Section 5.4**.
			For breeding birds in the non-breeding season agreement with the use of BDMPS and species abundance in DAS.	Noted and applied in **Section 5.4**.
			Approach to migratory bird screening (summarised in a note provided prior to the workshop) resulted in discussion, with NatureScot and MD-LOT to provide written feedback subsequent to the workshop. The Developer to consider and incorporate that feedback in the RIAA.	Screening for migratory birds to follow the approach in **Section 6.4**, pending written feedback.

4 Environmental Baseline

4.1.1 The following summarises the main sources of information that will be drawn on for the HRA process. This includes existing data sources that are in the public domain together with completed, ongoing and planned site-specific surveys. Further information is available in the Offshore Scoping Report (Ørsted, 2023b), submitted alongside this report.

4.2 Benthic Subtidal and Intertidal Ecology

Existing Data Sources

4.2.1 Key existing data sources include those associated with relevant designated sites. That information is available through NatureScot and will be drawn on as required for the subsequent assessment should an Annex I habitat feature(s) be screened in. The GIS files for screening, which contain all relevant site boundaries and detail the associated designated features, have been sourced as described in Appendix A.

4.2.2 The closest SAC with Annex I features to the Project is East Caithness Cliffs SAC, located approximately 49 km at its nearest point from the OPB. The following Annex I habitat is a primary reason for selection of this site:

- Vegetated sea cliffs of the Atlantic and Baltic coasts.

4.2.3 Benthic habitat types in the vicinity of the Project include EUNIS habitats ‘offshore circalittoral sand’ (MD5), ‘offshore circalittoral mud’ (MD6), and ‘offshore circalittoral coarse sediment’ (MD3), as well as small areas of ‘circalittoral sand’ (MC5) and ‘circalittoral coarse sediment’ (MC3).

4.2.4 The Offshore Export Cable Corridor runs directly through the Southern Trench Nature Conservation MPA (NCMPA), which lies to the east of the Array Area. The Southern Trench NCMPA is designated for burrowed muds and shelf deeps, among other features. The presence of burrowed mud is noted in the study area, as well as ocean quahog and kelp beds, also Priority Marine Features (PMFs), although none are within the bounds of any SAC and thus will not be considered in the HRA process.

Site Specific Surveys

4.2.5 No site-specific surveys are needed to inform benthic subtidal and intertidal ecology for the HRA. For further information regarding geophysical and benthic ecology surveys to inform the EIA please refer to the Offshore Scoping Report (Ørsted, 2023b).

4.3 Marine Mammals

Existing Data Sources

4.3.1 Key existing data sources include those associated with relevant designated sites. That information is primarily available through NatureScot, and JNCC where relevant. These will be drawn on as required for the subsequent assessment with respect to Annex II marine mammal features screened in. The GIS files for screening, which contain all relevant site boundaries and the associated designated features, have been sourced as identified in **Appendix A**. A number of SACs for harbour seal and grey seal are located around Scotland, with a single SAC for bottlenose dolphin (Moray Firth SAC,

approximately 60 km west of the OPB) and a single SAC for harbour porpoise (Inner Hebrides and the Minches SAC, located to the west coast of Scotland).

4.3.2 A number of existing data sources are available for marine mammals, with these including (but not limited to) the references summarised in **Table 4.1**.

Table 4.1: Non-Exhaustive Summary of References for Marine Mammal

Dataset	Comment
SCANS III survey data (Hammond *et al* (2021))	SCANS-III is a large-scale ship and aerial survey that studied the distribution and abundance of cetaceans in European Atlantic waters. SCANS IV took place in summer 2022, with data expected to be available later in 2023 and thus will be drawn upon if available in the required timeframe.
The Joint Cetacean Protocol (JCP)	provides data on the distribution, abundance and population trends of cetacean species in the North Sea and adjacent regions.
The reports issued by Special Committee on Seals (SCOS)	Provides scientific advice to government on matters related to the management of seal populations.
Seal telemetry data	Results from a number of studies involving tagging of seals, in particular Carter *et al* 2020 and Carter *et al* 2022.
Marine mammal monitoring within the Moray Firth including that for other offshore wind farms	For example Arso Civil *et al* (2021).

4.3.3 The OPB is located within SCANS-III Block R, and the estimated densities for the relevant species are presented in **Table 4.2** below. Seal distribution data is taken from Carter *et al*., 2022 and relates to the area within the OPB.

Table 4.2: Marine Mammal Densities in the Vicinity of the Offshore Project Boundary

Species	Density				
	Groups/ km^2	Animals/ km^2	Animals/25 km^2		
			Array	ECC	Offshore Project Boundary
Harbour Porpoise (*Phocoena phocoena*)	0.434	0.599	-	-	-
Bottlenose Dolphin (*Tursiops truncatus*)	0.0057	0.0298	-	-	-
Grey Seal (*Halichoerus grypus*)	-	-	9 - 88	0.8 - 29	0.8 - 88
Harbour Seal (*Phoca vitulina*)	-	-	0	0 – 1.5	0 – 1.5

4.3.4 With respect to harbour seals and grey seals, the OPB lies across three different Management Areas, with the Array on the very edge of the North Coast and Orkney Management Area, and the Offshore Cable Corridor primarily falling in the Moray Firth Area and intersecting the East Scotland Area. The Project is in a relatively low use area for both species, but is adjacent to areas of higher use, namely Pentland Firth to the north and Moray Firth to the west (Carter *et al*., 2022). The Dornoch Firth and

Morrich More SAC is located within the Moray Firth area, approximately 175 km from the Project, and is designated for harbour seal.

4.3.5 The ECC landfall and part of the Offshore ECC fall within the Coastal East Scotland (CES) bottlenose dolphin Management Unit (MU), with the remainder of the Offshore Export Cable Corridor and the Array Area within the Greater North Sea (GNS) bottlenose dolphin MU (IAMMWG, 2023). Of these, the CESMU relates to the inshore population of bottlenose dolphin off the east coast of Scotland, with an abundance of 224 (95% confidence interval 214-234). The GNSMU extends across a substantial area, with the abundance of animals within the UK portion being 1,885 (95% confidence intervals of 476-7,461) and overall GNSMU abundance of 2,022 (95% confidence interval 548-7,453).

4.3.6 There are three SACs with bottlenose dolphin as a qualifying feature in the UK; two are in Welsh waters and the third is the Moray Firth SAC, located approximately 60 km to the west of the OPB. The Moray Firth population (with a baseline population of 101-250 individuals) is known to regularly travel down the east coast of Scotland and individuals have been reported in waters off Ireland and the Netherlands (NatureScot, 2021).

4.3.7 The entirety of the OPB lies within the North Sea (NS) harbour porpoise MU (IAMMWG, 2023). The NSMU has an estimated abundance of 346,601 (95% confidence interval 289,498 - 419,967). This MU also extends across a significant area, with the abundance within the UK portion being 159,632 (95% confidence interval of 127,442 –199,954).

4.3.8 There are a number of SACs designated for harbour porpoise in the UK, with the closest and only one in Scottish waters being the Inner Hebrides and the Minches SAC, located approximately 174 km to the west of the OPB (noting that this is a straight line distance and does cross land). There is also one single SAC designated for this species on the east coast of the UK, namely the Southern North Sea SAC, which is over 500 km to the south of the OPB.

Site Specific Surveys

4.3.9 Digital aerial surveys (DAS) were initiated in March 2022, with a planned completion date of April 2024. Results from the first year of surveys found harbour porpoise to be the most abundant marine mammal in the survey area, with a total of 73 sightings recorded throughout the survey period, peaking at 20 in January 2023. They were sighted in seven of the 12 months surveyed throughout the first survey year. Monthly density estimates and spatial distribution patterns for harbour porpoise will be derived from the site-specific DAS and provided within the baseline characterisation report submitted in support of the EIA. One grey seal was also observed, in April 2022, and 11 unidentified seal or small cetacean individuals, peaking in April 2022 with four animals recorded. Other optional offshore surveys may be carried out as relevant.

4.4 Offshore and Intertidal Ornithology

Existing Data Sources

4.4.1 Key existing data sources include those associated with relevant designated sites. That information is primarily available through NatureScot, with links to JNCC and the wider European network where relevant. These will be drawn on as required for the subsequent assessment with respect to ornithological features screened in. The GIS files for screening, which contain all relevant site

boundaries and the associated designated features, have been sourced as identified in Appendix A. Numerous SPA and Ramsar sites are located around the Scottish coastline.

4.4.2 A number of existing data sources are available for offshore and intertidal ornithology, with these summarised in **Table 4.3**.

Table 4.3: Non-Exhaustive Summary of References for Offshore and Intertidal Ornithology

Topic	Source
Seabird Tracking Data	BirdLife International Seabird Tracking Database[10]; Other relevant data sources will also be explored, such as data owned by private entities (i.e., Universities), organisations (such as the RSPB) and published (i.e., via a Boolean search).
Population data	Seabird Monitoring Programme (SMP)[11] database and other relevant sources identified through the assessment planning process (i.e., SPA citation reports).
Designated sites	NatureScot sitelink[12].
Potential impacts of offshore windfarms on ornithological receptors	E.g., Pennycuick (1987); Garthe and Hüppop (2004); Drewitt and Langston (2006); Stienen *et al*. (2007); Speakman *et al*. (2009); Langston (2010); Band (2012); Cook *et al*. (2012); Furness and Wade (2012); Wright *et al*. (2012); Wade *et al*., (2016); Furness *et al*. (2013); Bradbury *et al*. (2014); Johnston *et al*. (2014a; 2014b); Cook *et al*. (2014; 2018); Webb *et al*. (2016); Dierschke *et al*. (2017); Jarrett *et al*. (2018); Leopold and Verdaat (2018); Mendel *et al*. (2019); Bowgen and Cook (2020); Goodale and Milman (2020); WWT and MacArthur Green (2014); Maxwell *et al*. (2022).
Bird distribution, migration and foraging movements	E.g., Stone *et al*. (1995); Brown and Grice (2005); Kober *et al*. (2010); Bradbury *et al*. 2014); HiDef Ltd. (2015); Waggitt *et al*. (2019); Cleasby *et al*. (2020); Davies *et al*. (2021); Wernham *et al*. (2002); Thaxter *et al*. (2012); Wright *et al*. (2012); Wakefield *et al*. (2013; 2017); Furness *et al*. (2018); Woodward *et al*. (2019); Buckingham *et al*. (2022).
Bird breeding ecology, population estimates and demographic rates	E.g., Cramp and Simmons (1977-94); Del Hoyo *et al*. (1992-2011); Robinson (2005); Mitchell *et al*. (2004); BirdLife International (2004); Holling *et al*. (2011); Musgrove *et al*. (2013); Furness (2015); Horswill *et al*. (2017); Frost *et al*. (2019); Musgrove *et al*. (2020); JNCC (2020); BirdLife International seabird tracking database.
Existing OWF Data	A significant amount of information from previous and current development in Scotland and the region relevant to this Project can be found on the Marine Directorate website[13]. This information is listed within the Offshore Scoping Report (Ørsted, 2023b) and drawn upon through the HRA where necessary.
Current (at time of writing) Scoping and Screening Reports (and relevant Scoping Opinions)	Salamander; West of Orkney; Caledonia; Pentland Firth; Berwick Bank – Obtained via the Marine Directorate website.

Site Specific Surveys

[10] http://www.seabirdtracking.org/

[11] https://app.bto.org/seabirds/public/index.jsp

[12] https://sitelink.nature.scot/home

[13] https://marine.gov.scot/mslot-all-application-and-project-documentation

4.4.3 A 24-month digital aerial survey (DAS) campaign was initiated for the Project in 2022, with Year 1 consisting of a total of 12 monthly surveys flown between March 2022 and February 2023. The surveys placed 2 km-spaced transects across the development area plus a 4 km surrounding buffer ('the survey area'). The total survey area was approximately 593 km^2. The primary observations from first 12 months of surveys were:

- Black-legged kittiwakes (*Rissa tridactyla*) (hereafter referred to as 'kittiwake') were present in relatively low densities with the exception of July 2022 (peak density of 5.44 birds/km^2 (95% CI 2.93 – 9.40)). Sitting and flying birds were recorded suggesting use of the area for passage and foraging;
- Great black-backed gulls (*Larus fuscus*) were recorded in relatively low abundance during the non-breeding season, with peak densities estimated at 0.58 birds/km^2 (95% CI 0.29 – 0.86) in January 2023;
- Common guillemots (*Uria aalge*) (hereafter referred to as 'guillemot') were the most abundant species, peaking in August 2022 during post-breeding dispersal (absolute peak density 49.29 birds/km^2 (95% CI 41.22 – 58.32);
- Razorbills (*Alca torda*) were recorded in relatively low abundance during the breeding season, with an absolute peak density of 6.64 birds/km^2 (95% CI 4.39 – 9.02);
- Atlantic puffins (*Fratercula arctica*) (hereafter referred to as 'puffin') were the third most abundant species observed, peaking in August and September 2022, during the end of the breeding season and start of the postbreeding migration period (peak absolute density 6.72 birds/km^2 (95% CI 4.52 – 9.28) in August 2021);
- Northern fulmars (*Fulmarus glacialis*) (hereafter referred to as 'fulmar') were the second most abundant species, peaking in July 2022 (5.40 birds/km^2 (95% CI 2.99 – 9.28)) during the breeding season. A second peak was observed in January 2023 coinciding with the return migration period;
- Northern gannets (*Morus bassanus*) (hereafter referred to as 'gannet') were recorded in relatively low numbers with density peaking in July 2022 (0.70 birds/km^2 (95% CI 0.23 – 1.50)), coinciding with the usual breeding season. A total of 7 dead gannets were recorded; and
- The density of birds varied, with birds distributed across the whole survey area, especially between July and September 2022.

4.4.4 In addition to the DAS, and in the context of the Plan level mitigation included in the Sectoral Marine Plan for Offshore Wind Energy[14], the Project is participating in a number of studies to increase the knowledge base around key ornithological issues, including the following:

- Tagging of breeding seabirds at several colonies along the east coast of Scotland;
- Colony counts of breeding seabirds at several colonies along the east coast of Scotland;
- Collection of geolocation data to better apportion impacts outside the breeding season; and

[14] https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2020/10/sectoral-marine-plan-offshore-wind-energy/documents/sectoral-marine-plan-offshore-wind-energy/sectoral-marine-plan-offshore-wind-energy/govscot%3Adocument/sectoral-marine-plan-offshore-wind-energy.pdf

- Improving data being fed into collision risk modelling e.g., collaborating with the University of Liverpool on their Availability Bias workstream. This seeks to provide more scientifically accurate and up to date correction factors applied to Digital Aerial Survey Data.

4.5 Migratory Fish and Freshwater Pearl Mussel

Existing Data Sources

4.5.1 Annex I migratory fish include a number of species that occur in UK waters, with designated sites focused on the estuarine and riverine habitats. Freshwater pearl mussel (FWPM) (*Margaritifera margaritifera*) is a mollusc that occurs in rivers and streams but is included here in the offshore HRA Screening process due to the potential for an indirect connectivity. The FWPM spends its larval stage attached to the gills of salmonid fish; therefore, a potential LSE for Atlantic salmon (*Salmo salar*) could result in an indirect potential LSE for FWPM and the species is screened following the same principles as migratory fish.

4.5.2 Key existing data sources include those associated with relevant designated sites. Information is primarily available through NatureScot, and JNCC where relevant. These will be drawn on as required for the subsequent assessment with respect to Annex II migratory fish and FWPM features screened in to the assessment. The GIS files for screening, which contain all relevant site boundaries and the associated designated features, have been sourced as identified in Appendix A. The majority of SACs with migratory fish and/or FWPM as designated features are for Atlantic salmon, with several SACs along the east coast where Atlantic salmon are a designated feature, some of these also have FWPM as a feature. The River Spey SAC represents the northly range of sea lamprey (*Petromyzon marinus*) and River Teith SAC the east coast range. The River Teith SAC also holds a population of river lamprey (*Lampetra fluviatilis*). The distribution of SACs for allis and twaite shad (*Alosa alosa* and *Alosa fallax*) are more to the south of England and in Wales. Data for the SAC populations is highly focused on the SAC itself.

4.5.3 A number of existing data sources are available for migratory fish and FWPM, including for migratory fish outside SAC boundaries, with these including but not limited to the references summarised in **Table 4.4**.

Table 4.4: Non-Exhaustive Summary of References for Migratory Fish and FWPM

Dataset	Comment
Gilbey *et al*, 2021	Provides information on the post-smolt distribution of salmon in the north-east Atlantic.
Relevant monitoring reports from offshore wind farm projects in the region, particularly Beatrice[15]	Provides monitoring of Atlantic salmon smolt movements in the Cromarty and Moray Firths.
The Moray Firth salmon tracking project[16]	Tracking study to understand what happens to Moray Firth salmon. Inclusion of data will depend on the level of information publicly available. – for example, it is expected that the preliminary results will form the basis of management recommendations in 2023.

[15] https://marine.gov.scot/sites/default/files/00534044.pdf

[16] https://atlanticsalmontrust.org/our-work/morayfirthtrackingproject/

Dataset	Comment
Dee Salmon Fishery Board salmonid tracking project[17]	Salmon tracking study that started in 2016. Public domain data would be required.
Scottish Wild Salmon Strategy[18]	Government strategy for salmon.

Site Specific Surveys

4.5.4 A round of surveys is planned for Q2 2024, which may be informative for Annex II species. For example, water eDNA samples will be collected from stations in the array and along each ECC route, to better understand fish communities in the area. These samples will be analysed against two assays, 'fish' and 'vertebrates', to increase the likelihood of a greater number of fish species being identified in water samples.

[17] https://www.deepartnership.org/project/smolt-tracking/

[18] https://www.gov.scot/publications/scottish-wild-salmon-strategy/

5 Screening Methodology

5.1 Introduction

5.1.1 A precautionary approach has been adopted in screening to ensure that all potential for LSE is identified. The implication of this approach is that protected sites and features are screened in unless a clear conclusion of no LSE can be made. In some circumstances, effects can be considered de minimis[19].

5.1.2 The aim of screening is to identify which protected sites and features to take forward into the RIAA. The methodology is set out here for a structured and systematic approach to screening. Potential connectivity is first established through the use of a screening parameter, which is specific to the receptor/ feature and linked to the relevant pressure, followed by consideration of the potential for LSE to result.

5.1.3 For assessment purposes, the terms 'pathway', 'pressure', 'impact' and 'effect' are used regularly and are key to how the spatial criteria applied in screening have been defined. An effect is the result of an impact(s) to receptors, which can occur when a pressure acts via (impact) pathways. Impacts may be quantified (or a view taken on magnitude) whereas an effect is simply the consequence of an impact. Possible pressures arising from the Project during all project phases have been analysed and potential impact pathways identified. For each pathway-pressure combination, a spatial criteria is defined to establish potential connectivity. Due to the varying ecology of different receptor groups, different spatial criteria are applied to different receptors. These spatial parameters relate to the range (spatial extent) of impacts and the ranging behaviour of mobile species.

5.1.4 As each receptor group will be sensitive to different pressures, the list of pressures will vary between receptor group. The approach to screening applies a series of Screening Tools in GIS, developed by NIRAS. These include the 'Foraging Ranges' screening tool developed by NIRAS for NatureScot and a series of wider tools developed for HRA Screening. These have been applied recently at project level and plan level.

5.2 Benthic Subtidal and Intertidal Ecology

5.2.1 Annex I habitat features are static in the sense that they occur wholly within the spatial extent of the protected site and so both the direct footprint of the Project and the potential range of each pressure is relevant to screening. The specific pressures relevant to screening for this receptor group are detailed in **Table 5.1**. Where a pressure can act through a pathway beyond the footprint of the Project, a 15 km Zone of Influence (ZoI) for benthic habitats is applied. This distance reflects the standard applied at Plan level[20], and is within the typical range for project level (e.g. 10 km was applied for Pentland and West of Orkney), as well as exceeding the 6 km range being applied at Scoping. The distance will be confirmed following project specific modelling of physical processes.

[19] A de minimis change is one that has no appreciable effect on the protected site; in other words so negligible, restricted or remote from the protected site that the effect would not undermine the conservation objectives for the site either alone or in combination (David Tyldesley and Associates, 2015).

[20] For example https://www.marinedataexchange.co.uk/details/3582/2022-the-crown-estate-2020-offshore-wind-round-4-plan-habitats-regulations-assessment/packages/10649?directory=%2F

5.2.2 Project aspect abbreviations are as follows:

- ECC – Export Cable Corridor
- Array – Offshore Array Area
- OPB – Offshore Project Boundary

5.2.3 Project Phase abbreviations are as follows:

- C – Construction
- O&M – Operation and maintenance
- D – Decommissioning

Table 5.1: Potential Pressures and Screening Parameters for Benthic Subtidal and Intertidal Ecology

Potential Pressures	Project Aspect	Project Phase	Pressure Detail	Screening Parameter	Justification
Habitat loss/gain	ECC & Array	O&M	This relates to the loss of marine seabed habitats due to installation of structures, and where relevant the associated introduction of new habitat. This is a permanent impact which occurs during the construction phase but assessed during the O&M phase. Impact is restricted to the footprint of physical structures, i.e. direct overlap.	OPB	Impact restricted to footprint of physical structures (OPB)
Direct Physical Impact (to habitat)	ECC & Array	C, O&M, D	This relates to the physical impact caused by, for example, pre-sweeping, abrasion from mooring lines, cable burial, survey equipment deployment (e.g., cores, trawls), or anchors. Impact is restricted to the footprint of the Project.	OPB	Impact restricted to activities which interact with the seabed, within the OPB
Indirect Physical Impact (to habitat)	ECC & Array	C, O&M, D	This relates to changes in hydrological energy flows, waves, tidal currents, sediment transport, erosion/deposition etc. arising from the physical presence of structures in the marine environment or temporary seabed preparation works. This is relevant to the construction, operation and decommissioning phases.	15 km from OPB	Footprint of the Project (OPB) plus 15 km buffer (to account for Zone of Influence)
Suspended Sediments	ECC & Array	C, O&M, D	Increased turbidity from disturbance of seabed sediments.	15 km from OPB	Footprint of the Project (OPB) plus 15 km buffer (to account for Zone of Influence)
Invasive Non-Native Species (INNS)	ECC & Array	C, O&M, D	INNS can smother/replace existing habitats.	15 km from OPB	Footprint of the Project (OPB) plus 15 km buffer (to account for Zone of Influence)
Toxic Contamination	ECC & Array	C, O&M, D	This relates to reduced water or sediment quality from, for example, spillages or mobilisation of contaminated sediments.	15 km from OPB	Footprint of the Project (OPB) plus 15 km buffer (to account for Zone of Influence)

5.2.4 The OPB has been applied in a GIS screening tool, together with the above screening parameters, to determine which designated site(s) with Annex I benthic habitat feature(s) are located within the relevant ranges. A site/feature within that range would be screened in for the relevant pressure(s), project phase(s) and project aspect(s) unless it is clear that no potential for connectivity exists (for example the feature is located above high water and the pressure is subtidal) or it can be concluded that the potential for effect would be de minimis, with no appreciable effect on the site.

5.3 Marine Mammals

5.3.1 Annex II marine mammal species are highly mobile so the direct footprint of the Project, the potential ZoI for each pressure and the ranging behaviour of each species (and their prey) are relevant to screening. The specific pressures relevant for this receptor group are detailed in **Table 5.2**. It is noted that recent screening reports for offshore wind, including those for floating wind projects in Scottish waters, have applied varying screening parameters for marine mammals to take account of both the potential ZoI of different pressures and the highly mobile nature of these species. This has resulted in distances applied varying between 15 and 200 km, as well as the use of Management Units (e.g. Moray West (2017), Highland Wind Ltd. (2022), Xodus (2022b)). For the Project, 200 km is applied as a conservative value for both bottlenose dolphin and harbour porpoise, to exceed the expected ZoI of all Project level pressures and to reflect ranging behaviour.

5.3.2 Whilst the distance of 200 km has been defined as appropriate for cetacean species, NatureScot define site connectivity distances for seals as 50 km for harbour seal and 20 km for grey seal, as specified in Scoping Responses such as that for the MarramWind Project[21], and therefore these respective distances have been used for screening for pinniped species.

5.3.3 Project aspect abbreviations are as follows:

- ECC – Export Cable Corridor
- Array – Offshore Array Area
- OPB – Offshore Project Boundary

5.3.4 Project Phase abbreviations are as follows:

- C – Construction
- O&M – Operation and maintenance
- D – Decommissioning

[21] https://marine.gov.scot/sites/default/files/appendix_i_-_consultation_responses_advice_0.pdf

Table 5.2: Potential Pressures and Screening Parameters for Marine Mammals

Potential Pressures	Project Aspect	Project Phase	Pressure Detail	Screening Parameter	Justification
Underwater Noise	ECC & Array	C, O&M, D	Underwater noise may lead to death, injury or disturbance and be direct or indirect (e.g., through impacts upon prey) impacts to marine mammals.	Cetacean species: 200 km Grey seal: 20 km Harbour seal: 50 km	Footprint of the Project (OPB) plus 200 km buffer (to account for wide ranging species outside the designated site boundary)
Collision	Array	O&M	The risk of collision with marine mammals is in the context of WTG structures only. Entanglement considered separately.	Cetacean species: 200 km Grey seal: 20 km Harbour seal: 50 km	Footprint of the Project (OPB) plus 200 km buffer (to account for wide ranging species outside the designated site boundary)
Entanglement	Array	O&M	This relates to primary entanglement with mooring lines and cables and secondary entanglement with derelict fishing gear associated with WTG infrastructure.	Cetacean species: 200 km Grey seal: 20 km Harbour seal: 50 km	Footprint of the Project (OPB) plus 200 km buffer (to account for wide ranging species outside the designated site boundary)
Direct habitat loss/gain	ECC & Array	O&M	This relates to the loss of marine habitat due to installation of structures, and where relevant the associated introduction of new habitat (i.e. pressure relates to the supporting habitat and not to the species). This is a permanent impact which occurs during the construction phase but will be assessed during operation and maintenance phase. Loss of potentially supporting habitat outside a designated site boundary is deemed inconsequential in the context of wider habitat availability, with direct overlap with SACs considered only.	OPB	Impact restricted to activities which interact with the seabed, within the OPB

Potential Pressures	Project Aspect	Project Phase	Pressure Detail	Screening Parameter	Justification
Direct Physical Impact (to habitat)	ECC & Array	C, O&M, D	This relates to the physical impact caused by, for example, pre-sweeping, abrasion from mooring lines, cable burial, survey equipment deployment (e.g., cores, trawls), or anchors (i.e., pressure relates to the supporting habitat and not to the species). Loss of potentially supporting habitat outside a designated site boundary is deemed inconsequential in the context of wider habitat availability, with direct overlap with SACs considered only.	OPB	Impact restricted to activities which interact with the seabed, within the OPB
Indirect Physical Impact (to habitat)	ECC & Array	C, O&M, D	This relates to changes in hydrological energy flows, waves, tidal currents, sediment transport, erosion/deposition etc. arising from the physical presence of structures in the marine environment or temporary seabed preparation works (i.e., pressure relates to the supporting habitat and not to the species). Indirect impact to potentially supporting habitat outside a designated site boundary is deemed inconsequential in the context of wider habitat availability, with indirect impact to SACs considered only.	15 km from OPB	Footprint of the Project (OPB) plus 15 km buffer (to account for Zone of Influence)
Physical Presence	Array (physical presence of structures) ECC & Array (physical presence of vessels)	O&M (physical presence of structures) C and D (physical presence of vessels)	This relates to the potential for the physical presence of offshore wind farm structures such as WTG floating foundations to cause disturbance to individuals or a barrier to the movement of mobile species or result in an 'artificial reef' effect with respect to marine mammal prey. This is relevant to the operational phase only. It is recognised that some structures will be present during construction, but effects will be assessed when all structures are present and over the full life of the Project. Potential for disturbance from vessels could occur, especially should any vessels transit through a SAC The pressure is considered to apply in construction and decommissioning only, as O&M vessel movements will be trivial in the context of existing shipping movements and therefore screened out.	Cetacean species: 200 km Grey seal: 20 km Harbour seal: 50 km	Footprint of the Project (OPB) plus 200 km buffer (to account for wide ranging species outside the designated site boundary)
EMF	ECC & Array	O&M	EMF to be considered as a pressure in relation to indirect impacts via effects on marine mammal prey species, but not directly for marine mammals.	OPB	Impact restricted to immediate vicinity of the cables, within the OPB

Potential Pressures	Project Aspect	Project Phase	Pressure Detail	Screening Parameter	Justification
Toxic Contamination	ECC & Array	C, O&M, D	This relates to reduced water or sediment quality from, for example, spillages or mobilisation of contaminated sediments.	15 km from OPB	Footprint of the Project (OPB) plus 15 km buffer (to account for Zone of Influence with respect to the species habitat)

5.3.5 The OPB has been applied in a GIS screening tool, together with the above screening parameters, to determine which designated site(s) with Annex II marine mammal feature(s) are located within the relevant ranges; a site/feature within that range would be screened in for potential LSE for the associated pressure(s), project phase(s) and project aspect(s) unless it is clear that no potential for connectivity exists or it can be concluded that the potential for effect would be de minimis, with no appreciable effect on the site[22].

5.4 Offshore and Intertidal Ornithology

Overview

5.4.1 Bird species are highly mobile so both the potential ZoI for each pressure and the ranging behaviour of the species (and their prey) are relevant to screening. The specific pressures relevant for this receptor group are detailed in **Table 5.4**. In addition, the potential for a bird species to interact with the ZoI of the Project varies during the year, with birds grouped into a series of categories for the purposes of this screening exercise. This categorisation is based on biological relationships related to phenology, feeding, habitat use and migratory pathways. The categories are:

- Breeding seabirds in the breeding season (e.g., black-legged kittiwake at the East Caithness Cliffs SPA);
- Breeding seabirds in the non-breeding season (e.g., black-legged kittiwake at the East Caithness Cliffs SPA outside of the breeding season);
- Non-breeding seabirds (e.g., wintering guillemot and herring gull);
- Migratory seabirds (little gull, tern species, petrel species, shearwater species, skua species); and
- Migratory waterbirds.

5.4.2 To take account of the ranging behaviour of species, spatial criteria are applied as defined under **paragraph 5.4.8**. That spatial criteria for breeding birds incorporates the foraging ranges as defined in **Table 5.3.**

Table 5.3: Foraging Ranges Applied for Breeding Seabirds (from Woodward et al., 2019)

Species	Foraging Range Applied (Mean Maximum + 1 SD) (km)
Common guillemot *Uria aalge*	153.7 (73.2 + 80.5)
Common eider *Somateria mollissima*	21.5*
Red-throated diver *Gavia stellata*	9*
European shag *Phalacrocorax aristotelis*	23.7 (13.2 + 10.5)
Cormorant *Phalacrocorax carbo*	33.9 (25.6 + 8.3)
Black-headed gull *Chroicocephalus ridibundus*	18.5*
Mediterranean gull *Ichthyaetus melanocephalus*	20*

[22] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:62011CC0258&from=GA

Species	Foraging Range Applied (Mean Maximum + 1 SD) (km)
Common gull *Larus canus*	50*
Little tern *Sternula albifrons*	5*
Roseate tern *Sterna dougallii*	23.2 (12.6 + 10.6)
Common tern *Sterna hirundo*	26.9 (18.0 + 8.9)
Arctic tern *Sterna paradisaea*	40.5 (25.7 + 14.8)
Arctic skua *Stercorarius parasiticus*	2.7 (2 + 0.7)**
Black guillemot	9.1 (4.8 + 4.3)
Northern fulmar *Fulmarus glacialis*	1200.2 (542.3 + 657.9)
Northern gannet *Morus bassanus*	509.4 (315.2 + 194.2)
Great black-backed gull *Larus marinus*	73.0*
Great skua *Stercorarius skua*	931.2 (443.3 + 487.9)
Herring gull *Larus argentatus*	85.6 (58.8 + 26.8)
Black-legged kittiwake *Rissa tridactyla*	300.6 (156.1 + 144.5)
Leach's storm petrel *Oceanodroma leucorhoa*	657.0*
Lesser black-backed gull *Larus fuscus*	236.0 (127.0 + 109.0)
Manx shearwater *Puffinus puffinus*	2365.5 (1346.8 + 1018.7)
Atlantic puffin *Fratercula arctica*	265.4 (137.1 + 128.3)
Razorbill *Alca torda*	164.6 (88.7 + 75.9)
Sandwich tern *Thalasseus sandvicensis*	57.5 (34.3 + 23.2)
European storm petrel *Hydrobates pelagicus*	336.0*

*No standard deviation available for mean maximum value

**No mean maximum value available, mean + SD used instead

5.4.3 Screening for birds therefore incorporates more stages than for the other receptor groups and has been undertaken in two discrete stages. Stage 1 Screening for ornithology will use a predefined set of screening criteria (and draws on screening tools built for NatureScot) to identify SPAs and Ramsar sites with relevant ornithological features which have potential connectivity to the Project. Potential connectivity does not necessarily equate to a potential LSE, with that determined in Stage 2 Screening. Once potential connectivity has been determined with relevant SPAs and Ramsar sites and associated relevant features, those sites and features will subsequently be progressed to the determination of potential LSE.

Stage 1: Identification of Potential Connectivity

5.4.4 The potential for connectivity looks at the ZoI of the Project combined with spatial criteria for birds, to determine where 'overlap' between these could occur. The first part of the process is to establish the relevant pressures associated with the Project (**Table 5.4**), including the relevant project aspect (i.e. array and/or ECC) and project phase (e.g. construction and/or operation & maintenance). The screening parameter applied to each pressure relates to the ZoI and it is the potential for a species to interact with that ZoI that is established in this stage. This section therefore provides a list of potential pressures and effects on marine ornithological features that may result from activities associated with the Project. These are the pressures that must be taken into account when determining the potential for LSE on European sites and qualifying features[23].

5.4.5 The list of potential pressures has been compiled using the experience and knowledge gained from previous OWF projects in Scottish waters, the pressures data available on Scotland's environment web for individual features of sites, NatureScot's 'Guidance for plan-making bodies in Scotland' (NatureScot, 2015), JNCC's pressures-activities database (Robson *et al*., 2018), Natural England's 'Advice on Operations'[24] and Marine Directorate's (formerly Marine Scotland) Sectoral Marine Plan (Marine Scotland, 2019). The list of potential pressures has also been informed by the Scoping Report. Consideration of the potential pressures identified for marine ornithological features is presented in the following sections to inform the determination of LSE.

5.4.6 The pressures associated with the development of an offshore wind farm are identified in **Table 5.4** below. Stage 1 of the proposed screening approach identifies potential connectivity between the pressures associated with the Project and features of SPAs[25]. To do this the spatial extents of both the pressures and distribution of birds need to be defined. The table below identifies the spatial extents associated with each pressure, with spatial criteria for bird species following below. Project aspect abbreviations are as follows:

- ECC – Export Cable Corridor
- Array – Offshore Array Area
- OPB – Offshore Project Boundary

5.4.7 Project Phase abbreviations are as follows:

- C – Construction
- O&M – Operation and maintenance
- D – Decommissioning

[23] The pressures have been developed as part of the Screening Tool developed by NIRAS for NatureScot and the wider development of Screening Tools developed by NIRAS during the support to Plan level HRA in England and Wales.

[24] https://naturalengland.blog.gov.uk/2022/04/13/offshore-wind-best-practice-advice-to-facilitate-sustainable-development/

[25] References to SPAs throughout the report also include consideration of Ramsar sites.

Table 5.4: Potential Pressures and Screening Parameters for Offshore and Intertidal Ornithology

Potential Pressure	Project Aspect	Project Phase	Pressure Detail	Screening Parameter	Justification
Habitat loss/gain	ECC & Array	O&M	Habitat loss/gain associated with the presence of wind turbines and other ancillary structures on the seabed. This is a permanent impact which occurs during the construction phase but is assessed during the O&M phase and is restricted to the footprint of physical structures.	OPB	Footprint of the Project only
Direct temporary habitat loss/ disturbance	ECC & Array	C, O&M, D	The impact of construction/decommissioning activities and activities associated with the maintenance of operational wind turbines such as increased vessel activity and underwater sound may result in direct disturbance of birds from important feeding and roosting areas. Impact could occur within the OPB and an associated buffer and between the OPB and relevant points along the coastline (based on worst assumptions for vessels associated with the Project) and could occur throughout the lifetime of Project.	OPB	Footprint of the Project plus a 2 km buffer
Indirect temporary habitat loss/ disturbance	ECC & Array	C, O&M, D	The impact of construction activities such as increased vessel activity and underwater/above water noise may result in disturbance or displacement of prey from important bird feeding areas. In addition, changes in hydrological energy, wave exposure, suspension of sediments etc. arising from the physical presence of structures in the marine environment or the activities associated with installing such structures in the marine environment may also displace prey. Impact could occur within the OPB and an associated 15 km buffer and between the OPB and relevant points along the coastline based on worst case assumptions for vessels associated with the Project. Impact could occur throughout the lifetime of the Project.	15 km	OPB plus 15 km buffer associated with tidal extent
Collision	Array	O&M	This pressure relates to the mortality arising from birds colliding with WTG structures. This only occurs within the Array once operational.	OPB	Footprint of the Project only
Distributional response (displacement)	Array	O&M	The impact of physical displacement from an area due to the physical presence of wind turbines and other ancillary structures during the operational phase of the development may result in effective habitat loss and reduction in species survival rates and fitness. Impact could occur within the OPB and an associated buffer during the operational phase of the Project.	Species-specific	Footprint of the Project (OPB) and species-specific buffers based on JNCC *et al*. (2022)

Potential Pressure	Project Aspect	Project Phase	Pressure Detail	Screening Parameter	Justification
Distributional response (barrier effects)	Array	O&M	The impact of barrier effects caused by the physical presence of wind turbines and ancillary structures may prevent clear transit of birds between foraging and breeding sites and whilst on migration. Additional energetic costs incurred may reduce fitness and survival rate of a species.	Species-specific	Footprint of the Project (OPB) and species-specific buffers based on JNCC *et al*. (2022)
Toxic Contamination	ECC & Array	C, O&M, D	The impact of pollution including accidental spills and contaminant releases associated with maintenance or supply/service vessels which may lead to direct mortality of birds or a reduction in prey availability.	15 km	Footprint of the Project plus 15 km buffer associated with tidal extent
Attraction to light	ECC & Array	C, O&M, D	The impact of attraction to lit structures by migrating birds in particular may cause disorientation, reduction in fitness and possible mortality.	15 km	Footprint of the Project plus 15 km buffer
Entanglement	Array	C, O&M, D	This relates to primary entanglement with mooring lines associated with WTG infrastructure and secondary entanglement for example in ghost fishing gear.	OPB	Footprint of the Project only

5.4.8 As noted above, Stage 1 enables the identification of potential connectivity. In addition to defining the relevant pressures (and their associated parameter footprint), as provided in **Table 5.4**, the relevant spatial criteria for species are required. These follow the bird categories defined under **paragraph 5.4.1** and are provided in **Table 5.5**.

Table 5.5: Spatial Criteria per Bird Category

Bird Category	Spatial Criteria Applied
Breeding seabirds in the breeding season	The 'Foraging Ranges' screening tool is applied for relevant breeding seabirds. This was developed by NIRAS for NatureScot and applies the recommended screening parameters (i.e., Woodward *et al.*, 2019, mean maximum foraging range plus 1SD as set out in **Table 5.3** and recommended by NatureScot (2023), and including colony specific ranges where applicable). The Foraging Ranges screening tool enables users to define or upload a shapefile of the proposed development areas. The tool then identifies where the development area overlaps with a foraging range(s) and provides a list of sites and features for which the determination of potential for LSE has been undertaken.
Breeding birds in non-breeding seasons	Breeding birds from SPAs and Ramsar sites in the non-breeding season are not constrained to specific areas due to the necessity to provision young, and typically disperse to exploit areas far beyond their breeding colonies. During non-breeding seasons, therefore, the birds present within the Project area may originate from sites that are further away than those considered in the breeding season. Furness (2015) considered how non-breeding birds dispersed, defining the regions within which those populations would be distributed and for each region a Biologically Defined Minimum Population Size ("BDMPS") was calculated. Screening has applied those BDMPS regions and populations. Where the Project overlaps with a BDMPS region, potential connectivity is assumed with the population associated with that region (as defined by Furness, 2015) and the SPAs that contribute to that population.
Non-breeding seabirds	SPA or Ramsar boundary only (see **Table 5.6** and paragraph 5.4.10 in relation to wintering guillemot and herring gull).
Migrating seabirds (little gull, tern species, petrel species, shearwater species, skua species) and migratory waterbirds	Migratory waterbirds and seabirds that breed in sites designated as SPA/ Ramsar site in areas of the UK that are distant from the offshore Project have some potential to interact with the offshore Project during bi-annual migratory movements. Information has been gleaned from relevant data sources to infer potential connectivity, namely; Wright *et al.*, 2012, WWT and MacArthur Green (2014) and seabird tracking data (i.e., Buckingham *et al.*, 2022).

5.4.9 The spatial criteria identified in **Table 5.5** have been informed by NatureScot guidance (NatureScot 2023a; 2023b). For certain features occurring in the non-breeding season, either as breeding seabirds in the non-breeding season or as discrete features that form SPAs designated specifically for non-breeding features, there are parts of the NatureScot (2023a) guidance that deviate from the approaches described above. These are identified in **Table 5.6**, and which all apply current NatureScot advice, alongside how these have been considered in this screening report.

Table 5.6: Screening approach for bird categories

Screening category	Section in NatureScot (2023a)	Approach in this report
Wintering gull features of marine SPAs	5	The approach in NatureScot (2023a) has been followed with breeding foraging ranges (mean-maximum plus 1 SD) applied to all relevant SPAs.
Breeding seabird features of marine SPAs	6	The Screening Tool developed by NIRAS for NatureScot has been applied for breeding seabirds in the breeding season, which applies the same foraging ranges to marine SPAs (in line with NatureScot 2023b).
Breeding seabirds in the non-breeding season - guillemot	7	Breeding season foraging ranges (mean-max plus one standard deviation) (Woodward *et al.*, 2019) have been used to identify connectivity (in line with NatureScot 2023b). This will identify connectivity with the same SPAs as identified using the foraging ranges for breeding birds in the breeding season. If an LSE is identified for an SPA in the breeding season then consideration will be given to impacts throughout the annual cycle in the RIAA.

5.4.10 In addition to the use of breeding season foraging range in the non-breeding season for guillemot, NatureScot and Marine Directorate have recently advised, as part of Scoping Opinions for other OWF projects, that this approach should also be applied for herring gull (NatureScot, 2021; Marine Scotland Science, 2021).

5.4.11 For migratory waterbird and seabird features, the process identifies potential connectivity with the species and at this stage does not identify specific SPAs. Should potential for LSE be determined as a result of that connectivity, then it will be necessary to identify the relevant SPAs. This approach is considered to encompass the approach advised by NatureScot (2023a) (Section 4 in NatureScot 2023a), whilst also incorporating consideration of the potential connectivity between SPAs specific to migratory waterbird features. The process of determining potential LSE for migratory waterbird and seabird features is set out in **Section 6.4**.

5.4.12 GIS has been used to determine physical overlap between the spatial criteria associated with each pressure and those associated with each bird category.

5.4.13 The Ornithology Screening Stage 1 above has resulted in a long list of sites and features where potential for connectivity exists, all of which are provided in **Table 6.2**. The potential for LSE has then been determined through Ornithology Screening Stage 2 (as outlined in paragraph 5.4.14 below).

Stage 2: Determination of Potential for LSE

5.4.14 Based on the criterion outlined above under Stage 1, the SPAs and Ramsar sites for which potential connectivity with the OPB cannot be ruled out have been taken forward for determination of potential LSE in Ornithology Screening Stage 2. The process has been informed by published guidance and literature on species sensitivities (i.e., Wade *et al.*, 2016, Bradbury *et al.*, 2014 and Maxwell *et al.*, 2022), behaviour (i.e., Woodward *et al.*, 2019 colony specific data, Wakefield *et al.*, 2017) and distribution (i.e., site specific survey data, Waggitt *et al.*, 2019). It is noted that Marine Directorate have commissioned a project assessing migratory collision risk at a strategic level which is yet to be published. This will be used to inform the assessments required if it is published in time to inform the

RIAA. If not, further information including in relation to the likely risk to migratory waterbirds and seabirds will be used.

5.4.15 It is important to note that the process has taken account of feedback from the Scottish Minister's Scoping Opinions of various Scottish Projects and stakeholder engagement as defined in **Section 3**.

5.4.16 How Stage 2 has been applied is detailed in **Section 6.4**, with conclusions from both Stage 1 and Stage 2 presented in tabular format in Appendix B, to be clear on the designated sites and features screened in together with the associated pressures identified through the application of the screening tool and determination of potential LSE.

5.5 Migratory Fish and Freshwater Pearl Mussel

5.5.1 Annex II migratory fish are highly mobile, so both the potential ZoI for each pressure and the ranging behaviour of the species (and their prey) are relevant to determining the potential for connectivity. FWPM are a wholly freshwater species, with potential for an indirect link through salmon. The specific pressures relevant for this receptor group are detailed in **Table 5.7**. It is noted that recent screening reports for offshore wind, including those for floating wind projects in Scottish waters, have applied varying screening parameters for migratory fish. A maximum buffer zone of 200 km is applied here to determine potential for connectivity, which exceeds the distances used for the majority of recent screening submissions, including Ossian, Berwick Bank and Green Volt, and is therefore seen to be highly precautionary.

5.5.2 Project aspect abbreviations are as follows:

- ECC – Export Cable Corridor
- Array – Offshore Array Area
- OPB – Offshore Project Boundary

5.5.3 Project Phase abbreviations are as follows:

- C – Construction
- O&M – Operation and maintenance
- D – Decommissioning

Table 5.7: Potential Pressures and Screening Parameters for Migratory Fish and Freshwater Pearl Mussel

Potential Pressures	Project Aspect	Project Phase	Pressure Detail	Screening Parameter	Justification
Underwater Noise	ECC & Array	C, O&M, D	Underwater noise may lead to death, injury or disturbance and be direct or indirect (e.g., through impacts upon prey) impacts to migratory fish.	200 km	Footprint of the Project (OPB) plus 200 km buffer (to account for wide ranging species outside the designated site boundary)
Entanglement	Array	O&M	This relates to primary entanglement with mooring lines and cables and secondary entanglement with derelict fishing gear associated with WTG infrastructure.	200 km	Footprint of the Project (OPB) plus 200 km buffer (to account for wide ranging species outside the designated site boundary)
Habitat loss/gain	ECC & Array	O&M	This relates to the loss of marine habitat due to installation of structures, and where relevant the associated introduction of new habitat. This is a permanent impact which occurs during the construction phase but will be assessed during operation and maintenance phase. Loss of potentially supporting habitat outside a designated site boundary is deemed inconsequential in the context of wider habitat availability, with direct overlap with SACs considered only. Habitat loss/ gain outside a site boundary is addressed through the pressure 'physical presence'.	OPB	Impact restricted to footprint of physical structures (OPB)
Direct Physical Impact (to habitat)	ECC & Array	C, O&M, D	This relates to the physical impact to marine habitat caused by, for example, pre-sweeping, abrasion from mooring lines, cable burial, survey equipment deployment (e.g., cores, trawls), or anchors. Loss of potentially supporting habitat outside a designated site boundary is deemed inconsequential in the context of the primarily benthic nature of the habitat loss and wider habitat availability, with direct overlap with SACs considered only.	OPB	Impact restricted to activities which interact with the seabed, within the OPB

Potential Pressures	Project Aspect	Project Phase	Pressure Detail	Screening Parameter	Justification
Indirect Physical Impact (to habitat)	ECC & Array	C, O&M, D	This relates to changes in hydrological energy flows, waves, tidal currents, sediment transport, erosion/deposition etc. arising from the physical presence of structures in the marine environment or temporary seabed preparation works. Indirect impact to potentially supporting habitat outside a designated site boundary is deemed inconsequential in the context of the primarily benthic nature of the habitat loss and wider habitat availability, with indirect impact to SACs considered only.	15 km from OPB	Footprint of the Project (OPB) plus 15 km buffer (to account for Zone of Influence)
Physical Presence	Array	O&M	This relates to the potential for the physical presence of offshore wind farm structures such as WTGs and foundations to cause disturbance to individuals, a barrier to the movement of mobile species or result in an 'artificial reef' effect (noting potential for predator or prey aggregation).	200 km	Footprint of the Project (OPB) plus 200 km buffer (to account for wide ranging species outside the designated site boundary)
EMF	ECC & Array	O	There is evidence that some species of fish are sensitive to magnetic fields (Gill *et al.*, 2005) and although there is considerable uncertainty about the importance of this sensitivity in the context of EMF associated with submarine power cabling, this potential impact will be considered. This pressure does not apply to shad for which there is no evidence of magnetic sensitivity.	200 km from OPB	200 km from OPB
Toxic Contamination	ECC & Array	C, O&M, D	This relates to reduced water or sediment quality from, for example, spillages or mobilisation of contaminated sediments.	200 km	Footprint of the Project (OPB) plus 200 km buffer (to account for wide ranging species outside the designated site boundary)
Suspended Sediments	ECC & Array	C, O&M, D	Increased turbidity from disturbance of seabed sediments.	200 km	Footprint of the Project (OPB) plus 200 km buffer (to account for wide ranging species outside the designated site boundary)

5.5.4 The OPB has been applied in a GIS screening tool, together with the above screening parameters, to determine which designated site(s) with Annex II migratory fish and FWPM feature(s) are located within the relevant ranges; a site/feature within that range would be screened in for potential LSE for the associated pressure(s), project phase(s) and project aspect(s) unless it is clear that no potential for connectivity exists or it can be concluded that the potential for effect would be de minimis, with no appreciable effect on the site[26].

[26] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:62011CC0258&from=GA

6 Screening Conclusions

6.1 Introduction

6.1.1 The application of the approach to screening presented in **Section 5** provides a clear list of protected sites, features, and pressures where potential for connectivity exists. For offshore ornithology in **Section 5.4**, the two-stage approach to screening enables the multiple species to be fully considered and takes account of factors such as phenology, feeding, habitat use, and migratory pathways. The results from offshore ornithology Stage 1 Screening are presented in Appendix B, with the results from offshore ornithology Stage 2 Screening presented below in **Section 6.4**.

6.2 Benthic Subtidal and Intertidal Ecology

6.2.1 No protected sites and features with potential for connectivity have been identified for benthic subtidal and intertidal ecology, with the closest such site (the East Caithness Cliffs SAC) located some 49 km from the OPB. The conclusion of no potential for LSE confirms no Annex I benthic subtidal or intertidal sites or features will progress forward for assessment.

6.3 Marine Mammals

6.3.1 The protected sites and features where potential for connectivity has been identified for marine mammals are summarised in **Table 6.1**, including the relevant pressures, project phase and project aspect. The conclusion on the potential for LSE confirms those sites and features that will be progressed forward for assessment (noting that the distances provided are measured in a straight line and do not account for onshore terrain).

Table 6.1: Sites and Features where potential for LSE exists for Marine Mammals

Protected Site	Distance from Project	Feature	Project Aspect	Project Phase	Pressure	Determination of LSE
Moray Firth SAC	Array: 92 km ECC: 60 km	Bottlenose dolphin	Array	C, O&M, D	Underwater noise (direct and indirect e.g., through impacts upon prey)	Potential for LSE
				O&M	Collision (with WTG structures) Entanglement Physical presence (of structures) EMF (noting that the pressure applies within the OPB only but for alignment with Scoping screened in for indirect effects on marine mammal prey)	Potential for LSE

Protected Site	Distance from Project	Feature	Project Aspect	Project Phase	Pressure	Determination of LSE
			ECC	C, O&M, D	Underwater noise	Potential for LSE
			ECC & Array	C and D	Physical presence (of vessels)	Potential for LSE
Inner Hebrides and the Minches SAC	Array: 185 km ECC: 174 km	Harbour porpoise	Array	C, O&M, D	Underwater noise	The screening tool measures a distance in a straight line between the Project and the SAC. In this instance, that line travels across land. A route 'by sea' would be in excess of 200 km. In addition, the SAC is located in a different management unit to the Project. On that basis, it can be concluded that there is no potential for connectivity between the SAC and the Project and therefore no LSE. Agreement on the conclusion of screening for harbour porpoise (all sites screened out) was reached in the Scoping Workshop (**Table 3.1**).
				O&M	Collision Entanglement	
			ECC	C, O&M, D	Underwater noise	

6.3.2 Screening for harbour seal and grey seal based on the agreed screening distances resulted in no SACs screened in for these species. An additional check has been made (as requested in the Scoping Workshop, **Table 3.1**) to confirm the potential for connectivity between an SAC and the Project from telemetry data. Referencing Graham et al (2017), no connectivity between seals tagged within an SAC and the Project boundary is apparent and therefore no harbour seal or grey seal SACs have been screened in.

6.3.3 The location of the site where potential for LSE has been identified in **Table 6.1** relative to the location of the Project is shown in **Figure 6.1**

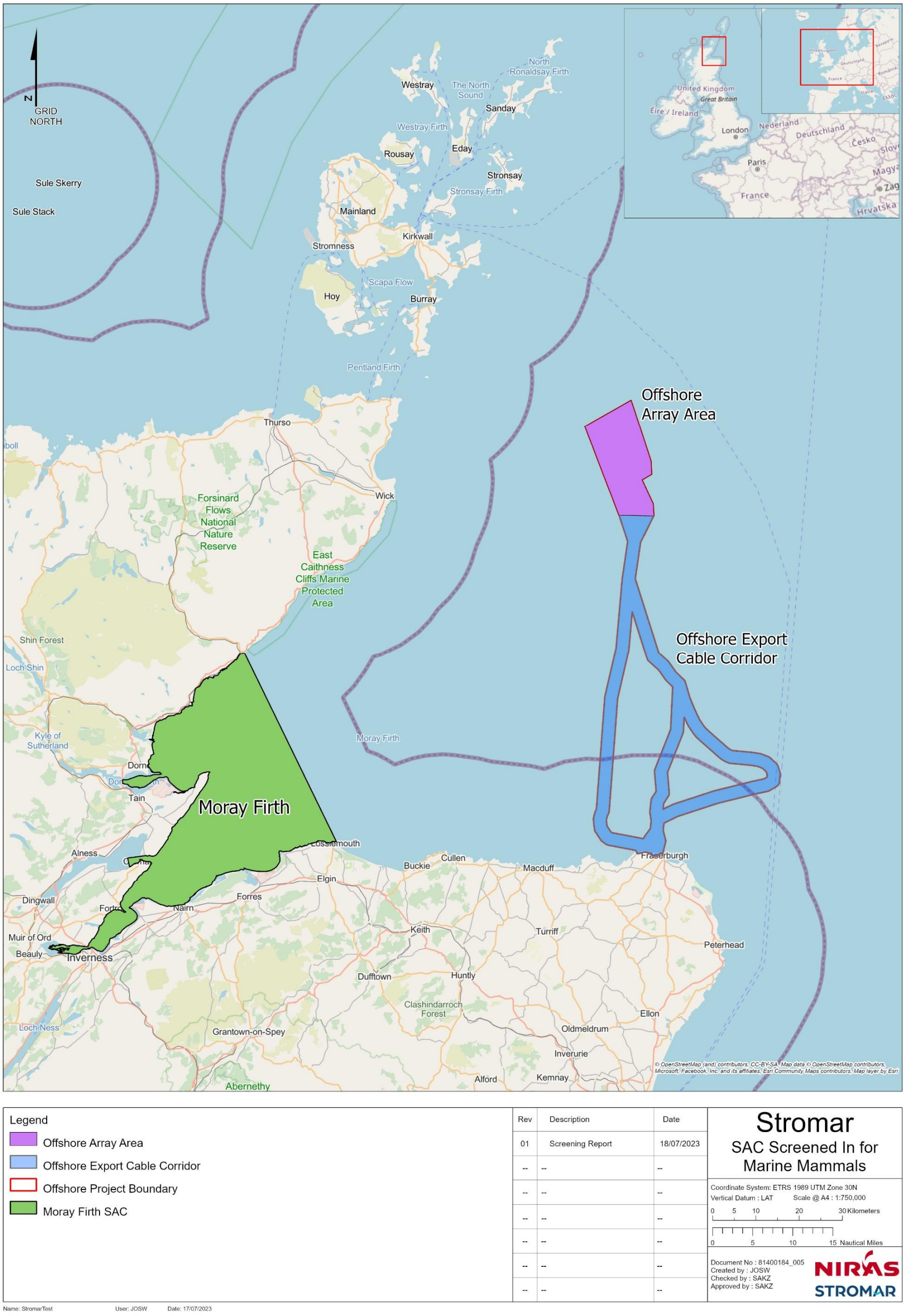

Figure 6.1: SACs Screened In for Marine Mammals

6.4 Offshore and Intertidal Ornithology

Stage 1: Identification of Potential Connectivity

6.4.1 Stage 1 has identified 53 SPAs and 162 associated features, and one Ramsar and seven associated features that have potential connectivity with the OPB. A full list of protected sites and features is provided in **Table 6.2,** with additional information relevant to the screening processes included in **Appendix B**.

Table 6.2: European sites and relevant qualifying features with potential connectivity to be taken forward for determination of LSE for marine ornithological features

European Site	Qualifying Feature(s)	Project Aspect	Project Phase(s)
Ailsa Craig SPA	• Gannet	Array and ECC	C, O&M, D
Auskerry SPA	• European storm petrel *Hydrobates pelagicus* (hereafter referred to as 'storm petrel')	Array and ECC	C, O&M, D
	• Arctic tern *Sterna paradisaea*	Array	C, O&M, D
Buchan Ness to Collieston Coast SPA	• Fulmar • Kittiwake • Guillemot	Array and ECC	C, O&M, D
	• European herring gull *Larus argentatus* (hereafter referred to as 'herring gull) • Shag	ECC	C, O&M, D
Calf of Eday SPA	• Fulmar • Kittiwake • Guillemot	Array and ECC	C, O&M, D
	• Great black-backed gull	Array	C, O&M, D
Canna and Sanday SPA	• Kittiwake	Array and ECC	C, O&M, D
Cape Wrath SPA	• Fulmar • Kittiwake • Puffin	Array and ECC	C, O&M, D
Copeland Islands SPA	• Manx shearwater *Puffinus puffinus*	Array and ECC	C, O&M, D
Copinsay SPA	• Fulmar • Great black-backed gull • Kittiwake • Guillemot	Array and ECC	C, O&M, D
Coquet Island SPA	• Fulmar	Array and ECC	C, O&M, D
	• Kittiwake • Puffin	ECC	C, O&M, D

European Site	Qualifying Feature(s)	Project Aspect	Project Phase(s)
East Caithness Cliffs SPA	• Fulmar • Herring gull • Great black-backed gull • Kittiwake • Guillemot • Razorbill	Array and ECC	C, O&M, D
	• Great cormorant *Phalacrocorax carbo* (hereafter referred to as 'cormorant')	Array	C, O&M, D
Fair Isle SPA	• Fulmar • Gannet • Great skua *Stercorarius skua* • Kittiwake • Guillemot • Razorbill • Puffin	Array and ECC	C, O&M, D
Farne Islands SPA	• Kittiwake	Array and ECC	C, O&M, D
	• Puffin	ECC	C, O&M, D
Fetlar SPA	• Fulmar • Great skua	Array and ECC	C, O&M, D
Flamborough & Filey Coast SPA	• Gannet	Array and ECC	C, O&M, D
Flannan Isles SPA	• Fulmar • Leach's storm petrel *Oceanodroma leucorhoa* (hereafter referred to as 'Leach's petrel') • Kittiwake	Array and ECC	C, O&M, D
Forth Islands SPA	• Gannet • Kittiwake • Puffin • Lesser black-backed gull *Larus fuscus*	Array and ECC	C, O&M, D
Foula SPA	• Fulmar • Leach's petrel • Great skua • Kittiwake • Puffin	Array and ECC	C, O&M, D
	• Razorbill • Guillemot	Array	C, O&M, D
Fowlsheugh SPA	• Fulmar • Kittiwake	Array and ECC	C, O&M, D

European Site	Qualifying Feature(s)	Project Aspect	Project Phase(s)
	• Guillemot • Razorbill • Herring gull	ECC	C, O&M, D
Glannau Aberdaron ac Ynys Enlli/ Aberdaron Coast and Bardsey Island SPA	• Manx shearwater	Array and ECC	C, O&M, D
Handa SPA	• Fulmar • Great skua • Kittiwake	Array and ECC	C, O&M, D
Hermaness, Saxa Vord and Valla Field SPA	• Fulmar • Gannet • Great skua • Kittiwake • Puffin	Array and ECC	C, O&M, D
Hoy SPA	• Fulmar • Great skua • Kittiwake • Guillemot • Puffin • Great black-backed gull	Array and ECC	C, O&M, D
Irish Sea Front SPA	• Manx shearwater	Array and ECC	C, O&M, D
Isles of Scilly SPA	• Fulmar • Manx shearwater	Array and ECC	C, O&M, D
Loch of Strathbeg SPA and Ramsar	• Sandwich tern *Sterna sandvicensis* • Whooper swan *Cygnus cygnus* • Pink-footed goose *Anser brachyrhynchus* • Greylag goose *Anser anser* • Barnacle goose *Branta leucopsis* • Smew *Mergellus albellus* • Ruff *Calidris pugnax* • Common greenshank *Tringa nebularia* (hereafter referred to as 'greenshank') • Eurasian teal *Anas crecca* (hereafter referred to as 'teal') • Common goldeneye *Bucephala clangula* (hereafter referred to as 'goldeneye')	ECC	C, O&M, D
Marwick Head SPA	• Kittiwake • Guillemot	Array and ECC	C, O&M, D
Mingulay and Berneray SPA	• Fulmar	Array and ECC	C, O&M, D

European Site	Qualifying Feature(s)	Project Aspect	Project Phase(s)
Moray Firth SPA	• European shag *Phalacrocorax aristotelis* (hereafter referred to as 'shag')	ECC	C, O&M, D
Mousa SPA	• Storm petrel	Array and ECC	C, O&M, D
Northumberland Marine SPA	• Fulmar • Kittiwake	Array and ECC	C, O&M, D
	• Lesser black-backed gull • Puffin	ECC	C, O&M, D
North Caithness Cliffs SPA	• Fulmar • Kittiwake • Guillemot • Razorbill • Puffin	Array and ECC	C, O&M, D
North Rona and Sula Sgeir SPA	• Fulmar • Storm petrel • Leach's petrel • Gannet • Kittiwake • Puffin	Array and ECC	C, O&M, D
Noss SPA	• Fulmar • Gannet • Great skua • Kittiwake • Puffin	Array and ECC	C, O&M, D
Outer Firth of Forth and St Andrews Bay Complex SPA	• Manx shearwater • Gannet • Kittiwake • Puffin	Array and ECC	C, O&M, D
Pentland Firth Islands SPA	• Arctic tern	Array and ECC	C, O&M, D
Ramna Stacks and Gruney SPA	• Leach's petrel	Array and ECC	C, O&M, D
Rathlin Island SPA	• Fulmar	Array and ECC	C, O&M, D
Ronas Hill - North Roe and Tingon SPA	• Great skua	Array and ECC	C, O&M, D
Rousay SPA	• Fulmar • Kittiwake • Guillemot	Array and ECC	C, O&M, D
Rum SPA	• Manx shearwater • Kittiwake	Array and ECC	C, O&M, D

European Site	Qualifying Feature(s)	Project Aspect	Project Phase(s)
Seas off Foula SPA	• Fulmar • Great skua • Puffin	Array and ECC	C, O&M, D
Seas off St Kilda SPA	• Fulmar • Storm petrel • Gannet	Array and ECC	C, O&M, D
Skomer, Skokholm and the Seas off Pembrokeshire SPA	• Manx shearwater	Array and ECC	C, O&M, D
St Abb's Head to Fast Castle SPA	• Kittiwake	Array and ECC	C, O&M, D
St Kilda SPA	• Fulmar • Manx shearwater • Leach's petrel • Gannet • Great skua	Array and ECC	C, O&M, D
Sule Skerry and Sule Stack SPA	• Storm petrel • Leach's petrel • Gannet • Puffin	Array and ECC	C, O&M, D
Sumburgh Head SPA	• Fulmar • Kittiwake • Guillemot	Array and ECC	C, O&M, D
The Shiant Isles SPA	• Fulmar • Kittiwake • Puffin	Array and ECC	C, O&M, D
Tips of Corsemaul and Tom Mor SPA	• Common gull *Larus canus*	ECC	C, O&M, D
Treshnish Isles SPA	• Storm petrel	Array	C, O&M, D
Troup, Pennan and Lion`s Heads SPA	• Fulmar • Herring gull • Kittiwake • Guillemot • Razorbill	Array and ECC	C, O&M, D
West Westray SPA	• Fulmar • Kittiwake • Guillemot • Razorbill	Array and ECC	C, O&M, D
Ythan Estuary, Sands of Forvie and Meikle Loch SPA	• Sandwich tern • Common tern *Sterna hirundo*	ECC	C, O&M, D

Pathways for LSE: potential impacts on marine ornithological features

6.4.2 This section provides a list of potential pressures on marine ornithological features that may result from the Project. These draw on the pressures presented in **Table 5.4**, which are the pressures that must be taken into account when determining potential for LSE on the European sites and qualifying features identified in Stage 1 (**Table 6.2**).

6.4.3 The list of potential pressures has been compiled using the experience and knowledge gained from previous OWF projects in Scottish waters, the pressures data available on Scotland's environment web for individual features of sites, NatureScot's 'Guidance for plan-making bodies in Scotland' (NatureScot, 2015), JNCC's pressures-activities database (Robson *et al*., 2018), Natural England's 'Advice on Operations'[27] and Marine Directorate's Sectoral Marine Plan (Marine Scotland, 2019). The list of potential pressures has also been informed by chapter 8.4: Offshore Ornithology of the Scoping Report. Consideration of the potential impacts identified for marine ornithological features is presented in the following sections to inform the determination of potential for LSE.

6.4.4 The potential pressures set out in **Table 5.4** have all been taken forward to Stage 2 of the HRA screening process, with the exception of habitat loss/gain, toxic contamination and entanglement. The justification for ruling these potential pressures out for Stage 2 of the HRA Screening is set out below in **Table 6.3**.

[27] https://naturalengland.blog.gov.uk/2022/04/13/offshore-wind-best-practice-advice-to-facilitate-sustainable-development/

Table 6.3: Pathways for LSE: potential impacts on marine ornithological features that have been ruled out

Pressure	Project Aspect	Project Phase			Basis for Screening Decision	Potential for LSE?
		C	O&M	D		
Habitat loss/gain	ECC & Array	-	✓	-	Area affected by permanent habitat loss/gain due to the presence of Project components on the seabed is considered to be negligible when compared to the foraging areas across which bird species that may interact with the Project may utilise.	No potential for LSE
Toxic Contamination	ECC & Array	✓	✓	✓	Pollution events are considered unlikely. Should an event occur, effects will be temporary, reversible and limited in spatial extent. The Project will also follow best practice guidance implemented by OSPAR, MARPOL and IMO. As part of recent Scoping Opinions for projects in Scottish waters, the Scottish Ministers have agreed that this impact should be screened out (see for example Marine Scotland, 2022). In addition, a ruling by the Court of Justice on 15th June 2023 (Eco Advocacy, Case C-721/21) further supports this approach, and determined that features of a project (particularly with regard to contaminants with the potential to have harmful effects on a European site), which have been incorporated into a plan or project as standard features, can be taken into account at screening stage.	No potential for LSE
Entanglement	Array	✓	✓	✓	There is a potential risk that diving seabirds could become entangled in mooring lines associated with turbine infrastructure (primary entanglement) or in marine debris that itself becomes entangled in mooring lines (secondary entanglement). Primary entanglement is considered unlikely due to mooring lines consisting of thick components meaning small animals, such as birds, cannot physically become entangled (Benjamins *et al*., 2014). Natural Resources Wales have also previously stated that interactions between seabirds and the cables and mooring lines associated with floating offshore wind farms are of negligible importance (Aquaterra and MarineSpace, 2022). There is a greater risk of secondary entanglement (i.e., birds getting caught in marine debris, such as discarded fishing gear, which has become tangled in the offshore wind infrastructure). However, this is also considered to be negligible.	No potential for LSE

Stage 2: Determination of LSE for marine ornithological features

6.4.5 **Table 6.15** presents the consideration of potential LSE in relation to the Array for relevant qualifying interest features of the SPAs identified for potential connectivity in **Table 6.2**, and **Table 6.16** presents the consideration of potential LSE with regards the ECC. A number of factors are taken into account in **Table 6.15** and **Table 6.16** when determining the potential for LSE. These include:

- The vulnerability of each species to pressures associated with the Array and ECC;
- The limitations of the Screening Tool as applied in the breeding season, including the application of foraging ranges to SPAs designated to protect foraging areas and the application of foraging ranges over land;
- The abundance of species at the Array and ECC as recorded during baseline aerial surveys[28]; and
- Site specific foraging range data.

6.4.6 Further detail on each of these factors is provided in the justification text (a-g) under **paragraph 6.4.35** inter alia to support the screening in or out of the potential for LSE on the identified SPA qualifying features. These determinations are made in the absence of mitigation measures[29].

6.4.7 In addition, consideration of factors specific to breeding birds in the non-breeding season and migratory waterbirds is provided in the following sections.

Breeding seabirds in the non-breeding season

6.4.8 Potential connectivity between the project and nine breeding seabirds in the non-breeding season has been identified in Stage 1 (refer to Appendix B): gannet, great black-backed gull, great skua, herring gull, kittiwake, lesser black-backed gull, Manx shearwater, puffin and razorbill.

6.4.9 Potential connectivity has been identified for breeding seabirds in the non-breeding season using the areas associated with the Biologically Defined Minimum Population Scales (BDMPS) for each species. To determine potential for LSE, two factors are considered in this section:

- The abundance of each species as recorded during baseline aerial surveys; and
- The contribution of each SPA to the total BDMPS population.

6.4.10 As part of this screening exercise, where potential for LSE is identified for a breeding seabird in the breeding season, pressures will be considered throughout the annual cycle regardless of the conclusions reached in this section.

6.4.11 Population estimates from the baseline digital aerial survey campaign are currently available from March 2022 to February 2023, therefore, incorporating at least one full non-breeding season for all

[28] It is acknowledged that at the time of writing, the first year of DAS only is available. These conclusions will therefore be reviewed prior to drafting the RIAA and once all DAS data are available, with any changes to be clearly identified within the report.

[29] The Court of Justice of the European Union (CJEU) judgement, referred to as People Over Wind (Peter Sweetman v Coillte Teoranta, Case C-323/17) determined that competent authorities cannot take account of any “measures that are intended to avoid or reduce the harmful effects of the envisaged project on the site concerned”, when considering at the HRA screening step whether the plan or project is likely to have an adverse effect on a European Site. The effect of this is that the screening step must be undertaken on a precautionary basis, with no regard to any proposed integrated or additional avoidance or reduction measures.

species based on the seasons in NatureScot (2020). As only one year of baseline data is currently available, this aspect of the screening exercise will be revisited in the RIAA once the full two-year baseline dataset is available, in order to determine if any further designated sites and associated features require consideration in the RIAA. The abundance of each species during the months forming the non-breeding season relevant to that species is presented in **Table 6.4**.

Table 6.4: Occurrence and abundance of seabirds at the Array during the site-specific non-breeding seasons

Species	Monthly Occurrence	Abundance
Gannet	Present during 11 out of 12 months of survey.	Recorded in lower numbers during the non-breeding months, with a peak count of 28 birds in January 2023.
Great black-backed gull	Present during eight out of 12 months of survey.	Mainly recorded during the winter months, with a peak count of 43 birds in January 2023.
Great skua	Present during two out of 12 months of survey.	Maximum count of two birds (May 2022 and July 2022). Absent during the non-breeding season.
Herring gull	Present during 5 out of 12 months of survey.	Mainly recorded during the winter months, with a peak count of 35 birds in January 2023.
Kittiwake	Recorded in all months.	Highest counts were during the summer months (peak count of 398 birds recorded in July 2022). However, counts of 48 were recorded in March 2022 and 47 in April 2022.
Lesser black-backed gull	Recorded on a single occasion.	A single bird was recorded in April 2022. Absent during the non-breeding season.
Manx shearwater	Present during two out of 12 months of survey.	Two birds were recorded in May 2022 and 11 birds in July 2022. Absent during the non-breeding season.
Puffin	Present during seven out of 12 months of survey.	Present during the summer months (May 2022-September 2022) with a peak count of 429 birds in August 2022. Lower numbers were recorded in March 2022 (five birds) and October 2022 (15 birds). Puffins were absent between November 2022 and February 2023.
Razorbill	Present during 11 out of 12 months of survey.	Present in low numbers (five or fewer birds) during March 2022 and October 2022-February 2023.

6.4.12 On the basis of low abundance within the baseline aerial survey area during the non-breeding season, no LSE is concluded for great skua, lesser black-backed gull and Manx shearwater with respect to any SPAs for which connectivity was identified in the non-breeding season only.

6.4.13 The remaining species of relevance are gannet, great black-backed gull, herring gull, kittiwake, puffin and razorbill, with these species having been recorded in greater abundance during the baseline aerial surveys, and in most cases, throughout the species-specific non-breeding seasons.

6.4.14 Outside of the breeding season, breeding seabirds are not constrained by the necessity to provision young and can, therefore, utilise areas at greater distance from the breeding colony than during the breeding season. Furness (2015) considered how breeding seabirds disperse in the non-breeding season, defining the regions within which those populations would be distributed and for each region

a population was calculated, with these areas and associated population termed BDMPS. It is generally assumed that birds are evenly mixed throughout the BDMPS areas meaning that when these spatial areas are used to identify connectivity, connectivity is identified between the Project and all SPAs at which the species is a qualifying feature in the UK.

6.4.15 For the majority of species included in Furness (2015), two BDMPS areas are defined. These are often split to encompass the North Sea and UK western waters, with the English Channel contained within one or the other. For the species considered within the breeding seabirds in the non-breeding season, the BDMPS area of interest is the UK North Sea waters or the UK North Sea and Channel. The area affected by the Project would represent a negligible proportion of the area available to seabirds in the non-breeding season with many species migrating to areas outside of the North Sea. In addition, the seasonal populations of birds that may utilise the Project during the non-breeding season are composed of birds from multiple colonies, reducing the impact on any one single colony.

6.4.16 The potential for LSE is considered for the remaining species, taking into account the contribution of each SPA at which these species are qualifying features to the relevant total BDMPS population for the UK North Sea or UK North Sea and Channel (from Furness, (2015)). This is illustrated in **Table 6.5** where the contribution of individual colonies to the total BDMPS populations presented in Furness (2015) is calculated.

6.4.17 The calculations presented in **Table 6.5** indicate that many of the SPA populations represent a small proportion of the overall BDMPS population that could interact with the Project. Based on the general assumptions that birds within the BDMPS are evenly distributed and mixed, it is considered that there will be no LSE on those SPA populations for which the contribution calculated in **Table 6.5** is less than 1% (with the caveat that where potential LSE is identified in the breeding season then pressures will be considered throughout the annual cycle)[30]. Consideration of the factors mentioned above that may preclude LSE for those SPAs where the contribution to the BDMPS is more than 1% is provided in **Table 6.15** (Array) and **Table 6.16** (ECC).

[30] https://marine.gov.scot/sites/default/files/hra_screening_report_-_redacted.pdf

Table 6.5: The contribution of component SPAs to the relevant BDMPS population for breeding seabirds in the non-breeding season for which connectivity was identified (values in green form greater than one percent of the BDMPS population and are considered to be significant)

SPA	Percentage contribution to BDMPS population (%)											
	Fulmar			Gannet		Great black-backed gull	Kittiwake		Razorbill			Puffin
	Post-breeding	Non-breeding	Pre-breeding	Post-breeding	Pre-breeding	Non-breeding	Post-breeding	Pre-breeding	Post-breeding	Non-breeding	Pre-breeding	Non-breeding
Ailsa Craig	-	-	-	<0.01	<0.01	-	<0.01	<0.01	-	-	-	-
Buchan Ness to Collieston Coast	0.34	0.29	0.34	-	-	-	1.81	2.40	-	-	-	-
Calf of Eday	0.45	0.35	0.45	-	-	0.61	0.11	0.14	-	-	-	-
Canna & Sanday	-	-	-	-	-	-	<0.01	<0.01	-	-	-	<0.01
Cape Wrath	0.01	<0.01	0.01	-	-	-	0.02	0.03	0.01	0.19	0.01	<0.01
Copinsay	0.4	0.31	0.4	-	-	0.48	0.1	0.13	-	-	-	-
Coquet Island	-	-	-	-	-	-	-	-	-	-	-	5.32
East Caithness Cliffs	3.50	2.97	3.50	-	-	0.38	5.84	7.72	4.22	3.43	4.22	-
Fair Isle	7.3	5.57	7.3	1.38	2.21	-	0.11	0.15	0.29	0.25	0.29	1.38
Farne Islands	-	-	-	-	-	-	0.5	0.66	-	-	-	17.23
Fetlar	2.19	1.68	2.19	-	-	-	-	-	-	-	-	-
Flamborough & Filey Coast	0.22	0.18	0.22	4.85	6.23	-	5.44	7.19	3.38	2.74	3.38	0.41
Flannan Isles	0.05	<0.01	0.05	-	-	-	<0.01	<0.01	0.01	0.10	0.01	0.01
Forth Islands	-	-	-	24.32	31.27	-	0.45	0.59	0.89	0.72	0.89	26.83

SPA	Percentage contribution to BDMPS population (%)											
	Fulmar			Gannet		Great black-backed gull	Kittiwake		Razorbill			Puffin
	Post-breeding	Non-breeding	Pre-breeding	Post-breeding	Pre-breeding	Non-breeding	Post-breeding	Pre-breeding	Post-breeding	Non-breeding	Pre-breeding	Non-breeding
Foula	4.68	3.71	4.68	-	-	-	0.05	0.06	0.12	0.10	0.12	2.91
Fowlsheugh	0.05	0.04	0.05	-	-	-	1.35	1.78	1.19	0.97	1.19	-
Grasshom	-	-	-	<0.01	<0.01	-	-	-	-	-	-	-
Handa	0.01	<0.01	0.01	-	-	-	<0.01	0.01	0.03	0.47	0.03	
Hermaness, Saxa Vord and Valla Field	1.72	1.32	1.72	8.54	13.73	-	0.06	0.07	-	-	-	3.06
Hoy	4.82	3.68	4.82	-	-	0.13	0.06	0.08	-	-	-	0.45
Isles of Scilly	-	-	-	-	-	0.02	-	-	-	-	-	-
Marwick Head	-	-	-	-	-	-	0.08	0.1	-	-	-	-
Mingulay & Berneray	0.06	<0.01	0.06	-	-	-	0.01	0.01	0.07	0.92	0.07	<0.01
North Caithness Cliffs	3.51	2.68	3.51	-	-	-	1.47	1.94	0.55	0.47	0.55	0.13
North Colonsay & Western Cliffs	-	-	-	-	-	-	0.01	0.02	-	-	-	-
North Rona & Sula Sgeir	0.04	<0.01	0.04	0.4	<0.01	<0.01	<0.01	<0.01	0.01	0.10	0.01	<0.01
Noss	1.29	0.99	1.29	3.42	5.51	-	0.07	0.1	-	-	-	0.10
Rathlin Island	0.01	<0.01	0.01	-	-	-	0.02	0.03	0.10	0.70	0.10	<0.01
Rousay	0.25	0.19	0.25	-	-	-	0.26	0.34	-	-	-	-

SPA	Percentage contribution to BDMPS population (%)											
	Fulmar			Gannet		Great black-backed gull	Kittiwake		Razorbill			Puffin
	Post-breeding	Non-breeding	Pre-breeding	Post-breeding	Pre-breeding	Non-breeding	Post-breeding	Pre-breeding	Post-breeding	Non-breeding	Pre-breeding	Non-breeding
Rum	-	-	-	-	-	-	<0.01	<0.01	-	-	-	-
Shiant Isles	0.03	<0.01	0.03	-	-	-	<0.01	<0.01	0.03	0.39	0.03	0.06
Skomer, Skokholm and Seas off Pembrokeshire	-	-	-	-	-	-	<0.01	<0.01	0.04	0.27	0.04	0.02
St Abb's to Fast Castle	-	-	-	-	-	-	0.49	0.65	0.41	0.33	0.41	-
St Kilda	0.46	<0.01	0.46	2.61	<0.01	-	<0.01	<0.01	0.01	0.16	0.01	0.12
Sule Skerry & Sule Stack	-	-	-	0.20	<0.01	-	-	-	-	-	-	0.05
Sumburgh Head	0.06	0.04	0.06	-	-	-	0.03	0.04	-	-	-	-
Troup, Pennan and Lion's Heads	0.44	0.37	0.44	-	-	-	2.15	2.85	0.59	0.48	0.59	-
West Westray	0.17	0.13	0.17	-	-	-	1.74	2.30	0.18	0.15	0.18	-

Approach to Screening of Migratory Birds

6.4.18 The approach for screening migratory waterbirds and migratory seabirds is described below. It is of note that the approach was discussed at the Scoping Workshop (**Table 3.1**), with a note on the proposed approach provided in advance. It is understood that NatureScot will review that note following the discussion before providing comment on the approach. The approach proposed below is cognisant of the pending update to migratory bird routes and vulnerabilities, with the recent Strategic Review published on 16 October 2023[31] being part of the work on collision risk in progress. Pending receipt of NatureScot comments on the approach, and pending further publications on migratory bird risk in Scottish waters, screening for migratory waterbirds and seabirds may be subject to review and or update in advance of the Report to Inform Appropriate Assessment.

Migratory waterbirds

6.4.19 The approach to identifying potential connectivity for migratory waterbirds has utilised the migratory polygons associated with Wright *et al*. (2012). Where there is overlap between these polygons and the OWF polygon, potential connectivity is essentially identified between the Project and all SPAs at which the species is a qualifying feature in the UK. This is due to these species utilising multiple SPAs as they migrate, an element of their migratory movements known as 'turnover'. Whilst a population in a given SPA may not change in size, it may consist of different individuals at different times as birds move between sites on their way to breeding or wintering areas. In addition, birds may make within-winter movements utilising multiple SPAs throughout the wintering season. For example, pink-footed geese arriving into the UK from Iceland in the autumn may arrive at an SPA in Scotland but then move to SPAs in Norfolk either immediately or as the winter progresses, in order to exploit different foraging opportunities or to escape adverse weather conditions. For species migrating from breeding grounds in Russia to the UK, individual birds may utilise SPAs across many different countries, resulting in a large number of potential SPAs for consideration if only potential connectivity is used as a determinant for LSE.

6.4.20 As a result, an additional stage has been added to the screening approach to determine the potential for vulnerability of birds on migration to the Project, before concluding the potential for LSE. This approach has utilised the Collision Risk Modelling (CRM) approach described in Wright *et al*. (2012). Since the publication of Wright *et al.* (2012) there have been updates to the UK National Site Network including the addition of new features at some SPAs. For these 'new' features that aren't included in Wright *et al.* (2012) migratory polygons have been defined based on available literature (e.g., Wernham *et al.,* 2002). This approach therefore considers both the potential for connectivity and the vulnerability of each species' population, in order to determine if there is the potential for LSE.

6.4.21 The Excel workbook associated with the Strategic Ornithological Support Services (SOSS) Migration Assessment Tool (MAT) (Wright *et al*., 2012) has been populated with the Lines of Connectivity that pass through the OPB. The route filter has been populated to include the connections identified in **Table 6.6**.

[31] https://www.gov.scot/publications/strategic-study-collision-risk-birds-migration-further-development-stochastic-collision-risk-modelling-tool-work-package-1-strategic-review-birds-migration-scottish-waters/

Table 6.6: Connections retained for the Project in the SOSSMAT Excel workbook

Connection (Start)	Connection (End)
Central Europe North Sea coast	• Orkney • Scottish mainland North Sea coast • Shetland
Denmark	• Faroe Islands • Iceland • Orkney • Scottish mainland North Sea coast • Shetland
England North Sea coast	• Orkney • Scottish mainland North Sea coast • Shetland
Norway	• Orkney • Scottish mainland North Sea coast
Orkney	• Scottish mainland North Sea coast
Scottish mainland North Sea coast	• Scottish mainland North Sea coast
Shetland	• Scottish mainland North Sea coast

6.4.22 The results table in the SOSSMAT Excel workbook has been populated using population sizes from Woodward *et al*. (2020) or Wright *et al*. (2012). The population correction factor has been estimated based on the proportion of the migratory corridor in Wright *et al*. (2012) that overlaps with the region in which the Project is located, alongside expert judgement relating to the migratory behaviour of each species informed by other relevant literary sources (e.g., Wernham *et al*., 2002). Both of these parameters are shown in **Table 6.7**.

Table 6.7: Migratory Bird Reference Populations

Species	Population size	Population correction factor	Reference
Barnacle goose (Svalbard)	33,000	100	Wright *et al.* 2012 - GB population
Bar-tailed godwit	53,500	20	Woodward *et al.* 2020 - UK population
Black-tailed godwit	41,000	20	Woodward *et al.* 2020 - UK population
Curlew (non-breeding)	125,000	20	Woodward *et al.* 2020 - UK population
Curlew (Breeding)	117,000	20	Woodward *et al.* 2020 - UK population
Dotterel	425	20	Woodward *et al.* 2020 - UK population
Dunlin	350,000	20	Woodward *et al.* 2020 - UK population
Golden plover (breeding)	101,000	20	Woodward *et al.* 2020 - UK population
Golden plover (non-breeding)	410,000	20	Woodward *et al.* 2020 - UK population
Goldeneye	21,000	20	Woodward *et al.* 2020 - UK population
Goosander	14,500	30	Woodward *et al.* 2020 - UK population
Greenshank	4,790	20	Wright *et al.* 2012 - GB population
Grey plover	33,500	20	Woodward *et al.* 2020 - UK population
Greylag goose	85,000	50	Wright *et al.* 2012 - GB population
Hen harrier	545	20	Woodward *et al.* 2020 - UK population
Knot	265,000	20	Woodward *et al.* 2020 - UK population
Lapwing	635,000	20	Woodward *et al.* 2020 - UK population
Mallard	675,000	20	Woodward *et al.* 2020 - UK population
Merlin	2,300	20	Woodward *et al.* 2020 - UK population
Oystercatcher (breeding)	191,000	20	Woodward *et al.* 2020 - UK population
Oystercatcher (non-breeding)	305,000	20	Woodward *et al.* 2020 - UK population
Pink-footed goose	510,000	50	Woodward *et al.* 2020 - UK population
Pintail	20,000	10	Woodward *et al.* 2020 - UK population
Pochard	29,000	20	Woodward *et al.* 2020 - UK population
Purple sandpiper	9,900	20	Woodward *et al.* 2020 - UK population
Red-breasted merganser	11,000	10	Woodward *et al.* 2020 - UK population
Redshank (*britannica*)	44,000	20	Woodward *et al.* 2020 - UK population
Redshank (*robusta*)	100,000	20	Woodward *et al.* 2020 - UK population

Species	Population size	Population correction factor	Reference
Redshank (*totanus*)	25,000	20	Wright *et al.* 2012 - GB population
Ringed plover (non-breeding)	42,500	20	Woodward *et al.* 2020 - UK population
Ringed plover (breeding)	10,900	20	Woodward *et al.* 2020 - UK population
Sanderling	20,500	20	Woodward *et al.* 2020 - UK population
Scaup	6,400	10	Woodward *et al.* 2020 - UK population
Shelduck	51,000	20	Woodward *et al.* 2020 - UK population
Short-eared owl	4,400	20	Woodward *et al.* 2020 - UK population
Shoveler	19,500	20	Woodward *et al.* 2020 - UK population
Slavonian grebe	995	20	Woodward *et al.* 2020 - UK population
Snipe	1,100,000	20	Woodward *et al.* 2020 - UK population
Teal	435,000	20	Woodward *et al.* 2020 - UK population
Tufted duck	140,000	20	Woodward *et al.* 2020 - UK population
Turnstone	43,000	20	Woodward *et al.* 2020 - UK population
Whimbrel	3,840	20	Wright *et al.* 2012 - GB population
Whooper swan	19,500	50	Woodward *et al.* 2020 - UK population
Wigeon	450,000	20	Woodward *et al.* 2020 - UK population

6.4.23 Collision risk models for each species have been developed using the Band (2012) Excel workbook. The parameters required for each model are presented in **Table 6.8** alongside the source of parameter values for all species. Wind farm and wind turbine parameters were consistent with the worst case wind turbine scenario for the Project (**Table 6.9**).

Table 6.8: Parameters required for migratory waterbird collision risk modelling and associated references

Parameter	Source	Species of Relevance
Bird length	Robinson (2005)	All
Wingspan	Robinson (2005)	All
Flight type	All set to flapping	All
Upwind flight	All set to 50%	All
Proportion of birds at collision height	Wright *et al*. (2012)	All
Bird speed	Alerstam (2007)	Barnacle goose (Svalbard), bar-tailed godwit, curlew, dunlin, goldeneye, goosander, greenshank, grey plover, greylag goose, hen harrier, knot, lapwing, mallard, oystercatcher, pintail, pochard, red-breasted merganser, ringed plover, ruff, scaup, shelduck, snipe, teal, tufted duck, turnstone, whimbrel, whooper swan, wigeon
	Binford and Youngman (2010)	Slavonian grebe
	Bruderer and Boldt (2001)	Short-eared owl
	Cochran and Applegate (1986)	Merlin
	Surrogate values (SNH, 2014)	Black-tailed godwit, dotterel, golden plover, great crested grebe, pink-footed goose, purple sandpiper, redshank, sanderling, shoveler
Avoidance rate	SNH (2010)	All species (98%)

Table 6.9: Wind farm and turbine parameters

Parameter	Value
Rotor radius (m)	118
Rotation speed (rpm)	7.4
Monthly proportion of time operational (%)	97.8
Max blade width (m)	6.5
Pitch (°)	2.7
Number of turbines	71

6.4.24 The use of collision risk modelling for each species has been applied in **Table 6.10** and provides an estimate of the magnitude of change to the baseline mortality with respect to the relevant biogeographic population. A potential LSE is identified for any species for which the impact represents more than a trivial level, defined as 1% of the baseline mortality of the relevant biogeographic population. The highest risk found is for barnacle goose, at 0.05%, deemed *de minimus* and not significant. As a result of this exercise no LSEs are identified for migratory waterbirds.

Table 6.10: Determination of LSE for migratory waterbirds

Species	Total Collision Risk (no. of birds)	Baseline Mortality of Biogeographic Population	% Baseline Morality Represented by Collision Risk	Potential for LSE (Yes/No)
Barnacle goose (Svalbard)	1.4	2,970	0.05	N
Bar-tailed godwit	0.2	15,248	<0.01	N
Black-tailed godwit	0.3	2,460	0.01	N
Curlew (non-breeding)	0.5	12,625	<0.01	N
Curlew (Breeding)	1.0	11,817	0.01	N
Dotterel	0.0	115	<0.01	N
Dunlin	1.8	91,000	<0.01	N
Golden plover (breeding)	0.7	27,270	<0.01	N
Golden plover (non-breeding)	1.6	110,700	<0.01	N
Goldeneye	0.1	4,830	<0.01	N
Goosander	0.1	2,610	<0.01	N
Greenshank	0.0	1,245	<0.01	N
Grey plover	0.1	4,690	<0.01	N
Greylag goose	4.4	14,450	0.03	N
Hen harrier	0.0	104	0.01	N
Knot	1.5	42,135	<0.01	N
Lapwing	2.3	187,325	<0.01	N
Mallard	1.5	251,775	<0.01	N
Merlin	0.0	874	<0.01	N
Oystercatcher (breeding)	1.5	22,920	0.01	N

Species	Total Collision Risk (no. of birds)	Baseline Mortality of Biogeographic Population	% Baseline Morality Represented by Collision Risk	Potential for LSE (Yes/No)
Oystercatcher (non-breeding)	1.1	36,600	<0.01	N
Pink-footed goose	18.7	87,210	0.02	N
Pintail	0.0	6,740	<0.01	N
Pochard	0.1	10,150	<0.01	N
Purple sandpiper	0.0	2,030	<0.01	N
Red-breasted merganser	0.0	1,980	<0.01	N
Redshank (britannica)	0.4	11,440	<0.01	N
Redshank (robusta)	0.7	26,000	<0.01	N
Redshank (totanus)	0.1	6,500	<0.01	N
Ringed plover (non-breeding)	0.1	9,690	<0.01	N
Ringed plover (breeding)	0.1	2,485	<0.01	N
Sanderling	0.1	3,485	<0.01	N
Scaup	0.0	1,216	<0.01	N
Shelduck	0.1	5,814	<0.01	N
Short-eared owl	0.0	1,364	<0.01	N
Shoveler	0.0	8,190	<0.01	N
Slavonian grebe	0.0	398	<0.01	N
Snipe	3.3	570,900	<0.01	N
Teal	0.8	204,450	<0.01	N
Tufted duck	0.3	40,600	<0.01	N
Turnstone	0.1	6,020	<0.01	N
Whimbrel	0.0	422	<0.01	N
Whooper swan	1.2	3,881	0.03	N
Wigeon	0.9	211,500	<0.01	N

Migratory seabirds

6.4.25 Potential connectivity has been identified between the Project and two migratory seabirds, storm petrel and Leach's petrel, based on the migratory corridors defined in WWT Consulting

and MacArthur Green (2014). During migration, birds from multiple SPAs could occur at the Project site. If screening were to be conducted using connectivity as the determinant for LSE, LSE would be concluded for a large number of SPAs. In order to ensure the assessment includes only those SPAs for which there is a real likelihood of LSE, an additional stage is incorporated into the screening exercise for migratory seabirds. This stage is similar to that applied for migratory waterbirds, using collision risk modelling to provide a more refined appraisal of vulnerability for migratory seabird species.

6.4.26 Unlike the collision risk modelling approach applied for regularly occurring seabird species, density data collected during site-specific surveys is deemed to be unsuitable to estimate the impact of collision for migratory seabird species. This is due to the snapshot nature of site-specific surveys and consequential limitations in recording sporadic movements of migratory species. Therefore, the collision risk modelling approach used for migratory seabirds incorporates species-specific information relating to population estimates and migratory behaviour. A generic 'migratory front' is then defined which is then used to calculate the number of birds that have the potential to interact with the Stromar Array Area during spring and autumn migration.

6.4.27 In order to identify the interacting population for use in collision risk modelling the following stages are applied:

- Define relevant seasonal BDMPS populations for each species considered;
- Define a migratory front that incorporates the longest width of the Project across which migration will occur;
- Calculate the proportion of the migratory front represented by the Project; and
- Calculate interacting populations for each species in each migratory season.

6.4.28 The interacting populations are then incorporated into collision risk modelling to provide a collision risk estimate for each species. Collision risk modelling has been undertaken using the Band (2012) Collision Risk Model (CRM) which, allows for consideration of birds on migration.

6.4.29 In order to calculate the number of birds that may interact with the Project, a BDMPS must first be defined for each species which represents the population from which birds may exhibit connectivity with the Project. In most cases this population represents those birds that migrate through the North Sea between breeding and wintering areas. For both species, the BDMPS population represents the proportion of the passage population estimated to utilise UK eastern waters on migration (WWT Consulting and MacArthur Green, 2014).

6.4.30 The proportion of this population that may interact with the Project is calculated based on the proportion of the migratory front represented by the Project. The migratory front represents a hypothetical line across which the whole BDMPS population will cross, incorporating the greatest width of the Project. It is assumed that birds are equally distributed across this front, however it should be noted that the migratory movements of some species may be biased towards inshore or offshore waters (Stienen et al., 2007).

6.4.31 The migratory front to be used to estimate the population of migratory seabirds passing through the Project is 60 km for both species. The populations of migratory seabird species considered to have potential to interact with the Project are calculated using the following formula:

*Interacting population = Width of development area / width of migration route * species populations*

6.4.32 The width of the Project is 14.5 km. The Project therefore represents 24.2% of the total migratory front with this proportion applied to the BDMPS populations in **Table 6.11**. The peak migratory months for each species, as required for collision risk modelling, were defined as October and May.

Table 6.11: Migratory seabird BDMPS populations and the proportion of these populations predicted to have potential to interact with the Project.

Species	Season	BDMPS population	Interacting population
Storm petrel	Autumn	20,000	4,847
	Spring	10,000	2,423
Leach's petrel	Autumn	50,000	12,117
	Spring	100,000	24,233

6.4.33 The species parameters presented in **Table 6.12** were used for collision risk modelling, The turbine and wind farm parameters used were identical to those used for migratory waterbirds (**Table 6.9**). A generic 98% avoidance rate has been assumed for both species.

Table 6.12: Species input parameters used in collision risk modelling.

Parameter	Source	Storm petrel	Leach's petrel
Bird length (m)	Robinson (2017)	0.16	0.20
Wingspan (m)	Robinson (2017)	0.38	0.46
Flight speed (m/s)	Pennycuick (1987) / Alerstam (1993)	8.8	8.8
Flight type	-	Flapping	Flapping
Proportion at collision height (%)	Furness *et al.* (2013)	2	2

6.4.34 Collision risk estimates for both species are presented in **Table 6.13** alongside the baseline mortality of the BDMPS populations and the increase in baseline mortality as a result of collision. No LSE is identified where the increase in baseline mortality is below 1%. As a result of this exercise, no LSEs are identified for migratory seabirds.

Table 6.13: Determination of LSE for migratory seabirds

Species	Season	Total Collision Risk (no. of birds)	Baseline Mortality of Biogeographic Population	% baseline morality represented by collision risk	Potential for LSE (Yes/No)
Storm petrel	Autumn	0.12	630	0.02	N
	Spring	0.06	315	0.02	N
Leach's petrel	Autumn	0.30	1,454	0.02	N

Species	Season	Total Collision Risk (no. of birds)	Baseline Mortality of Biogeographic Population	% baseline morality represented by collision risk	Potential for LSE (Yes/No)
	Spring	0.61	2,908	0.02	N

Factors affecting LSE

6.4.35 **Table 6.15** and **Table 6.16** consider the potential for LSE with regards to the Array and ECC respectively, on all SPAs for which potential connectivity exists in the breeding season (i.e. those identified for breeding seabirds in the breeding season in **Section 5.4**), those SPAs and associated features for which the contribution of the SPA is greater than 1% of the total BDMPS population (as identified in **Table 6.5**) and those SPAs for which there is potential connectivity in the non-breeding season (i.e. those identified for non-breeding seabirds in **Section 5.4**) in relation to the factors identified in **paragraph 6.4.5**.

6.4.36 The text below provides the justification for whether LSE can be ruled out for a given pressure[32]. The justification is categorised by letters which correspond to a letter within **Table 6.15** (array) and **Table 6.16** (ECC). Within these tables, where a LSE cannot be ruled out for a given pressure, a ✓ symbol is included and the box is highlighted in blue. Where a LSE has been ruled out a X symbol is included and highlighted green. Where pressures are not applicable to a particular feature they are greyed out. The justification text is as follows:

a. **Foraging distances applied over land:** The Screening Tool does not discriminate between land and sea, and there are occasions where the foraging range of a feature appears to intersect with the OPB, but this has only occurred because the tool has projected this range across an intervening land mass. It is highly unlikely that seabirds will traverse significant distances over land in order to forage. In these cases a judgement is made as to whether connectivity would still be indicated if foraging was restricted only to sea areas.

b. **Foraging ranges applied to foraging areas:** The boundaries designated for certain SPAs incorporate foraging areas utilised by birds from colonies that either form part of the same SPA or are designated as part of another SPA. In these cases it is incorrect to apply an additional foraging to the SPA boundary as this would over-estimate the foraging area utilised by relevant features. Where an LSE is identified for a functionally linked seabird colony, then an LSE is also identified for the SPA designated to protect associated foraging areas of that colony. This approach follows NatureScot (2023a) guidance.

c. **Vulnerability of species to impacts associated with offshore wind farms (**as informed by **Table 6.14):** The first stage of the screening exercise has been conducted assuming that all pressures are applicable to all features. This is, however, not realistic with some species having no vulnerability to certain pressures.

   Table 6.14 identifies the vulnerability for each species for which potential connectivity **between the Project array area and an SPA or Ramsar** at which they are a feature has been identified, using the vulnerability scores presented in Wade *et al.* (2016). The following criteria have been used for each pressure:

   i. Potential for LSE with regards to collision will only apply if a feature has a vulnerability of Moderate or higher.

[32] https://marine.gov.scot/sites/default/files/morven_-_scop-0028_-_scoping_opinion_-_november_2023.pdf and https://marine.gov.scot/sites/default/files/morven_-_scop-0028_-_appendix_i_-_consultation_responses_and_advice_-_november_2023.pdf

ii. Potential for LSE with regards to distributional response (displacement and barrier effects) will only apply if a feature has a vulnerability to 'displacement associated with structures' of Moderate or higher and/or a Low habitat flexibility. The exception to the latter criteria is black-legged kittiwake, for which assessments for distributional response (displacement) associated with structures will be undertaken based on the advice of NatureScot and the Marine Directorate to previous OWF projects in Scottish waters.
iii. Potential for LSE with regards to indirect temporary habitat loss/ disturbance will only apply where a species has a low habitat flexibility.
iv. Potential for LSE with regards to attraction to light will only apply where a species has a nocturnal activity of High.
v. Potential for LSE with regards to direct temporary habitat loss/disturbance, underwater noise, above water noise and suspended sediments will only apply if a feature has a vulnerability to 'displacement associated with vessels/helicopters' of Moderate or higher and/or a Low habitat flexibility.

Table 6.14 also identifies the vulnerability for each species for which potential connectivity **between the ECC and an SPA or Ramsar** at which they are a feature has been identified, using the vulnerability scores presented in Wade *et al.* (2016). The following criteria have been used for each pressure[33]:

i. Potential for LSE with regards to indirect temporary habitat loss/ disturbance will only apply where a species has a low habitat flexibility.
ii. Potential for LSE with regards to direct temporary habitat loss/disturbance, underwater noise, above water noise and suspended sediments will only apply if a feature has a vulnerability to 'displacement associated with vessels/helicopters' of High[34] or higher and/or a Low habitat flexibility.
iii. Potential for LSE with regards to attraction to light will only apply where a species has a nocturnal activity of High.

Those species for which vulnerability to certain impacts is considered too low to result in LSE are identified in **Table 6.14** using green shading.

d. **Abundance of species at the OPB (breeding season):** No Leach's petrels, sandwich terns, whooper swans, pink-footed geese, greylag geese, barnacle geese, smew, ruff, greenshanks, teal or goldeneye were recorded during baseline aerial surveys conducted between March 2022 and February 2023. In addition, in the breeding season, only one lesser black-backed gull was recorded (April 2022) and three herring gulls (April 2022). Low numbers of storm petrel (single count of 14 birds in June 2022), Manx shearwater (two in May 2022 and 11 in June 2022) and great skua (a total of five birds recorded between May 2022 and July 2022) were also recorded during the surveys. It is, therefore, considered that due to the low abundance of these species, there is no potential for an LSE in the breeding season for any of the SPAs for which potential connectivity was identified.

e. **Site-specific foraging range data (gannet):** The foraging range tool used to identify potential connectivity between the OPB and SPAs in the breeding season incorporates a number of site-specific foraging ranges for certain colonies. However, there is further information that would suggest connectivity does not exist between the Project and some of the SPAs at which northern gannet is a qualifying feature. Northern gannet are known to exhibit segregation in relation to the foraging areas utilised by birds from different breeding colonies (Wakefield *et al.,* 2013). The area in which the project is located does not overlap with tracks of gannet from any of the colonies included in Wakefield *et al.,* (2013). There is a non-SPA gannetry at Troup Head which may utilise this area. However, in the absence of data to confirm this a precautionary approach has been adopted assuming that birds from those SPAs with tracked birds that occur closest to the Project area (Forth Islands SPA, St Kilda SPA and Sule Skerry and Sule Stack SPA) may interact with the Project area. In

[33] Please note that as set out in **Table 5.4**, collision and barrier pressures are not applicable to the ECC, and only apply to the Project array.

[34] The levels of disturbance associated with vessels/helicopters are considered to be greater for the Project array area than the ECC. Therefore, the vulnerability threshold is higher for the ECC (High or higher) than the project array area (Moderate or higher).

addition, it is also assumed that birds from SPAs close to the Project area not included in Wakefield *et al.,* (2013) (e.g. North Rona and Sula Sgeir SPA and Noss SPA) may also utilise the Project area.

f. **Breeding seabirds in the non-breeding season:** See Breeding seabirds in the non-breeding season in **Table 6.5**.

g. **Site specific foraging range data (Manx shearwater):** Dean *et al.* (2012) presents tracking data for Manx shearwater at breeding colonies located within the Copeland Islands SPA, Rum SPA and Skomer, Skokholm and Seas off Pembrokeshire SPA. The tracking data presented shows no connectivity with the Project and, therefore, no LSE is identified for these SPAs. Birds from the Copeland Islands SPA and Skomer, Skokholm and Seas off Pembrokeshire SPA are utilising foraging areas associated with the Irish Sea Front. It is considered that birds from other SPAs for which connectivity with the Project has been identified, on the western coast of the UK, will also utilise this area and show no connectivity with the Scoping Boundary and, therefore, LSE is also discounted for the Isles of Scilly SPA and Glannau Aberdaron ac Ynys Enlli/ Aberdaron Coast and Bardsey Island SPA.

Table 6.14: Vulnerability of qualifying species with potential connectivity to pressures associated with offshore wind farm array and ECC (this informs justification text 'c', as defined above ('vulnerability of species to impacts associated with offshore wind farms') as applied in the LSE matrix in Table 6.15 array and Table 6.16 ECC presented below)[35]

Species	Pressures relevant to the Array					Pressures relevant to the ECC		
	Collision [36]	Displacement associated with structures (physical presence, (visual disturbance/displacement and barrier effects)) [37]	Disturbance associated with vessels/helicopters (physical presence, visual disturbance/displacement and barrier effects, underwater sound, above water sound) [38]	Habitat flexibility (indirect physical impact (to habitat), habitat loss/gain, direct physical impact (to habitat), suspended sediments) [39]	Proportion of flight activity at night [40]	Disturbance associated with vessels/helicopters (physical presence, visual disturbance/displacement and barrier effects, underwater sound, above water sound) [41]	Habitat flexibility (indirect physical impact (to habitat), habitat loss/gain, direct physical impact (to habitat), suspended sediments) [42]	Proportion of flight activity at night [43]
Kittiwake	Very High	Low	Low	Moderate	Moderate	Low	Moderate	Moderate
Common gull	Very High	Low	Low	Moderate	Moderate	Low	Moderate	Moderate
Great black-backed gull	Very High	Low	Very Low	Moderate	Moderate	Very Low	Moderate	Moderate
Herring gull	Very High	Low	Very Low	High	Moderate	Very Low	High	Moderate

[35] Vulnerabilities shown in green fall below the threshold for a feature to be vulnerable to a particular effect, and are therefore screened out in **Table 6.9**. Vulnerabilities shown in white have a potential to lead to an LSE.

[36] Wade *et al.,* (2016) provides a vulnerability score which has been translated as follows: >200 = Very High, 101-200 = High, 51-100 = Moderate, 1-50 = Low, 0 = Very Low

[37] The numerical rankings in Wade *et al*. (2016) have been translated to vulnerability as follows: 5 = Very High, 4 = High, 3 = Moderate, 2 = Low and 1 = Very Low

[38] The numerical rankings in Wade *et al*. (2016) have been translated to vulnerability as follows: 5 = Very High, 4 = High, 3 = Moderate, 2 = Low and 1 = Very Low

[39] The numerical rankings in Wade *et al*. (2016) have been translated to vulnerability as follows: 4 = Low, 3 = Moderate, 2 = Moderate and 1 = High

[40] The numerical rankings in Wade *et al*. (2016) have been translated to vulnerability as follows: 5 = Very High, 4 = High, 3 = Moderate, 2 = Low and 1 = Very Low

[41] The numerical rankings in Wade *et al*. (2016) have been translated to vulnerability as follows: 5 = Very High, 4 = High, 3 = Moderate, 2 = Low and 1 = Very Low

[42] The numerical rankings in Wade *et al*. (2016) have been translated to vulnerability as follows: 4 = Low, 3 = Moderate, 2 = Moderate and 1 = High

[43] The numerical rankings in Wade *et al*. (2016) have been translated to vulnerability as follows: 5 = Very High, 4 = High, 3 = Moderate, 2 = Low and 1 = Very Low

Species	Pressures relevant to the Array					Pressures relevant to the ECC		
	Collision [36]	Displacement associated with structures (physical presence, (visual disturbance/displacement and barrier effects)) [37]	Disturbance associated with vessels/helicopters (physical presence, visual disturbance/displacement and barrier effects, underwater sound, above water sound) [38]	Habitat flexibility (indirect physical impact (to habitat), habitat loss/gain, direct physical impact (to habitat), suspended sediments) [39]	Proportion of flight activity at night [40]	Disturbance associated with vessels/helicopters (physical presence, visual disturbance/displacement and barrier effects, underwater sound, above water sound) [41]	Habitat flexibility (indirect physical impact (to habitat), habitat loss/gain, direct physical impact (to habitat), suspended sediments) [42]	Proportion of flight activity at night [43]
Lesser black-backed gull	Very High	Low	Very Low	High	Moderate	Very Low	High	Moderate
Sandwich tern	Very High	Low	Low	Moderate	Very Low	Low	Moderate	Very Low
Common tern	High	Low	Low	Moderate	Very Low	Low	Moderate	Very Low
Arctic tern	High	Low	Low	Moderate	Very Low	Low	Moderate	Very Low
Great skua	Very High	Very Low	Very Low	Moderate	Very Low	Very Low	Moderate	Very Low
Guillemot	Very Low	High	Moderate	Moderate	Low	Moderate	Moderate	Low
Razorbill	Very Low	High	Moderate	Moderate	Very Low	Moderate	Moderate	Very Low
Puffin	Very Low	Moderate	Moderate	Moderate	Very Low	Moderate	Moderate	Very Low
Storm petrel	Low	Very Low	Very Low	High	High	Very low	High	High
Leach's petrel	Low	Very Low	Very Low	High	High	Very Low	High	High
Fulmar	Very Low	Very Low	Very Low	High	High	Very Low	High	High

Species	Pressures relevant to the Array					Pressures relevant to the ECC		
	Collision [36]	Displacement associated with structures (physical presence, (visual disturbance/displacement and barrier effects)) [37]	Disturbance associated with vessels/helicopters (physical presence, visual disturbance/displacement and barrier effects, underwater sound, above water sound) [38]	Habitat flexibility (indirect physical impact (to habitat), habitat loss/gain, direct physical impact (to habitat), suspended sediments) [39]	Proportion of flight activity at night [40]	Disturbance associated with vessels/helicopters (physical presence, visual disturbance/displacement and barrier effects, underwater sound, above water sound) [41]	Habitat flexibility (indirect physical impact (to habitat), habitat loss/gain, direct physical impact (to habitat), suspended sediments) [42]	Proportion of flight activity at night [43]
Manx shearwater	Very Low	Very Low	Very Low	High	Moderate	Very Low	High	Moderate
Gannet	High	High	Very Low	High	Low	Very low	High	Low
Cormorant	Very High	Very Low	High	Moderate	Very Low	High	Moderate	Very Low
Shag	High	Very Low	High	Moderate	Very Low	High	Moderate	Very Low

Table 6.15: LSE matrix for SPAs in UK waters with marine ornithological features: Array

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Collision	Distributional response (displacement)	Distributional response (barrier effects)	Attraction to Light
	C	O	D	C	O	D	O	O	O	O
Ailsa Craig SPA										
Gannet	X (a, c, e, f)	X (a, c, e, f)	X (a, c, e, f)	X (a, c, e, f)	X (a, c, e, f)	X (a, c, e, f)	X (a, e, f)	X (a, e, f)	X (a, e, f)	X (a, c, e, f)
Auskerry SPA										
Storm petrel	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)
Arctic tern	N/A	N/A	N/A	X (c)	X (c)	X (c)	N/A	N/A	N/A	X (c)
Buchan Ness to Collieston Coast SPA										
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)	X (c)
Guillemot	N/A	N/A	N/A	X (c)	X (c)	X (c)	N/A	N/A	N/A	X (c)
Calf of Eday SPA										
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)	X (c, f)
Guillemot	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)
Great black-backed gull	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	X (c, f)	X (c, f)	X (c, f)

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Collision	Distributional response (displacement)	Distributional response (barrier effects)	Attraction to Light
	C	O	D	C	O	D	O	O	O	O
Canna and Sanday SPA										
Kittiwake	X (a, c)	X (a, c)	X (a, c)	X (a, c)	X (a, c)	X (a, c)	X (a)	X (a)	X (a, c)	X (a, c)
Cape Wrath SPA										
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)	X (c, f)
Puffin	✓	✓	✓	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)
Copeland Islands SPA										
Manx shearwater	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)
Copinsay SPA										
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)	X (c, f)
Great black-backed gull	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	X (c, f)	X (c, f)	X (c, f)
Guillemot	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)
Coquet Island SPA										
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Collision	Distributional response (displacement)	Distributional response (barrier effects)	Attraction to Light
	C	O	D	C	O	D	O	O	O	O
East Caithness Cliffs SPA										
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)	X (c)
Razorbill	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)
Guillemot	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)
Herring gull	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)	X (c, d)	X (c, d)	X (c, d)
Great black-backed gull	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	X (c, f)	X (c, f)	X (c, f)
Cormorant	N/A	N/A	N/A	X (c)	X (c)	X (c)	N/A	N/A	N/A	X (c)
Fair Isle SPA										
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Gannet	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	✓	✓	X (c)
Great skua	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)	X (c, d)	X (c, d)	X (c, d)
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)	X (c, f)
Puffin	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)
Guillemot	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Collision	Distributional response (displacement)	Distributional response (barrier effects)	Attraction to Light
	C	O	D	C	O	D	O	O	O	O
Razorbill	✓	✓	✓	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)
Farne Islands SPA										
Kittiwake	N/A	N/A	N/A	X (c, f)	X (c, f)	X (c, f)	N/A	N/A	N/A	X (c, f)
Puffin	✓ (non-breeding season only)	✓ (non-breeding season only)	✓ (non-breeding season only)	X (c)	X (c)	X (c)	X (c)	✓ (non-breeding season only)	✓ (non-breeding season only)	X (c)
Fetlar SPA										
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Great skua	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)	X (c, d)	X (c, d)	X (c, d)
Flamborough and Filey Coast SPA										
Gannet	X (c, e)	X (c, e)	X (c, e)	X (c, e)	X (c, e)	X (c, e)	✓ (non-breeding season only)	✓ (non-breeding season only)	✓ (non-breeding season only)	X (c, e)
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓ (non-breeding season only)	✓ (non-breeding season only)	X (c)	X (c)
Razorbill	✓ (non-breeding season only)	✓ (non-breeding season only)	✓ (non-breeding season only)	X (c)	X (c)	X (c)	X (c)	✓ (non-breeding season only)	✓ (non-breeding season only)	X (c)
Flannan Isles SPA										

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Collision	Distributional response (displacement)	Distributional response (barrier effects)	Attraction to Light
	C	O	D	C	O	D	O	O	O	O
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Leach's petrel	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)
Kittiwake	N/A	N/A	N/A	X (c, f)	X (c, f)	X (c, f)	N/A	N/A	N/A	X (c, f)
Forth Islands SPA										
Gannet	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	✓	✓	X (c)
Lesser black-backed gull	N/A	N/A	N/A	X (c, d)	X (c, d)	X (c, d)	N/A	N/A	N/A	X (c, d)
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)	X (c, f)
Puffin	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)
Foula SPA										
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Leach's petrel	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)
Great skua	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)	X (c, d)	X (c, d)	X (c, d)
Puffin	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)	X (c, f)

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Collision	Distributional response (displacement)	Distributional response (barrier effects)	Attraction to Light
	C	O	D	C	O	D	O	O	O	O
Razorbill	✓	✓	✓	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)
Guillemot	N/A	N/A	N/A	X (c)	X (c)	X (c)	N/A	N/A	N/A	X (c)
Fowlsheugh SPA										
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)	X (c)
Razorbill	✓ (nonbreeding season only)	✓ (non-breeding season only)	✓ (non-breeding season only)	X (c)	X (c)	X (c)	X (c)	✓ (non-breeding season only)	✓ (non-breeding season only)	X (c)
Glannau Aberdaron ac Ynys Enlli/ Aberdaron Coast and Bardsey Island SPA										
Manx shearwater	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)
Handa SPA										
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Great skua	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)	X (c, d)	X (c, d)	X (c, d)
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)	X (c, f)
Hermaness, Saxa Vord and Valla Field SPA										
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Gannet	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	✓	✓	X (c)

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Collision	Distributional response (displacement)	Distributional response (barrier effects)	Attraction to Light
	C	O	D	C	O	D	O	O	O	O
Great skua	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)	X (c, d)	X (c, d)	X (c, d)
Puffin	✓	✓	✓	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)	X (c, f)
Hoy SPA										
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Great skua	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)	X (c, d)	X (c, d)	X (c, d)
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)	X (c, f)
Puffin	✓	✓	✓	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)
Great black-backed gull	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	X (c, f)	X (c, f)	X (c, f)
Guillemot	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)
Irish Sea Front SPA										
Manx shearwater	X (b, c, d, g)	X (b, c, d, g)	X (b, c, d, g)	X (b, c, d, g)	X (b, c, d, g)	X (b, c, d, g)	X (b, c, d, g)	X (b, c, d, g)	X (b, c, d, g)	X (b, c, d, g)
Isles of Scilly SPA										
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Manx shearwater	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Collision	Distributional response (displacement)	Distributional response (barrier effects)	Attraction to Light
	C	O	D	C	O	D	O	O	O	O
Marwick Head SPA										
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)	X (c, f)
Guillemot	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)
Mingulay and Berneray SPA										
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Mousa SPA										
Storm petrel	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)
North Caithness Cliffs SPA										
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)	X (c)
Puffin	✓	✓	✓	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)
Guillemot	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)
Razorbill	✓	✓	✓	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)
North Rona and Sula Sgeir SPA										
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Collision	Distributional response (displacement)	Distributional response (barrier effects)	Attraction to Light
	C	O	D	C	O	D	O	O	O	O
Leach's petrel	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)
Gannet	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	✓	X (c, f)
Storm petrel	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)	X (c, f)
Puffin	✓	✓	✓	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)
Northumberland Marine SPA										
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Kittiwake	X (b, c, f)	X (b, c, f)	X (b, c, f)	X (c, f)	X (c, f)	X (c, f)	X (b, c, f)	X (b, c, f)	X (b, c, f)	X (c, f)
Noss SPA										
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓ (non-breeding season only)
Gannet	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	✓	✓	X (c)
Great skua	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)	X (c, d)	X (c, d)	X (c, d)
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)	X (c, f)
Puffin	✓	✓	✓	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)
Outer Firth of Forth and St Andrews Bay Complex SPA										

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Collision	Distributional response (displacement)	Distributional response (barrier effects)	Attraction to Light
	C	O	D	C	O	D	O	O	O	O
Manx shearwater	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)
Gannet	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	✓	✓	X (c)
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)	X (c)
Puffin	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)
Pentland Firth Islands SPA										
Arctic tern	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	X (c)	X (c)	X (c)
Ramna Stacks and Gruney SPA										
Leach's petrel	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)
Rathlin Island SPA										
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Ronas Hill - North Roe and Tingon SPA										
Great skua	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)	X (c, d)	X (c, d)	X (c, d)
Rousay SPA										
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)	X (c, f)
Guillemot	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Collision	Distributional response (displacement)	Distributional response (barrier effects)	Attraction to Light
	C	O	D	C	O	D	O	O	O	O
Rum SPA										
Manx shearwater	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)
Kittiwake	X (a, c, f)	X (a, c, f)	X (a, c, f)	X (a, c, f)	X (a, c, f)	X (a, c, f)	X (a, f)	X (a, c, f)	X (a, c, f)	X (a, c, f)
Seas off Foula SPA										
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Great skua	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)	X (c, d)	X (c, d)	X (c, d)
Puffin	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)
Seas off St Kilda SPA										
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Storm petrel	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)
Gannet	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	✓	✓	X (c)
Skomer, Skokholm and the Seas off Pembrokeshire SPA										
Manx shearwater	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)	X (c, d, g)
St Abb`s Head to Fast Castle SPA										
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)	X (c)

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Collision	Distributional response (displacement)	Distributional response (barrier effects)	Attraction to Light
	C	O	D	C	O	D	O	O	O	O
St Kilda SPA										
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Manx shearwater	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)
Leach's petrel	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)
Gannet	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	✓	✓	X (c)
Great skua	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	X (c)	X (c)	X (c)
Sule Skerry and Sule Stack SPA										
Storm petrel	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)
Leach's petrel	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)
Gannet	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	✓	X (c, f)
Puffin	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)
Sumburgh Head SPA										
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)	X (c, f)
Guillemot	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Collision	Distributional response (displacement)	Distributional response (barrier effects)	Attraction to Light
	C	O	D	C	O	D	O	O	O	O
The Shiant Isles SPA										
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)	X (c, f)
Puffin	X (a)	X (a)	X (a)	X (a, c, f)	X (a, c, f)	X (a, c, f)	X (a, c, f)	X (a)	X (a)	X (a, c, f)
Tips of Corsemaul and Tom Mor SPA										
Common gull	X (a, c)	X (a, c)	X (a, c)	X (a, c)	X (a, c)	X (a, c)	X (a)	X (a, c)	X (a, c)	X (a, c)
Treshnish Isles SPA										
Storm petrel	X (a, c, d)	X (a, c, d)	X (a, c, d)	X (a, c, d)	X (a, c, d)	X (a, c, d)	X (a, c, d)	X (a, c, d)	X (a, c, d)	X (a, d)
Troup, Pennan and Lion`s Heads SPA										
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)	X (c)
Guillemot	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)
Razorbill	✓	✓	✓	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)
Herring gull	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (c, d)	X (d)	X (c, d)	X (c, d)	X (c, d)
West Westray SPA										

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Collision	Distributional response (displacement)	Distributional response (barrier effects)	Attraction to Light
	C	O	D	C	O	D	O	O	O	O
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)	X (c)
Guillemot	✓	✓	✓	X (c)	X (c)	X (c)	X (c)	✓	✓	X (c)
Razorbill	✓	✓	✓	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓	✓	X (c, f)

Table 6.16: LSE matrix for SPAs in UK waters with marine ornithological features: ECC (supporting text to define a-g provided at the end)

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Attraction to light
	C	O	D	C	O	D	O
Ailsa Craig SPA							
Gannet	X (a, c, e, f)	X (a, c, e, f)	X (a, c, e, f)	X (a, c, e, f)	X (a, c, e, f)	X (a, c, e, f)	X (a, c, e, f)
Auskerry SPA							
Storm petrel	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Buchan Ness to Collieston Coast SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Herring gull	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Guillemot	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Shag	N/A	N/A	N/A	X (c)	X (c)	X (c)	X (c)
Calf of Eday SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Guillemot	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Canna and Sanday SPA							
Kittiwake	X (a, c)	X (a, c)	X (a, c)	X (a, c)	X (a, c)	X (a, c)	X (a, c)

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Attraction to light
	C	O	D	C	O	D	O
Cape Wrath SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Puffin	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Copeland Islands SPA							
Manx shearwater	X (c, g)	X (c, g)	X (c, g)	X (c, g)	X (c, g)	X (c, g)	X (c, g)
Copinsay SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Great black-backed gull	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Guillemot	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Coquet Island SPA							
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Puffin	N/A	N/A	N/A	X (c)	X (c)	X (c)	X (c)
East Caithness Cliffs SPA							
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Attraction to light
	C	O	D	C	O	D	O
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Razorbill	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Guillemot	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Herring gull	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Great black-backed gull	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Fair Isle SPA							
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Gannet	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Great skua	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Puffin	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Guillemot	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Razorbill	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Farne Islands SPA							
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Puffin	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Fetlar SPA							

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Attraction to light
	C	O	D	C	O	D	O
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Great skua	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Flamborough and Filey Coast SPA							
Gannet	X (c, e)	X (c, e)	X (c, e)	X (c, e)	X (c, e)	X (c, e)	X (c, e)
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Razorbill	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Flannan Isles SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Leach's petrel	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Kittiwake	N/A	N/A	N/A	X (a, c, f)	X (a, c, f)	X (a, c, f)	X (a, c, f)
Forth Islands SPA							
Gannet	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Lesser black-backed gull	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Puffin	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Foula SPA							
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Attraction to light
	C	O	D	C	O	D	O
Leach's petrel	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Great skua	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Puffin	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Fowlsheugh SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Herring gull	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Guillemot	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Razorbill	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Glannau Aberdaron ac Ynys Enlli/ Aberdaron Coast and Bardsey Island SPA							
Manx shearwater	X (c, g)	X (c, g)	X (c, g)	X (c, g)	X (c, g)	X (c, g)	X (c, g)
Handa SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Great skua	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Hermaness, Saxa Vord and Valla Field SPA							

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Attraction to light
	C	O	D	C	O	D	O
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Gannet	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Great skua	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Puffin	N/A	N/A	N/A	X (c)	X (c)	X (c)	X (c)
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Hoy SPA							
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Great skua	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Puffin	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Great black-backed gull	N/A	N/A	N/A	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Guillemot	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Irish Sea Front SPA							
Manx shearwater	X (b, c, g)	X (b, c, g)	X (b, c, g)	X (b, c, g)	X (b, c, g)	X (b, c, g)	X (b, c, g)
Isle of Scilly SPA							
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Manx shearwater	X (c, g)	X (c, g)	X (c, g)	X (c, g)	X (c, g)	X (c, g)	X (c, g)

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Attraction to light
	C	O	D	C	O	D	O
Loch of Strathbeg SPA and Ramsar							
Sandwich tern	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Whooper swan	N/A	N/A	N/A	✓	✓	✓	✓
Pink-footed goose	N/A	N/A	N/A	✓	✓	✓	✓
Greylag goose	N/A	N/A	N/A	✓	✓	✓	✓
Barnacle goose	N/A	N/A	N/A	✓	✓	✓	✓
Smew	N/A	N/A	N/A	✓	✓	✓	✓
Ruff	N/A	N/A	N/A	✓	✓	✓	✓
Greenshank	N/A	N/A	N/A	✓	✓	✓	✓
Teal	N/A	N/A	N/A	✓	✓	✓	✓
Goldeneye	N/A	N/A	N/A	✓	✓	✓	✓
Marwick Head SPA							
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Guillemot	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Mingulay and Berneray SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Moray Firth SPA							

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Attraction to light
	C	O	D	C	O	D	O
Shag	✓	✓	✓	X (c)	X (c)	X (c)	X (c)
Mousa SPA							
Storm petrel	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
North Caithness Cliffs SPA							
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Puffin	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Guillemot	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Razorbill	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
North Rona and Sula Sgeir SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Leach's petrel	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Gannet	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Storm petrel	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Puffin	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Northumberland Marine SPA							

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Attraction to light
	C	O	D	C	O	D	O
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Lesser black-backed gull	X (b, c)	X (b, c)	X (b, c)	X (b, c)	X (b, c)	X (b, c)	X (b, c)
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Puffin	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Noss SPA							
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Gannet	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Great skua	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Puffin	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Outer Firth of Forth and St Andrews Bay Complex SPA							
Manx shearwater	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Gannet	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Puffin	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Pentland Firth Islands SPA							
Arctic tern	N/A	N/A	N/A	X (c)	X (c)	X (c)	X (c)

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Attraction to light
	C	O	D	C	O	D	O
Ramna Stacks and Gruney SPA							
Leach's petrel	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Rathlin Island SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Ronas Hill - North Roe and Tingon SPA							
Great skua	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Rousay SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Guillemot	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Rum SPA							
Manx shearwater	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Kittiwake	X (a, c, f)	X (a, c, f)	X (a, c, f)	X (a, c, f)	X (a, c, f)	X (a, c, f)	X (a, c, f)
Seas off Foula SPA							
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Great skua	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Puffin	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Attraction to light
	C	O	D	C	O	D	O
Seas off St Kilda SPA							
Fulmar	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Storm petrel	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Gannet	X (c, e)	X (c, e)	X (c, e)	X (c, e)	X (c, e)	X (c, e)	X (c, e)
Skomer, Skokholm and the Seas off Pembrokeshire SPA							
Manx shearwater	X (c, g)	X (c, g)	X (c, g)	X (c, g)	X (c, g)	X (c, g)	X (c, g)
St Abb`s Head to Fast Castle SPA							
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
St Kilda SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Manx shearwater	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Leach’s petrel	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Gannet	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Great skua	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Sule Skerry and Sule Stack SPA							
Storm petrel	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓
Leach’s petrel	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	✓

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Attraction to light
	C	O	D	C	O	D	O
Gannet	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Puffin	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Sumburgh Head SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Guillemot	N/A	N/A	N/A	X (c)	X (c)	X (c)	X (c)
The Shiant Isles SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Puffin	X (a, c, f)	X (a, c, f)	X (a, c, f)	X (a, c, f)	X (a, c, f)	X (a, c, f)	X (a, c, f)
Tips of Corsemaul and Tom Mor SPA							
Common gull	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Treshnish Isles SPA							
Storm petrel	X (a, c)	X (a, c)	X (a, c)	X (a, c)	X (a, c)	X (a, c)	✓
Troup, Pennan and Lion`s Heads SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)

European site and relevant qualifying features	Direct temporary habitat loss/ disturbance			Indirect temporary habitat loss/ disturbance			Attraction to light
	C	O	D	C	O	D	O
Guillemot	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Razorbill	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Herring gull	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
West Westray SPA							
Fulmar	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	✓
Kittiwake	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Guillemot	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Razorbill	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)	X (c, f)
Ythan Estuary, Sands of Forvie and Meikle Loch							
Sandwich tern	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)	X (c)
Common tern	N/A	N/A	N/A	X (c)	X (c)	X (c)	X (c)

6.4.37 The HRA screening considered a number of pressures and identified LSEs relating to particular pressures only. **Table 6.17** sets out the relevant pressures, project phase and project aspect associated with each LSE. The conclusion on the potential for LSE confirms those sites and features that will progress forward for assessment.

Table 6.17: Description of Potential for LSEs and associated pressures

Protected Site	Distance from Project (most direct route via sea)[44]	Feature	Project Aspect	Project Phase	Pressures for which an potential LSE cannot be ruled out
Auskerry SPA	ECC: 80 km	Storm petrel	ECC	O&M	LSE for attraction to light
Buchan Ness to Collieston Coast SPA	Array: 97 km ECC: 32 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Fulmar	ECC	O&M	LSE for attraction to light
Calf of Eday SPA	Array: 74 km ECC: 102 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Guillemot	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement)
		Great black-backed gull	Array	O&M	LSE for collision
		Fulmar	ECC	O&M	LSE for attraction to light
Cape Wrath SPA	Array: 147 km ECC: 168 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Puffin	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Fulmar	ECC	O&M	LSE for attraction to light
Copinsay SPA	Array: 38 km	Fulmar	Array	C, O&M, D	LSE for attraction to light

[44] GIS maps were used to measure the most direct distance between the Protected Site and the Array/ECC via the sea (i.e., avoiding any land masses).

Protected Site	Distance from Project (most direct route via sea)[44]	Feature	Project Aspect	Project Phase	Pressures for which an potential LSE cannot be ruled out
	ECC: 65 km	Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Great black-backed gull	Array	O&M	LSE for collision
		Guillemot	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Fulmar	ECC	O&M	LSE for attraction to light
Coquet Island SPA	Array: 300 km ECC: 236 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Fulmar	ECC	O&M	LSE for attraction to light
East Caithness Cliffs SPA	Array: 46 km ECC: 54 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Razorbill	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Guillemot	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Great black-backed gull	Array	O&M	LSE for collision
		Fulmar	ECC	O&M	LSE for attraction to light
Fair Isle SPA	Array: 97 km ECC: 129 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Gannet	Array	O&M	LSE for distributional response (displacement and barrier effects) and collision
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Puffin	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)

Protected Site	Distance from Project (most direct route via sea)[44]	Feature	Project Aspect	Project Phase	Pressures for which an potential LSE cannot be ruled out
		Guillemot	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Razorbill	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Fulmar	ECC	O&M	LSE for attraction to light
Farne Islands SPA	Array: 300 km	Puffin	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance (non-breeding season only)
				O&M	LSE for distributional response (displacement and barrier effects (non-breeding season only))
Fetlar SPA	Array: 227 km ECC: 257 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Fulmar	ECC	O&M	LSE for attraction to light
Flamborough and Filey Coast SPA	Array: 472 km	Gannet	Array	O&M	LSE for distributional response (displacement and barrier effects) and collision
		Kittiwake	Array	O&M	LSE for distributional response (displacement) and collision (non-breeding season only)
		Razorbill	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance (non-breeding season only)
				O&M	LSE for distributional response (displacement and barrier effects) (non-breeding season only)
Flannan Isles SPA	Array: 311 km ECC: 334 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Fulmar	ECC	O&M	LSE for attraction to light
		Leach's petrel	ECC	O&M	LSE for attraction to light
Forth Islands SPA	Array: 250 km	Gannet	Array	O&M	LSE for distributional response (displacement and barrier effects) and collision
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)

Protected Site	Distance from Project (most direct route via sea)[44]	Feature	Project Aspect	Project Phase	Pressures for which an potential LSE cannot be ruled out
		Puffin	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
Foula SPA	Array: 160 km ECC: 192 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Puffin	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Razorbill	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for, distributional response (displacement and barrier effects)
		Fulmar	ECC	O&M	LSE for attraction to light
		Leach's petrel	ECC	O&M	LSE for attraction to light
Fowlsheugh SPA	Array: 165 km ECC: 96 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Razorbill	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance (non-breeding season only)
				O&M	LSE for, distributional response (displacement and barrier effects) (non-breeding season only)
		Fulmar	ECC	C, O&M, D	LSE for attraction to light
Handa SPA	Array: 186 km ECC: 208 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Fulmar	ECC	O&M	LSE for attraction to light
Hermaness, Saxa Vord and Valla Field SPA	Array: 260 km ECC: 287 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Gannet	Array	O&M	LSE for distributional response (displacement and barrier effects) and collision

Protected Site	Distance from Project (most direct route via sea)[44]	Feature	Project Aspect	Project Phase	Pressures for which an potential LSE cannot be ruled out
		Puffin	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Fulmar	ECC	O&M	LSE for attraction to light
Hoy SPA	Array: 58 ECC: 80	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Puffin	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Great black-backed gull	Array	O&M	LSE for collision
		Guillemot	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
			Array	O&M	LSE for distributional response (displacement and barrier effects)
		Fulmar	ECC	C, O&M, D	LSE for attraction to light
Isles of Scilly SPA	Array: 1,457 km ECC: 1,394 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Fulmar	ECC	O&M	LSE for attraction to light
Loch of Strathbeg SPA and Ramsar	ECC: 9 km	Whooper swan	ECC	C, O&M, D	LSE for indirect temporary habitat loss/ disturbance
				O&M	LSE for attraction to light
		Pink-footed goose	ECC	C, O&M, D	LSE for indirect temporary habitat loss/ disturbance
				O&M	LSE for attraction to light
		Greylag goose	ECC	C, O&M, D	LSE for indirect temporary habitat loss/ disturbance
				O&M	LSE for attraction to light
		Barnacle goose	ECC	C, O&M, D	LSE for indirect temporary habitat loss/ disturbance

Protected Site	Distance from Project (most direct route via sea)[44]	Feature	Project Aspect	Project Phase	Pressures for which an potential LSE cannot be ruled out
				O&M	LSE for attraction to light
		Smew (Ramsar only)	ECC	C, O&M, D	LSE for indirect temporary habitat loss/ disturbance
				O&M	LSE for attraction to light
		Ruff (Ramsar only)	ECC	C, O&M, D	LSE for indirect temporary habitat loss/ disturbance
				O&M	LSE for attraction to light
		Greenshank (Ramsar only)	ECC	C, O&M, D	LSE for indirect temporary habitat loss/ disturbance
				O&M	LSE for attraction to light
		Teal (SPA only)	ECC	C, O&M, D	LSE for indirect temporary habitat loss/ disturbance
				O&M	LSE for attraction to light
		Goldeneye (SPA only)	ECC	C, O&M, D	LSE for indirect temporary habitat loss/ disturbance
				O&M	LSE for attraction to light
Marwick Head SPA	Array: 98 km	Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Guillemot	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
Mingulay and Berneray SPA	Array: 411 km ECC: 440 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Fulmar	ECC	O&M	LSE for attraction to light
Moray Firth SPA	ECC: 69 km	Shag	ECC	C, O&M, D	LSE for direct temporary habitat loss/disturbance
North Caithness Cliffs SPA	Array: 40 km ECC: 60 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Puffin	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
			Array	O&M	LSE for distributional response (displacement and barrier effects)
		Guillemot	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance

Protected Site	Distance from Project (most direct route via sea)[44]	Feature	Project Aspect	Project Phase	Pressures for which an potential LSE cannot be ruled out
			Array	O&M	LSE for distributional response (displacement and barrier effects)
		Razorbill	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
			Array	O&M	LSE for distributional response (displacement and barrier effects)
		Fulmar	ECC	O&M	LSE for attraction to light
North Rona and Sula Sgeir SPA	Array: 208 km ECC: 231 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Gannet	Array	O&M	LSE for collision, distributional response (displacement and barrier effects)
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Puffin	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
			Array	O&M	LSE for distributional response (displacement and barrier effects)
		Fulmar	ECC	O&M	LSE for attraction to light
		Leach's petrel	ECC	O&M	LSE for attraction to light
		Storm petrel	ECC	O&M	LSE for attraction to light
Northumberland Marine SPA	Array: 307 km ECC: 244 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Fulmar	ECC	O&M	LSE for attraction to light
Noss SPA	Array: 175 km ECC: 201 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Gannet	Array	O&M	LSE for distributional response (displacement and barrier effects) and collision
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Puffin	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Fulmar	ECC	O&M	LSE for attraction to light

Protected Site	Distance from Project (most direct route via sea)[44]	Feature	Project Aspect	Project Phase	Pressures for which an potential LSE cannot be ruled out
Outer Firth of Forth and St Andrews Bay Complex SPA	Array: 221 km	Gannet	Array	O&M	LSE for distributional response (displacement and barrier effects) and collision
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Puffin	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
Pentland Firth Islands SPA	Array: 38 km	Arctic tern	Array	O&M	LSE for collision
Ramna Stacks and Gruney SPA	ECC: 269 km	Leach's petrel	ECC	O&M	LSE for attraction to light
Rathlin Island SPA	Array: 589 km ECC: 609 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Fulmar	ECC	O&M	LSE for attraction to light
Rousay SPA	Array: 77 km ECC: 106 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Guillemot	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Fulmar	ECC	O&M	LSE for attraction to light
Seas off Foula SPA	Array: 134 km ECC: 166 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Puffin	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Fulmar	ECC	O&M	LSE for attraction to light
Seas off St Kilda SPA	Array: 314 km ECC: 335 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Gannet	Array	O&M	LSE for distributional response (displacement and barrier effects) and collision
		Fulmar	ECC	O&M	LSE for attraction to light
		Storm petrel	ECC	O&M	LSE for attraction to light

Protected Site	Distance from Project (most direct route via sea)[44]	Feature	Project Aspect	Project Phase	Pressures for which an potential LSE cannot be ruled out
St Abb`s Head to Fast Castle SPA	Array: 274 km	Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
St Kilda SPA	Array: 382 km ECC: 403 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Gannet	Array	O&M	LSE for distributional response (displacement and barrier effects) and collision
		Fulmar	ECC	O&M	LSE for attraction to light
		Leach's petrel	ECC	O&M	LSE for attraction to light
Sule Skerry and Sule Stack SPA	Array: 130 km ECC: 153 km	Gannet	Array	O&M	LSE for distributional response (displacement and barrier effects) and collision
		Puffin	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Storm petrel	ECC	O&M	LSE for attraction to light
		Leach's petrel	ECC	O&M	LSE for attraction to light
Sumburgh Head SPA	Array: 140 km ECC: 169 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Guillemot	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Fulmar	ECC	O&M	LSE for attraction to light
The Shiant Isles SPA	Array: 266 km ECC: 286 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Fulmar	ECC	O&M	LSE for attraction to light
Treshnish Isles SPA	ECC: 465 km	Storm petrel	ECC	O&M	LSE for attraction to light
	Array: 70 km	Fulmar	Array	C, O&M, D	LSE for attraction to light

Protected Site	Distance from Project (most direct route via sea)[44]	Feature	Project Aspect	Project Phase	Pressures for which an potential LSE cannot be ruled out
Troup, Pennan and Lion`s Heads SPA	ECC: 1 km	Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Guillemot	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Razorbill	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Fulmar	ECC	O&M	LSE for attraction to light
West Westray SPA	Array: 85 km ECC: 113 km	Fulmar	Array	C, O&M, D	LSE for attraction to light
		Kittiwake	Array	O&M	LSE for collision and distributional response (displacement)
		Guillemot	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Razorbill	Array	C, O&M, D	LSE for direct temporary habitat loss/disturbance
				O&M	LSE for distributional response (displacement and barrier effects)
		Fulmar	ECC	O&M	LSE for attraction to light

6.4.38 The location of the site where potential for LSE has been identified in **Table 6.13** relative to the location of the Project is shown in **Figure 6.2**

Legend

- Offshore Array Area
- Offshore Export Cable Corridor
- Offshore Project Boundary
- Special Protection Areas/Ramsar Sites

Rev	Description	Date
01	Screening Report	20/07/2023
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Stromar
Protected Areas Screened In for Offshore Ornithology

Coordinate System: ETRS 1989 UTM Zone 30N
Vertical Datum : LAT Scale @ A4 : 1:3,800,000
0 50 100 150 Kilometers
0 20 40 60 80 Nautical Miles

Document No : 81400184_007
Created by : JOSW
Checked by : SAKZ
Approved by : SAKZ

NIRAS STROMAR

Name: StromarTest User: JOSW Date: 21/07/2023

Figure 6.2: Protected Areas Screened In for Offshore Ornithology

6.5 Migratory Fish and Freshwater Pearl Mussel

6.5.1 The protected sites and features where potential for connectivity has been identified for migratory fish and FWPM are summarised in **Table 6.18**, including the relevant pressures, project phase and project aspect. That process takes account of the mobile nature of the species and the ZoI of the Project. The consideration of the potential for LSE made here also takes account of recent NatureScot advice on multiple projects (for example as specified in the Scoping Opinions for Salamander[45] and MarramWind[46]), and as confirmed at the Scoping Workshop (**Table 3.1**) whereby it is considered that the lack of data on migratory fish at sea mean it would not be possible to identify potential connectivity between individual fish at sea and specific SACs (with fish at sea to be addressed through the EIA). The potential for LSE therefore takes account of the boundary of the SAC and the potential for connectivity to that.

6.5.2 The maximum relevant ZoI with potential for connectivity to a SAC boundary is for underwater noise, with a precautionary distance of 50 km applied for underwater noise (with other pressures within 15 km, to reflect an appropriate ZoI). That distance for underwater noise is intended to encompass the maximum range of relevant underwater noise contours that may result in a behavioural response from migratory fish (e.g. startle, disruption of feeding, avoidance of an area) and is greater than the 10-20 km (disturbance) established through modelling at Berwick Bank [47], the <5 km (temporary threshold shift, TTS) at Green Volt [48] and the <19 km (TTS) at Pentland [49]. The 50 km range to establish potential connectivity directly to a SAC boundary is therefore deemed precautionary (but will be confirmed once site specific modelling has been undertaken).

6.5.3 The conclusion on the potential for LSE in **Table 6.18** confirms those sites and features that will progress forward for assessment (noting that the distances provided are measured in a straight line and do not account for terrain).

Table 6.18: Sites and Features where potential for LSE exists for Migratory Fish and FWPM

Protected Site	Distance from Project	Feature	Project Aspect	Project Phase	Pressure	Determination of LSE
Rannoch Moor SAC	ECC: 182 km	Freshwater pearl mussel	ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	No LSE
				O&M	EMF	
River Borgie SAC	Array: 115 km ECC: 123 km	Freshwater pearl mussel	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	No LSE

[45] https://marine.gov.scot/sites/default/files/appendix_i_-_consultation_representations_and_advice_5.pdf

[46] https://marine.gov.scot/sites/default/files/appendix_i_-_consultation_responses_advice_0.pdf

[47] https://marine.gov.scot/sites/default/files/eor0766_berwick_bank_wind_farm_-_riaa_-_part_2_-_sac_assessments.pdf

[48] https://marine.gov.scot/sites/default/files/232cfe1.pdf

[49] https://marine.gov.scot/sites/default/files/chapter_10._fish_and_shellfish_ecology.pdf

Protected Site	Distance from Project	Feature	Project Aspect	Project Phase	Pressure	Determination of LSE
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
		Atlantic salmon	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
Foinaven SAC	Array: 144 km ECC: 151 km	Freshwater pearl mussel	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	No LSE
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
River Spey SAC	Array: 98 km ECC: 49 km	Freshwater pearl mussel	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	No LSE
				O&M	EMF Entanglement	

Protected Site	Distance from Project	Feature	Project Aspect	Project Phase	Pressure	Determination of LSE
			ECC	C, O&M, D	Underwater Noise	The distance between the ECC and the SAC is on the edge of the highly precautionary screening range. Following discussion at the Scoping Workshop (**Table 3.1**) the site has been screened out on the expectation that project specific underwater noise modelling will confirm relevant noise contours to be significantly less than 50 km. Should that not be the case, the screening decision will be revisited. No LSE
					Toxic Contamination Suspended Sediments	No LSE
				O&M	EMF	
		Sea lamprey	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	No LSE
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise	Potential for LSE
					Toxic Contamination Suspended Sediments	No LSE
				O&M	EMF	
		Atlantic salmon	Array	C, O&M, D	Underwater Noise	No LSE
					Toxic Contamination Suspended Sediments	
				O&M	EMF Entanglement	
			ECC		Underwater Noise	Potential for LSE

Protected Site	Distance from Project	Feature	Project Aspect	Project Phase	Pressure	Determination of LSE
				C, O&M, D	Toxic Contamination Suspended Sediments	No LSE
				O&M	EMF	
Abhainn Clais an Eas and Allt a' Mhuilinn SAC	Array: 180 km ECC: 178 km	Freshwater pearl mussel	Array	C, O&M, D	Underwater Noise	No LSE
					Toxic Contamination Suspended Sediments	
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise	
					Toxic Contamination Suspended Sediments	
				O&M	EMF	
Berriedale and Langwell Waters SAC	Array: 80 km ECC: 77 km	Atlantic salmon	Array	C, O&M, D	Underwater Noise	No LSE
					Toxic Contamination Suspended Sediments	
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise	
					Toxic Contamination Suspended Sediments	
				O&M	EMF	
Inverpolly SAC	Array: 170 km ECC: 165 km	Freshwater pearl mussel	Array	C, O&M, D	Underwater Noise	No LSE
					Toxic Contamination Suspended Sediments	
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise	
					Toxic Contamination Suspended Sediments	
				O&M	EMF	
	ECC: 183 km		ECC		Underwater Noise	No LSE

Protected Site	Distance from Project	Feature	Project Aspect	Project Phase	Pressure	Determination of LSE
Little Gruinard River SAC		Atlantic salmon		C, O&M, D	Toxic Contamination Suspended Sediments	
				O&M	EMF	
Ardvar and Loch a' Mhuilinn Woodlands SAC	Array: 164 km ECC: 167 km	Freshwater pearl mussel	Array	C, O&M, D	Underwater Noise	No LSE
					Toxic Contamination Suspended Sediments	
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
River Dee SAC	Array: 139 km ECC: 61 km	Freshwater pearl mussel	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	No LSE
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
		Atlantic salmon	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
River Evelix SAC	Array: 126 km ECC: 108 km	Freshwater pearl mussel	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	No LSE

Protected Site	Distance from Project	Feature	Project Aspect	Project Phase	Pressure	Determination of LSE
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
River Morriston SAC	Array: 196 km ECC: 152 km	Freshwater pearl mussel	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	No LSE
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
		Atlantic salmon	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O	EMF	
River Naver SAC	Array: 108 km ECC: 115 km	Freshwater pearl mussel	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	No LSE
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	

Protected Site	Distance from Project	Feature	Project Aspect	Project Phase	Pressure	Determination of LSE
		Atlantic salmon	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
River Oykel SAC	Array: 140 km ECC: 124 km	Freshwater pearl mussel	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	No LSE
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
		Atlantic salmon	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
River South Esk SAC	Array: 178 km ECC: 108 km	Freshwater pearl mussel	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	No LSE
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	

Protected Site	Distance from Project	Feature	Project Aspect	Project Phase	Pressure	Determination of LSE
				O&M	EMF	
		Atlantic salmon	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
River Teith SAC	ECC: 198 km	Sea lamprey	ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	No LSE
				O&M	EMF	
		River lamprey	ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
		Atlantic salmon	ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
River Thurso SAC	Array: 68 km ECC: 73 km	Atlantic salmon	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	No LSE
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
River Tay SAC	Array: 185 km ECC: 117 km	Sea lamprey	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	No LSE

Protected Site	Distance from Project	Feature	Project Aspect	Project Phase	Pressure	Determination of LSE
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
		River lamprey	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	
		Atlantic salmon	Array	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF Entanglement	
			ECC	C, O&M, D	Underwater Noise Toxic Contamination Suspended Sediments	
				O&M	EMF	

6.5.4 The location of the site where potential for LSE has been identified in **Table 6.18** relative to the location of the Project is shown in **Figure 6.3**

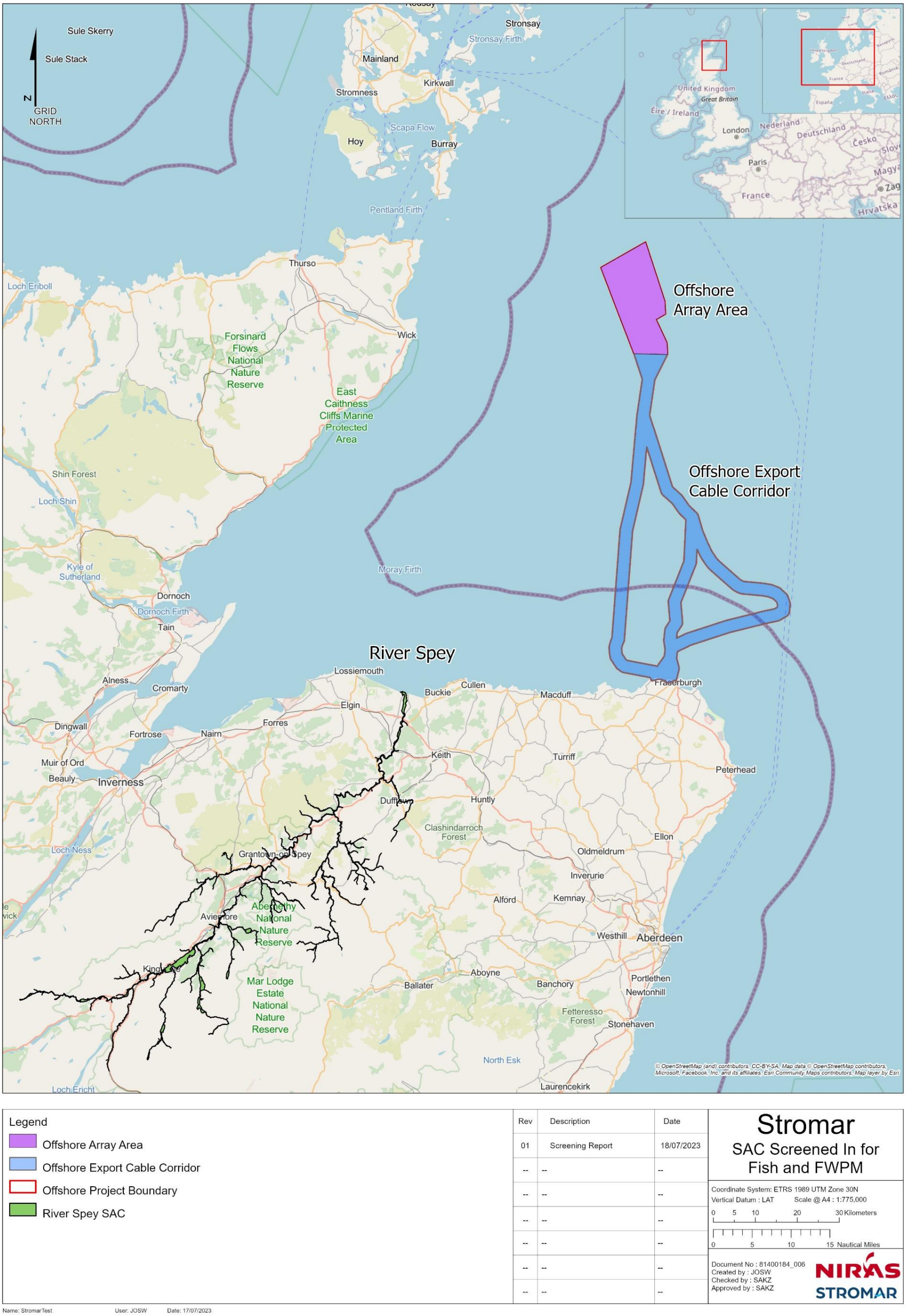

Figure 6.3: SAC Screened In for Fish and FWPM

7 Screening In-Combination

7.1 Introduction

7.1.1 Where the screening for the Project alone has identified a potential for LSE, then it will be assumed that there is potential for the Project alone to contribute to an in-combination LSE. However, it should be noted that given the precautionary nature of screening, it is possible for some sites/features screened in for potential LSE for the Project alone to be found to have no pathway/connectivity in assessment and therefore no potential for the project to contribute to any in-combination effect. In addition, should the Project alone be found to have a de minimis level of effect, the potential to contribute to an in-combination impact will be considered on a de minimis basis. Finally, for an in-combination effect to result to a specific protected site and feature, there needs to be a plan or project acting in-combination.

7.1.2 The in-combination assessment will therefore assess the potential for the Project to contribute to an in-combination effect where:

- The potential impact from the Project is greater than zero (noting that a de minimis effect should be considered trivial and inconsequential); and
- There is a plan or project to act in-combination.

7.1.3 As is standard for in-combination assessments for offshore wind, a tiered approach to plans and projects in-combination will be applied, to take account of plan and project certainty (for example a project in early stages of planning compared to a project with consent) and the level of detail available (for example a project at Scoping would not have quantitative numbers to include in-combination). How plans and projects are assigned to tiers will be defined on a receptor group basis. Where an impact is temporally limited (e.g., underwater noise) this will also be a consideration in the assessment. To ensure a ‘whole project’ approach is taken to the in-combination assessment, the first tier will include the Project onshore and the Project offshore, with a summary of relevant onshore impacts (if any) to be included for reference. Wider plans and projects would be incorporated into subsequent tiers.

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Appendix A: Metadata for the Designated Site Boundary Files

Data	Date Created	Raw Source File Name	Source Data Owner	Source	Download Date
SPA	29/04/2022	GB_SPA_OSGB36_20210209 Special protection areas BNG	JNCC DAERA	http://jncc.defra.gov.uk/protectedsites/SACselection/gis_data/terms_conditions.asp https://www.daera-ni.gov.uk/publications/special-protection-areas-digital-datasets	24/01/2023
SAC	10/03/2021	c20201214 offshoreMPA_WG84 SAC-GB-OSGB-20191031 SAC_NI_TM65-20191031	JNCC	JNCC https://hub.jncc.gov.uk/assets/52b4e00d-798e-4fbe-a6ca-2c5735ddf049 https://hub.jncc.gov.uk/assets/52b4e00d-798e-4fbe-a6ca-2c5735ddf049	24/11/2022
Ramsar	12/07/2019	UK-RAMSAR-BNG-20210308	JNCC	http://archive.jncc.gov.uk/default.aspx?page=2392	24/11/2022

Appendix B: Screening Results for Offshore and Intertidal Ornithology

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9003091	Ailsa Craig	Breeding seabirds in the breeding season	Gannet	A016	Array ECC	No LSE	N/A
UK9002381	Auskerry	Breeding seabirds in the breeding season	Storm petrel	A014	Array ECC	Potential for LSE - Array only	Attraction to light (O&M)
UK9002381	Auskerry	Breeding seabirds in the breeding season	Arctic tern	A194	Array	No LSE	N/A
UK9002491	Buchan Ness to Collieston Coast	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)
UK9002491	Buchan Ness to Collieston Coast	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE - Array only	Collision; distributional response (displacement) (O&M)
UK9002491	Buchan Ness to Collieston Coast	Breeding seabirds in the breeding season	Common guillemot	A199	Array ECC	No LSE	N/A
UK9002491	Buchan Ness to Collieston Coast	Breeding seabirds in the breeding season	Herring gull	A184	ECC	No LSE	N/A
UK9002491	Buchan Ness to Collieston Coast	Breeding seabirds in the breeding season	Shag	A018	ECC	No LSE	N/A
UK9002431	Calf of Eday	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9002431	Calf of Eday	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE - Array only	Collision; distributional response (displacement) (O&M)
UK9002431	Calf of Eday	Breeding seabirds in the breeding season	Common guillemot	A199	Array ECC	Potential for LSE - Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement) (O&M)
UK9002431	Calf of Eday	Breeding seabirds in the breeding season	Great black-backed gull	A187	Array	Potential for LSE – Array only	Collision (O&M)
UK9001431	Canna and Sanday	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	No LSE	N/A
UK9001231	Cape Wrath	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE – Array	Attraction to light (C, O&M, D)
						Potential for LSE – ECC	Attraction to light (O&M)
UK9001231	Cape Wrath	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)
UK9001231	Cape Wrath	Breeding seabirds in the breeding season	Puffin	A204	Array ECC	Potential for LSE - Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9020291	Copeland Islands	Breeding seabirds in the breeding season	Manx shearwater	A013	Array ECC	No LSE	N/A

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9002151	Copinsay	Breeding seabirds in the breeding season	Fulmar	A009	Array	Potential for LSE - Array	Attraction to light (C, O&M, D)
					ECC	Potential for LSE - ECC	Attraction to light (O&M)
UK9002151	Copinsay	Breeding seabirds in the breeding season	Great black-backed gull	A187	Array ECC	Potential for LSE - Array only	Collision (O&M)
UK9002151	Copinsay	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE - Array only	Collision; distributional response (displacement) (O&M)
UK9002151	Copinsay	Breeding seabirds in the breeding season	Common guillemot	A199	Array ECC	Potential for LSE - Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9006031	Coquet Island	Breeding seabirds in the breeding season	Fulmar	A009	Array	Potential for LSE - Array	Attraction to light (C, O&M, D)
					ECC	Potential for LSE - ECC	Attraction to light (O&M)
UK9006031	Coquet Island	Breeding seabirds in the breeding season	Kittiwake	A188	ECC	No LSE	N/A
UK9006031	Coquet Island	Breeding seabirds in the breeding season	Puffin	A204	ECC	No LSE	N/A
UK9001182	East Caithness Cliffs	Breeding seabirds in the breeding season	Fulmar	A009	Array	Potential for LSE - Array	Attraction to light (C, O&M, D)
					ECC	Potential for LSE - ECC	Attraction to light (O&M)
UK9001182	East Caithness Cliffs	Breeding seabirds in the breeding season	Herring gull	A184	Array ECC	No LSE	N/A

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9001182	East Caithness Cliffs	Breeding seabirds in the breeding season	Great black-backed gull	A187	Array ECC	Potential for LSE – Array only	Collision (O&M)
UK9001182	East Caithness Cliffs	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)
UK9001182	East Caithness Cliffs	Breeding seabirds in the breeding season	Common guillemot	A199	Array ECC	Potential for LSE - Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9001182	East Caithness Cliffs	Breeding seabirds in the breeding season	Razorbill	A200	Array ECC	Potential for LSE - Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9001182	East Caithness Cliffs	Breeding seabirds in the breeding season	Cormorant	A107	Array	No LSE	N/A
UK9002091	Fair Isle	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)
UK9002091	Fair Isle	Breeding seabirds in the breeding season	Gannet	A016	Array ECC	Potential for LSE - Array only	Distributional response (displacement and barrier effects); collision (O&M)
UK9002091	Fair Isle	Breeding seabirds in the breeding season	Great skua	A175	Array ECC	No LSE	N/A

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9002091	Fair Isle	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)
UK9002091	Fair Isle	Breeding seabirds in the breeding season	Common guillemot	A199	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9002091	Fair Isle	Breeding seabirds in the breeding season	Razorbill	A200	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9002091	Fair Isle	Breeding seabirds in the breeding season	Puffin	A204	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9006021	Farne Islands	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	No LSE	N/A
UK9006021	Farne Islands	Breeding seabirds in the breeding season	Puffin	A204	ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9002031	Fetlar		Fulmar	A009	Array	Potential for LSE - Array	Attraction to light (C, O&M, D)

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
		Breeding seabirds in the breeding season			ECC	Potential for LSE - ECC	Attraction to light (O&M)
UK9002031	Fetlar	Breeding seabirds in the breeding season	Great skua	A175	Array ECC	No LSE	N/A
UK9006101	Flamborough & Filey Coast	Breeding seabirds in the breeding season	Gannet	A016	Array ECC	Potential for LSE – Array only	Distributional response (displacement and barrier effects); collision (O&M)
UK9001021	Flannan Isles	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)
UK9001021	Flannan Isles	Breeding seabirds in the breeding season	Leach's petrel	A015	Array ECC	Potential for LSE – Array only	Attraction to light (O&M)
UK9001021	Flannan Isles	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	No LSE	N/A
UK9004171	Forth Islands	Breeding seabirds in the breeding season	Gannet	A016	Array ECC	Potential for LSE – Array only	Distributional response (displacement and barrier effects); collision (O&M)
UK9004171	Forth Islands	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)
UK9004171	Forth Islands	Breeding seabirds in the breeding season	Puffin	A204	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9004171	Forth Islands	Breeding seabirds in the breeding season	Lesser black-backed gull	A183	Array ECC	No LSE	N/A
UK9002061	Foula	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)
UK9002061	Foula	Breeding seabirds in the breeding season	Leach's petrel	A015	Array ECC	Potential for LSE – ECC only	Attraction to light (O&M)
UK9002061	Foula	Breeding seabirds in the breeding season	Great skua	A175	Array ECC	No LSE	N/A
UK9002061	Foula	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)
UK9002061	Foula	Breeding seabirds in the breeding season	Puffin	A204	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9002061	Foula	Breeding seabirds in the breeding season	Razorbill	A200	Array	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9002061	Foula	Breeding seabirds in the breeding season	Common guillemot	A199	Array	No LSE	N/A

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9002271	Fowlsheugh	Breeding seabirds in the breeding season	Fulmar	A009	Array	Potential for LSE - Array	Attraction to light (C, O&M, D)
					ECC	Potential for LSE - ECC	Attraction to light (O&M)
UK9002271	Fowlsheugh	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)
UK9002271	Fowlsheugh	Breeding seabirds in the breeding season	Common guillemot	A199	ECC	No LSE	N/A
UK9002271	Fowlsheugh	Breeding seabirds in the breeding season	Razorbill	A200	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9002271	Fowlsheugh	Breeding seabirds in the breeding season	Herring gull	A184	ECC	No LSE	N/A
UK9013121	Glannau Aberdaron ac Ynys Enlli/ Aberdaron Coast and Bardsey Island	Breeding seabirds in the breeding season	Manx shearwater	A013	Array ECC	No LSE	N/A
UK9001241	Handa	Breeding seabirds in the breeding season	Fulmar	A009	Array	Potential for LSE - Array	Attraction to light (C, O&M, D)
					ECC	Potential for LSE - ECC	Attraction to light (O&M)
UK9001241	Handa	Breeding seabirds in the breeding season	Great skua	A175	Array ECC	No LSE	N/A
UK9001241	Handa	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9002011	Hermaness, Saxa Vord and Valla Field	Breeding seabirds in the breeding season	Fulmar	A009	Array	Potential for LSE – Array	Attraction to light (C, O&M, D)
					ECC	Potential for LSE – ECC	Attraction to light (O&M)
UK9002011	Hermaness, Saxa Vord and Valla Field	Breeding seabirds in the breeding season	Gannet	A016	Array ECC	Potential for LSE – Array only	Distributional response (displacement and barrier effects); collision (O&M)
UK9002011	Hermaness, Saxa Vord and Valla Field	Breeding seabirds in the breeding season	Great skua	A175	Array ECC	No LSE	N/A
UK9002011	Hermaness, Saxa Vord and Valla Field	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)
UK9002011	Hermaness, Saxa Vord and Valla Field	Breeding seabirds in the breeding season	Puffin	A204	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9002141	Hoy	Breeding seabirds in the breeding season	Fulmar	A009	Array	Potential for LSE - Array	Attraction to light (C, O&M, D)
					ECC	Potential for LSE - ECC	Attraction to light (O&M)
UK9002141	Hoy	Breeding seabirds in the breeding season	Great skua	A175	Array ECC	No LSE	N/A
UK9002141	Hoy	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9002141	Hoy	Breeding seabirds in the breeding season	Common guillemot	A199	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9002141	Hoy	Breeding seabirds in the breeding season	Puffin	A204	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9002141	Hoy	Breeding seabirds in the breeding season	Great black-backed gull	A187	Array ECC	Potential for LSE – Array only	Collision (O&M)
UK9020328	Irish Sea Front	Breeding seabirds in the breeding season	Manx shearwater	A013	Array ECC	No LSE	N/A
UK9020288	Isles of Scilly	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)
UK9020288	Isles of Scilly	Breeding seabirds in the breeding season	Manx shearwater	A013	Array ECC	No LSE	N/A
UK13041	Loch of Strathbeg Ramsar	Terrestrial bird	Whooper swan	A038	ECC	Potential for LSE – ECC only	Indirect temporary habitat loss/disturbance (C, O&M, D) Attraction to light (O&M)
UK13041	Loch of Strathbeg Ramsar	Terrestrial bird	Pink-footed goose	A040	ECC	Potential for LSE – ECC only	Indirect temporary habitat loss/disturbance (C, O&M, D)

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
							Attraction to light (O&M)
UK13041	Loch of Strathbeg Ramsar	Terrestrial bird	Greylag goose	A043	ECC	Potential for LSE – ECC only	Indirect temporary habitat loss/disturbance (C, O&M, D) Attraction to light (O&M)
UK13041	Loch of Strathbeg Ramsar	Terrestrial bird	Barnacle goose	A045	ECC	Potential for LSE – ECC only	Indirect temporary habitat loss/disturbance (C, O&M, D) Attraction to light (O&M)
UK13041	Loch of Strathbeg Ramsar	Terrestrial bird	Smew	A068	ECC	Potential for LSE – ECC only	Indirect temporary habitat loss/disturbance (C, O&M, D) Attraction to light (O&M)
UK13041	Loch of Strathbeg Ramsar	Terrestrial bird	Ruff	A151	ECC	Potential for LSE – ECC only	Indirect temporary habitat loss/disturbance (C, O&M, D) Attraction to light (O&M)
UK13041	Loch of Strathbeg Ramsar	Terrestrial bird	Greenshank	A164	ECC	Potential for LSE – ECC only	Indirect temporary habitat loss/disturbance (C, O&M, D) Attraction to light (O&M)
UK9002211	Loch of Strathbeg SPA	Breeding seabirds in the breeding season	Sandwich tern	A191	ECC	No LSE	N/A
UK9002211	Loch of Strathbeg SPA	Terrestrial bird	Whooper swan	A038	ECC	Potential for LSE – ECC only	Indirect temporary habitat loss/disturbance (C, O&M, D) Attraction to light (O&M)
UK9002211	Loch of Strathbeg SPA	Terrestrial bird	Pink-footed goose	A040	ECC	Potential for LSE – ECC only	Indirect temporary habitat loss/disturbance (C, O&M, D)

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
							Attraction to light (O&M)
UK9002211	Loch of Strathbeg SPA	Terrestrial bird	Greylag goose	A043	ECC	Potential for LSE – ECC only	Indirect temporary habitat loss/disturbance (C, O&M, D) Attraction to light (O&M)
UK9002211	Loch of Strathbeg SPA	Terrestrial bird	Barnacle goose	A045	ECC	Potential for LSE – ECC only	Indirect temporary habitat loss/disturbance (C, O&M, D) Attraction to light (O&M)
UK9002211	Loch of Strathbeg SPA	Terrestrial bird	Teal	A052	ECC	Potential for LSE – ECC only	Indirect temporary habitat loss/disturbance (C, O&M, D) Attraction to light (O&M)
UK9002211	Loch of Strathbeg SPA	Terrestrial bird	Goldeneye	A067	ECC	Potential for LSE – ECC only	Indirect temporary habitat loss/disturbance (C, O&M, D) Attraction to light (O&M)
UK9002121	Marwick Head	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)
UK9002121	Marwick Head	Breeding seabirds in the breeding season	Common guillemot	A199	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9001121	Mingulay and Berneray	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9020313	Moray Firth	Breeding seabirds in the breeding season	Shag	A018	ECC	Potential for LSE – ECC only	Direct temporary habitat loss/disturbance (C, O&M, D)
UK9002361	Mousa	Breeding seabirds in the breeding season	Storm petrel	A014	Array ECC	No LSE	N/A
UK9001181	North Caithness Cliffs	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)
UK9001181	North Caithness Cliffs	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)
UK9001181	North Caithness Cliffs	Breeding seabirds in the breeding season	Common guillemot	A199	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9001181	North Caithness Cliffs	Breeding seabirds in the breeding season	Razorbill	A200	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9001181	North Caithness Cliffs	Breeding seabirds in the breeding season	Puffin	A204	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9001011			Fulmar	A009	Array	Potential for LSE - Array	Attraction to light (C, O&M, D)

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
	North Rona and Sula Sgeir	Breeding seabirds in the breeding season			ECC	Potential for LSE - ECC	Attraction to light (O&M)
UK9001011	North Rona and Sula Sgeir	Breeding seabirds in the breeding season	Storm petrel	A014	Array ECC	Potential for LSE - ECC	Attraction to light (O&M)
UK9001011	North Rona and Sula Sgeir	Breeding seabirds in the breeding season	Leach's petrel	A015	Array ECC	Potential for LSE - ECC	Attraction to light (O&M)
UK9001011	North Rona and Sula Sgeir	Breeding seabirds in the breeding season	Gannet	A016	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement and barrier effects) (O&M)
UK9001011	North Rona and Sula Sgeir	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)
UK9001011	North Rona and Sula Sgeir	Breeding seabirds in the breeding season	Puffin	A204	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9020325	Northumberland Marine	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)
UK9020325	Northumberland Marine	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	No LSE	N/A
UK9020325	Northumberland Marine	Breeding seabirds in the breeding season	Lesser black-backed gull	A183	ECC	No LSE	N/A

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9020325	Northumberland Marine	Breeding seabirds in the breeding season	Puffin	A204	ECC	No LSE	N/A
UK9002081	Noss	Breeding seabirds in the breeding season	Fulmar	A009	Array	Potential for LSE - Array	Attraction to light (C, O&M, D)
					ECC	Potential for LSE - ECC	Attraction to light (O&M)
UK9002081	Noss	Breeding seabirds in the breeding season	Gannet	A016	Array ECC	Potential for LSE – Array only	Distributional response (displacement and barrier effects); collision (O&M)
UK9002081	Noss	Breeding seabirds in the breeding season	Great skua	A175	Array ECC	No LSE	N/A
UK9002081	Noss	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)
UK9002081	Noss	Breeding seabirds in the breeding season	Puffin	A204	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9020316	Outer Firth of Forth and St Andrews Bay Complex	Breeding seabirds in the breeding season	Manx shearwater	A013	Array ECC	No LSE	N/A
UK9020316	Outer Firth of Forth and St Andrews Bay Complex	Breeding seabirds in the breeding season	Gannet	A016	Array ECC	Potential for LSE – Array only	Distributional response (displacement and barrier effects); collision(O&M)
UK9020316	Outer Firth of Forth and St Andrews Bay Complex	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9020316	Outer Firth of Forth and St Andrews Bay Complex	Breeding seabirds in the breeding season	Puffin	A204	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9001131	Pentland Firth Islands	Breeding seabirds in the breeding season	Arctic tern	A194	Array ECC	Potential for LSE – Array only	Collision (O&M)
UK9002021	Ramna Stacks and Gruney	Breeding seabirds in the breeding season	Leach's petrel	A015	Array ECC	Potential for LSE – ECC only	Attraction to light
UK9020011	Rathlin Island	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)
UK9002041	Ronas Hill - North Roe and Tingon	Breeding seabirds in the breeding season	Great skua	A175	Array ECC	No LSE	N/A
UK9002371	Rousay	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)
UK9002371	Rousay	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)
UK9002371	Rousay	Breeding seabirds in the breeding season	Common guillemot	A199	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9001341	Rum	Breeding seabirds in the breeding season	Manx shearwater	A013	Array ECC	No LSE	N/A
UK9001341	Rum	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	No LSE	N/A
UK9020331	Seas off Foula	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)
UK9020331	Seas off Foula	Breeding seabirds in the breeding season	Great skua	A175	Array ECC	No LSE	N/A
UK9020331	Seas off Foula	Breeding seabirds in the breeding season	Puffin	A204	Array ECC	Potential for LSE – Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9020332	Seas off St Kilda	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)
UK9020332	Seas off St Kilda	Breeding seabirds in the breeding season	Storm petrel	A014	Array ECC	Potential for LSE – ECC only	Attraction to light (O&M)
UK9020332	Seas off St Kilda	Breeding seabirds in the breeding season	Gannet	A016	Array ECC	Potential for LSE – Array only	Distributional response (displacement and barrier effects); collision(O&M)

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9014051	Skomer, Skokholm and the Seas off Pembrokeshire	Breeding seabirds in the breeding season	Manx shearwater	A013	Array ECC	No LSE	N/A
UK9004271	St Abb`s Head to Fast Castle	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE – Array only	Collision; distributional response (displacement) (O&M)
UK9001031	St Kilda	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)
UK9001031	St Kilda	Breeding seabirds in the breeding season	Manx shearwater	A013	Array ECC	No LSE	N/A
UK9001031	St Kilda	Breeding seabirds in the breeding season	Leach’s petrel	A015	Array ECC	Potential for LSE- ECC only	Attraction to light (O&M)
UK9001031	St Kilda	Breeding seabirds in the breeding season	Gannet	A016	Array ECC	Potential for LSE- Array only	Distributional response (displacement and barrier effects); collision(O&M)
UK9001031	St Kilda	Breeding seabirds in the breeding season	Great skua	A175	Array ECC	No LSE	N/A
UK9002181	Sule Skerry and Sule Stack	Breeding seabirds in the breeding season	Storm petrel	A014	Array ECC	Potential for LSE- ECC only	Attraction to light (O&M)
UK9002181	Sule Skerry and Sule Stack	Breeding seabirds in the breeding season	Leach’s petrel	A015	Array ECC	Potential for LSE- ECC only	Attraction to light (O&M)

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9002181	Sule Skerry and Sule Stack	Breeding seabirds in the breeding season	Gannet	A016	Array ECC	Potential for LSE- Array only	Distributional response (displacement and barrier effects); collision (O&M)
UK9002181	Sule Skerry and Sule Stack	Breeding seabirds in the breeding season	Puffin	A204	Array ECC	Potential for LSE- Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9002511	Sumburgh Head	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE – Array	Attraction to light (C, O&M, D)
						Potential for LSE – ECC	Attraction to light (O&M)
UK9002511	Sumburgh Head	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE- Array only	Collision; distributional response (displacement) (O&M)
UK9002511	Sumburgh Head	Breeding seabirds in the breeding season	Common guillemot	A199	Array ECC	Potential for LSE- Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9001041	The Shiant Isles	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)
UK9001041	The Shiant Isles	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE - Array only	Collision; distributional response (displacement) (O&M)

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9001041	The Shiant Isles	Breeding seabirds in the breeding season	Puffin	A204	Array ECC	No LSE	N/A
UK9002811	Tips of Corsemaul and Tom Mor	Breeding seabirds in the breeding season	Common gull	A182	ECC	No LSE	N/A
UK9003041	Treshnish Isles	Breeding seabirds in the breeding season	Storm petrel	A014	Array ECC	Potential for LSE - ECC only	Attraction to light (O&M)
UK9002471	Troup, Pennan and Lion`s Heads	Breeding seabirds in the breeding season	Fulmar	A009	Array ECC	Potential for LSE - Array	Attraction to light (C, O&M, D)
						Potential for LSE - ECC	Attraction to light (O&M)
UK9002471	Troup, Pennan and Lion`s Heads	Breeding seabirds in the breeding season	Herring gull	A184	Array ECC	No LSE	N/A
UK9002471	Troup, Pennan and Lion`s Heads	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE - Array only	Collision; distributional response (displacement) (O&M)
UK9002471	Troup, Pennan and Lion`s Heads	Breeding seabirds in the breeding season	Common guillemot	A199	Array ECC	Potential for LSE - Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9002471	Troup, Pennan and Lion`s Heads	Breeding seabirds in the breeding season	Razorbill	A200	Array ECC	Potential for LSE - Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
UK9002101	West Westray	Breeding seabirds in the breeding season	Fulmar	A009	Array	Potential for LSE - Array	Attraction to light (C, O&M, D)
					ECC	Potential for LSE - ECC	Attraction to light (O&M)
UK9002101	West Westray	Breeding seabirds in the breeding season	Kittiwake	A188	Array ECC	Potential for LSE - Array only	Collision; distributional response (displacement) (O&M)
UK9002101	West Westray	Breeding seabirds in the breeding season	Common guillemot	A199	Array ECC	Potential for LSE - Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9002101	West Westray	Breeding seabirds in the breeding season	Razorbill	A200	Array ECC	Potential for LSE - Array only	Direct temporary habitat loss/disturbance (C, O&M, D) Distributional response (displacement and barrier effects) (O&M)
UK9002221	Ythan Estuary, Sands of Forvie and Meikle Loch	Breeding seabirds in the breeding season	Sandwich tern	A191	ECC	No LSE	N/A
UK9002221	Ythan Estuary, Sands of Forvie and Meikle Loch	Breeding seabirds in the breeding season	Common tern	A193	ECC	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Breeding seabird in the non-breeding season	Fulmar	A009	Array ECC	As for breeding season	
ALL	All sites to be taken forward to stage 2 screening	Breeding seabird in the non-breeding season	Manx shearwater	A013	Array ECC	As for breeding season	

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
ALL	All sites to be taken forward to stage 2 screening	Breeding seabird in the non-breeding season	Gannet	A016	Array ECC	As for breeding season	
ALL	All sites to be taken forward to stage 2 screening	Breeding seabird in the non-breeding season	Great skua	A175	Array	As for breeding season	
ALL	All sites to be taken forward to stage 2 screening	Breeding seabird in the non-breeding season	Lesser black-backed gull	A183	Array	As for breeding season	
ALL	All sites to be taken forward to stage 2 screening	Breeding seabird in the non-breeding season	Herring gull	A184	Array	As for breeding season	
ALL	All sites to be taken forward to stage 2 screening	Breeding seabird in the non-breeding season	Great black-backed gull	A187	Array	As for breeding season	
ALL	All sites to be taken forward to stage 2 screening	Breeding seabird in the non-breeding season	Kittiwake	A188	Array	As for breeding season	
ALL	All sites to be taken forward to stage 2 screening	Breeding seabird in the non-breeding season	Razorbill	A200	Array	As for breeding season	
ALL	All sites to be taken forward to stage 2 screening	Breeding seabird in the non-breeding season	Puffin	A204	Array ECC	As for breeding season	
ALL	All sites to be taken forward to stage 2 screening	Migratory seabird	Storm petrel	A014	Array	No LSE	N/A

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
ALL	All sites to be taken forward to stage 2 screening	Migratory seabird	Leach's Petrel	A015	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Slavonian grebe	A007	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Great white egret	A027	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Whooper swan	A038	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Pink-footed goose	A040	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Greylag goose	A043	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Barnacle goose	A045	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Shelduck	A048	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Wigeon	A050	Array	No LSE	N/A

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Teal	A052	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Mallard	A053	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Pintail	A054	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Shoveler	A056	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Pochard	A059	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Tufted duck	A061	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Scaup	A062	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Goldeneye	A067	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Red-breasted merganser	A069	Array	No LSE	N/A

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Goosander	A070	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Hen harrier	A082	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Merlin	A098	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Hobby	A099	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Quail	A113	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Water rail	A118	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Spotted crake	A119	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Corncrake	A122	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Oystercatcher	A130	Array	No LSE	N/A

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Ringed plover	A137	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Dotterel	A139	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Golden plover	A140	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Grey plover	A141	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Lapwing	A142	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Knot	A143	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Sanderling	A144	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Little stint	A145	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Purple sandpiper	A148	Array	No LSE	N/A

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Snipe	A153	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Bar-tailed godwit	A157	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Whimbrel	A158	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Curlew	A160	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Redshank	A162	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Greenshank	A164	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Green sandpiper	A165	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Common sandpiper	A168	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Turnstone	A169	Array	No LSE	N/A

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Short-eared owl	A222	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Whinchat	A275	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Wheatear	A277	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Ring ouzel	A282	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Sedge warbler	A295	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Reed warbler	A297	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Wood warbler	A314	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Dunlin	A466/ A672	Array	No LSE	N/A
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Black-tailed godwit	A616	Array	No LSE	N/A

Stage One Results (noting that all project phases were considered for all sites and species at this stage)						Stage Two Conclusions	
Site Code	**Site Name**	**Feature Group**	**Feature**	**Feature Code**	**Project Aspect**	**Determination of Potential for LSE**	**Pressures**
ALL	All sites to be taken forward to stage 2 screening	Migratory waterbird	Light-bellied brent goose	A674	Array	No LSE	N/A