Muir Mhòr Offshore Wind Farm

Derogation Case

Appendix G - Compensatory Measures: No Likely Significant Effects Report

Revision No.	Date	Reason for Issue	Author	Reviewer	Approver
01	22/11/2024	Final	GoBe Consultants Ltd.	GoBe Consultants Ltd.	MMOWF Ltd

Document info

Document ID	**MMH-GBE-A004-ENV-0006-608**
Revision	01
Date	22/11/2024

Contents

1. Introduction 1

1.1. Project Background 1
1.2. Purpose of this Document 2
1.3. Supporting Information 2

2. Proposed Compensation Measures 3

2.1. Introduction 3
2.2. Impact Avoidance Through Standard Best Practice 4
2.3. Consultation 4

3. Approach to Stage 1: Screening for Likely Significant Effects 6

3.1. Introduction 6
3.2. Identification of Potential Impacts and Receptor Groups to be Considered 6
3.3. Identification of Specific Sites and Features for Screening 7
3.4. Screening for Potential Likely Significant Effects 10
3.5. Assessment of Likely Significant Effects Alone 10

Outer Firth of Forth and St Andrews Bay Complex SPA 10
Forth Islands SPA 12
Moray Firth SPA 13
Cromarty Firth SPA and Ramsar 14
Conclusions of Assessment of Likely Significant Effect Alone 16

3.6. Assessment of Likely Significant Effects In-Combination 16

4. Conclusions 17

5. References 18

Figures

Figure 3-1 Potential Compensatory Measure Locations in Relation to Nearby European Protected Sites. 9

Tables

Table 2-1 Summary of Proposed Compensation Measures 3

Table 2-2 Exchanges with stakeholders on possible compensation measures. 4

Table 3-1 Identification of Potential Impact Pathway (all measures) for AA Screening 6

Glossary

Term	Definition
Array Area	The area in which the generation infrastructure (including Wind Turbine Generators and associated foundations and inter-array cables), Offshore Electrical Platform(s), and an interconnector cable will be located.
Baseline	The status of the environment at the time of assessment without the development in place.
Developer	Muir Mhòr Offshore Wind Farm Limited
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of an impact with the sensitivity of a receptor, in accordance with defined significance criteria.
Habitats Regulations	The Conservation (Natural Habitats, &c.) Regulations 1994, the Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2019, the Conservation of Habitats and Species Regulations 2017 and the Conservation of Offshore Marine Habitats and Species 2017.
Habitats Regulations Appraisal	A statutory process by which planned projects must be assessed before a formal decision to proceed can be made. It involves the assessment of potential impacts on designated habitats and species as determined by the Habitats Regulations.
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial.
Inter-array cables	Cables which link the wind turbines generators to each other and the Offshore Electrical Platform(s).
Interconnector	Cable which links the Offshore Electrical Platform(s) to one another, allowing for power to be transferred between the platforms.
Landfall	The area between Mean High Water Springs (MHWS) and Mean Low Water Springs (MLWS) where the offshore export cables are brought onshore.
Offshore Electrical Platform (OEP)	Offshore platform consisting of High Voltage Alternating Current (HVAC) equipment, details depending on the final electrical set up of the Project.
Project	Muir Mhòr Offshore Wind Farm – comprises the wind farm and all associated offshore and onshore components.
Proposed Development	The offshore Muir Mhòr Offshore Wind Farm project elements to which this Offshore EIA Report relates.
Receptor	A distinct part of the environment on which effects could occur and can be the subject of specific assessments. Examples of receptors include species (or groups) of animals or plants, people (often categorised further such as ‘residential’ or those using areas for amenity or recreation), watercourses etc.
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.

Acronyms

Term	Definition
AA	Appropriate Assessment
AEoSI	Adverse Effect on Site Integrity
ANS	Artificial Nesting Structure
CES	Crown Estate Scotland
CIMP	Compensation Implementation and Monitoring Plan
DESNZ	Department for Energy Security and Net Zero
EC	European Community
EEC	European Economic Community
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
ESO	Energy System Operator
EU	European Union
GHG	Greenhouse Gas
GW	Gigawatt
HRA	Habitat Regulations Appraisal
IROPI	Imperative Reasons of Overriding Public Interest
JNCC	Joint Nature Conservation Committee
LSE	Likely Significant Effect
MHWS	Mean High Water Springs
NGESO	National Grid Energy System Operator
NSN	National Site Network
OEP(s)	Offshore Electrical Platform(s)
RIAA	Report to Inform Appropriate Assessment
SAC	Special Area of Conservation
SPA	Special Protection Area
WTG	Wind Turbine Generator
ZoI	Zone of Influence

1. INTRODUCTION

1.1. PROJECT BACKGROUND

1.1.0. Muir Mhòr Offshore Wind Farm Limited (hereafter referred to as 'the Developer') is proposing to develop the Muir Mhòr Offshore Wind Farm (hereafter 'the Project'). The Project is made up of both offshore and onshore components. The subject of this report is the offshore infrastructure of the Project seaward of Mean High-Water Springs (MHWS) which is hereafter referred to as 'the Proposed Development'.

1.1.1. The Muir Mhòr Array Area covers an area of approximately 200 km^2 and is located approximately 63 km east of Peterhead on the east coast of Scotland. The offshore infrastructure of the Proposed Development includes Wind Turbine Generators (WTGs) and associated floating foundations, the Offshore Electrical Platform(s) (OEP(s)) and associated foundations, the inter-array cables, an interconnector cable, offshore export cables and landfall.

1.1.2. The Proposed Development is located within Scottish Territorial Waters (extending to 12 nautical miles (nm) from shore) and the United Kingdom Exclusive Economic Zone (EEZ; between 12 and 200 nm). Consents and licences required for the construction and operation of offshore wind farms in these waters are granted by Scottish Ministers. Consent is required and includes obtaining a Section 36 consent under the Electricity Act 29189, Marine Licences under the Marine and Coastal Access Act 2009 and Marine (Scotland) Act 2010 as well as a Habitats Regulation Appraisal (HRA) under the Conservation of Offshore Marine Habitats and Species Regulations 2017, the Conservation of Habitats and Species Regulations 2017, and the Conservation (Natural Habitats, &c.) Regulations 1994 (the 'Habitats Regulations').

1.1.3. An Appropriate Assessment (AA) is required for projects or plans which may affect protected sites such as Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) under the Habitats Regulations. If, during the HRA process an Adverse Effect on Site Integrity (AEoSI) of a particular site cannot be excluded, a derogation process is undertaken during which any potential alternative solutions are assessed. Should no appropriate alternative solutions exist, and provided there are imperative reasons of overriding public interest (IROPI), the final stage of the derogations process is to develop compensation measures to ensure that overall coherence of the National Site Network (NSN)[1] is protected. This process is provided for under the provisions of the Habitats Regulations.

1.1.4. A Report to Inform Appropriate Assessment (RIAA) is required to provide information for the assessment of NSN sites that have been screened in due to the Proposed Development's Likely Significant Effects (LSE) for the features of designation. Based on the conclusions of the RIAA a derogation case is provided for four qualifying seabird species at five SPAs, including:

- Atlantic puffin (hereafter referred to as 'Puffin') (*Fratercula arctica*);
- Black-legged kittiwake (hereafter referred to as 'Kittiwake') (*Rissa tridactyl*);
- Common guillemot (hereafter referred to as 'Guillemot') (*Uria aalge*); and
- Northern gannet (hereafter referred to as 'Gannet) (*Morus bassanus*).

[1] A network of protected sites across the UK established post-Brexit, equivalent to the former Natura 2000 network.

1.1.5. The derogation case includes measures to compensate for the potential adverse effects from the Proposed Development. The chosen package of compensation measures comprise of the following:

- Artificial Nesting Structures (ANS) for kittiwake;
- Predator Control for Kittiwake, Puffin, and Guillemot; and
- Disturbance Reduction Measures for Kittiwake, Puffin, Guillemot, and Gannet.

1.1.6. Full details, including the evidence underpinning each measure and the plan for delivery, is provided in the Ornithological Compensation Plan (Derogation Case, Appendix A), and the Evidence and Roadmaps for each of these measures (Derogation Case, Appendices B-D).

1.2. PURPOSE OF THIS DOCUMENT

1.2.1. This Compensation Measures: No Likely Significant Effects Report presents an assessment under the Habitats Regulations of the likely significant environmental effects of the compensatory measures being developed as part of the 'without prejudice' Derogation Case for the Proposed Development.

1.2.2. As the compensatory measures proposed are not a part of the original assessment undertaken for the Proposed Development, their impacts have not been considered previously within the RIAA for the Proposed Development and therefore are considered to be additional, unassessed impacts. These effects require assessment for their potential impacts on the environment, both within the context of an Environmental Impact Assessment (EIA) and HRA. The EIA for the proposed compensatory measures is presented within Derogation Case: Appendix F - Compensation Measures: Environmental Impact Assessment Report, while this appendix focuses on the assessment with respect to the Habitats Regulations.

1.2.3. The HRA Process and legal precedence and guidance surrounding the Habitats Regulations is described in full within the Muir Mhòr RIAA (Muir Mhòr Offshore Windfarm Limited, 2024) and Section 2 of the Derogation Case, and is not repeated in full here for brevity.

1.3. SUPPORTING INFORMATION

1.3.1. Given the nature of the compensatory measures, this assessment is inherently based on and is partnered with several other documents. Not all the information presented within the supporting documents is repeated here; however, references will be provided where relevant. All the supporting documents of relevance to this No LSE Report are as follows:

- Derogation Case: Appendix A - Ornithology Compensation Plan;
- Derogation Case: Appendix B - Artificial Nesting Structures for Kittiwake: Evidence and Roadmap;
- Derogation Case: Appendix C - Predator Control: Evidence and Roadmap;
- Derogation Case: Appendix D - Disturbance Reduction: Evidence and Roadmap;
- Derogation Case: Appendix E - Compensation Measures: Site Investigation Report; and
- Derogation Case: Appendix F - Compensation Measures: Environmental Impact Assessment.

2. PROPOSED COMPENSATION MEASURES

2.1. INTRODUCTION

2.1.1. A full description of each proposed compensatory measure can be found within the supporting information documents, as listed in Section 1.1. above.

2.1.2. A summary of each of the proposed compensation measures is outlined in Table 2-1. Full details are provided in the Ornithological Compensation Plan (Derogation Case, Appendix A) and the associated Evidence and Roadmaps for each of these measures (Derogation Case, Appendices B-D). To minimise any potential effect on European site receptors, it is likely that each measure will be implemented in line with best practice standards.

Table 2-1 Summary of Proposed Compensation Measures

Compensation Measures	Potential Location	Summary
Artificial Nesting Ledges for Kittiwake	Up to seven locations on the east coast of Scotland (Aberdeen to Stonehaven). See Figure 3-1 for potential locations. Inchcolm, Inchgarvie, and Inchkeith islands are also considered.	The installation of stainless-steel hammocks to create new ledges for nesting has the potential to increase productivity at existing colonies.
Predator Control	East coast of Scotland (Aberdeen to Stonehaven). See Figure 3-1 for potential locations. Inchcolm, Inchgarvie, and Inchkeith islands are also considered.	Inchkeith was identified as a priority island for invasive non-native species eradication, as brown rats and house mice are present. Strategic compensation using mink eradication in partnership with the Mink Control Project is also considered.
Disturbance Reduction Measures	East coast of Scotland (Aberdeen to Stonehaven). See Figure 3-1 for potential locations. Inchcolm, Inchgarvie, and Inchkeith islands are also considered.	Educational outreach to reduce disturbance pressures including rock-climbing, paddleboarding and clay shooting.

2.1.3. Final locations for the potential compensation measures are yet to be determined. However, as shown in Derogation Case: Appendix E - Compensation Measures: Site Investigation Report), there are several locations where preliminary research and/or initial site visits have taken place and likely feasibility confirmed.

2.1.4. Several locations have been identified on the East coast of Scotland (between Aberdeen and Stonehaven) for potential compensation measure implementation. Other potential locations are the islands of Incholm, Inchgarvie and Inchkeith which are all located further south in the Firth of Forth. All of these locations are presented in Figure 3-1.

2.2. IMPACT AVOIDANCE THROUGH STANDARD BEST PRACTICE

2.2.1. As per the guidance on undertaking an HRA, mitigation commitments cannot be taken into account within the initial screening stage, however, can be considered within the assessment in Stage two. This applies equally to the assessment of compensatory measures as it does for the impacts of the offshore wind farm itself and therefore the same approach has been used when identifying and considering mitigation for compensatory measures.

2.2.2. However, avoidance through following standard best practice can be considered at the screening stage. In terms of avoiding disturbance effects, standard practice protocols will be adhered to in order to avoid the likelihood of any effects on birds, for example: avoiding activities during sensitive seasons for wintering and/or breeding birds, where practicable, and following specific protocols such as using existing tracks/ access routes, walking slowly and checking before each footfall.

2.2.3. While the above is not an exhaustive list, the Developer is fully committed to ensuring, where feasible, all available relevant best practice guidance is adhered to.

2.3. CONSULTATION

2.3.1. Prior to application submission, the proposed compensation measures were consulted on with local and national stakeholders, such as NatureScot and the RSPB.

2.3.2. Meetings were held with NatureScot and the RSPB to discuss the selected sites, surveys, and proposed compensation measures. In addition, several written exchanges occurred with local groups or organisations and councils to discuss potential measures. A detailed list of exchanges can be found in Table 2-2. This list only includes exchanges with stakeholders who engaged with the Developer, as several other stakeholders were contacted and did not provide a response.

Table 2-2 Exchanges with stakeholders on possible compensation measures.

Stakeholder	Communication	Date(s)	Topic(s) of discussion
NatureScot	Meeting	08/08/2024	Ornithological surveys and their results were presented to NatureScot.
RSPB	Meeting	18/06/2024	Ornithological surveys and their methodology were presented to the RSPB.
Highland Bird Ringing Group	E-mail	26/04/2024 to 01/05/2024	Conservation around potential threats to seabird colonies at North and South Sutor.
Forth Seabird Group	E-mail	22/08/2024 to 30/09/2024	Conversation around mammalian predator eradication at the Firth of Forth Islands.
Aberdeenshire Council	E-mail	15/08/2024 to 24/09/2024	Landownership and current council seabird conservation/mammalian predator eradication programmes were discussed.
Scottish Seabird Centre	Meeting	04/09/2024 to 21/11/2024	Possible compensation measures to support the Scottish Seabird Centre and their projects were discussed.

Stakeholder	Communication	Date(s)	Topic(s) of discussion
National Trust for Scotland	E-mail	19/08/2024 to 24/09/2024	Current seabird conservation initiatives carried out by the National Trust for Scotland were discussed.
Scottish Wildlife Trust	E-mail	26/09/2024 to 30/09/2024	Current seabird conservation initiatives carried out by the Scottish Wildlife Trust for Scotland were discussed.

2.3.3. Post-consent, the Developer will create a steering committee to support the Developer in defining the details of site refinement, implementation, monitoring, maintenance, reporting, and other measures necessary for the successful implementation of the measure. Core members will likely include any Statutory Nature Conservation Bodies (SNCBs), as well as RSPB, site owners and local council(s). These discussions will inform the CIMP and support the implementation of the measures.

3. APPROACH TO STAGE 1: SCREENING FOR LIKELY SIGNIFICANT EFFECTS

3.1. INTRODUCTION

3.1.1. The first stage in the No LSE Report for the compensatory measures is screening, where any potential LSEs are identified on designated sites with respect to the proposed measure both alone and in-combination with other plans and projects.

3.1.2. When considering in-combination impacts, where a potential LSE has been identified for the measure alone, a pathway exists for an LSE in-combination. Where no pathway for LSE has been identified for the measure alone, it is considered that there is no pathway in-combination and has also been screened out.

3.1.3. The steps of screening are as follows:

- Identify the potential impacts to be considered;
- Identify the sites and features with the potential to be impacted; and
- Undertake the screening exercise.

3.2. IDENTIFICATION OF POTENTIAL IMPACTS AND RECEPTOR GROUPS TO BE CONSIDERED

3.2.1. Based on the assessment process outlined above, a comprehensive list of potential impacts and potential receptor groups has been compiled. Table 3-1 presents these receptor groups, identifies potential impacts and indicates whether each impact is within the scope of further consideration (In/Out). Each exclusion is justified based on the presence or absence of viable pathways through which impacts may affect the receptor groups.

Table 3-1 Identification of Potential Impact Pathway (all measures) for AA Screening

Receptor Type	Potential Impact	Scoped In/ Out	Justification
Ornithology	Potential for disturbance from off-site vessel movements.	In	Potential pathway.
	Potential for disturbance from on-site activities.	In	Potential pathway.
	Potential effects through accidental pollution.	Out	No or unlikely/ negligible pathway from proposed activities.
Benthic ecology (subtidal habitats)	Temporary habitat disturbance through sediment release.	Out	No or unlikely/ negligible pathway from proposed activities
	Potential for habitat disturbance through coastal process changes.	Out	No or unlikely/ negligible pathway from proposed activities
	Potential for direct habitat loss.	Out	No or unlikely/ negligible pathway from proposed activities

Receptor Type	Potential Impact	Scoped In/ Out	Justification
	Potential effects through accidental pollution.	Out	No or unlikely/ negligible pathway from proposed activities
Marine Fish	Temporary disturbance to migratory fish species from off-site vessel movements	Out	No or unlikely/ negligible pathway from proposed activities
	Temporary disturbance to migratory fish from on-site activities	Out	No or unlikely/ negligible pathway from proposed activities
	Potential effects through accidental pollution	Out	No or unlikely/ negligible pathway from proposed activities
Marine Mammals	Temporary disturbance to marine mammal species from vessel movements	In	Potential pathway (see paragraph 3.2.2).
	Temporary disturbance to marine mammals from on-site activities	Out	No or unlikely/ negligible pathway from proposed activities
	Potential injury/ mortality to marine mammal species from vessels	In	Potential pathway (see paragraph 3.2.2).
	Potential effects through accidental pollution	Out	No or unlikely/ negligible pathway from proposed activities
Onshore (Non-Ornithology) Ecology	Potential for disturbance from on-site activities	In	Potential pathway.
	Potential effects from accidental pollution	Out	No or unlikely/ negligible pathway from proposed activities

3.2.2. Marine mammal receptors are scoped in for consideration for island locations only, where vessel transport creates a potential pathway for impact. Specifically, vessel movements to and from these sites present potential risks of temporary disturbance and, in some cases, potential injury to marine mammal species. For non-island locations, land-based access will be used, thus negating impact pathways and eliminating any substantial risk of impact to marine mammals. This approach ensures that only scenarios with a viable impact pathway are further assessed.

3.2.3. Therefore, only ornithology, onshore ecology and marine mammal receptors are scoped in for potential impacts based on a potential pathway.

3.3. IDENTIFICATION OF SPECIFIC SITES AND FEATURES FOR SCREENING

3.3.1. Given the nature and location of the proposed compensatory measures and the potential impacts identified above, only European sites with ornithological, onshore ecology and marine mammal receptors are considered.

3.3.2. The Zone of Influence (ZoI) is the area over which ecological features may be affected by biophysical changes as a result of the proposed activities. This has the potential to extend far

beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries.

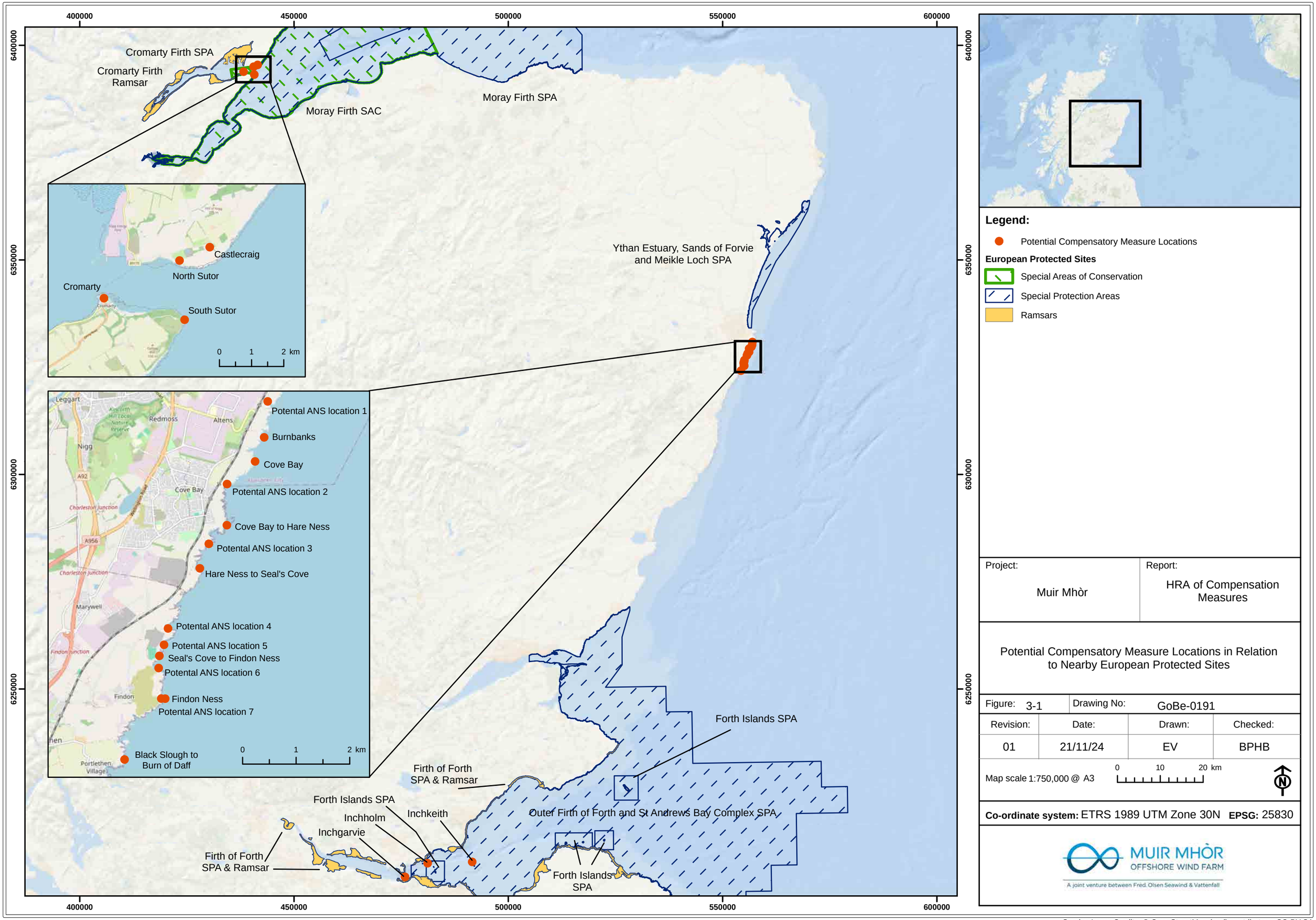
3.3.3. The screening ranges used to identify designated sites for these receptor groups are as follows:

- Ornithology features – all sites with a designated seabird, wader or wildfowl features within a 5 km ZoI of proposed activities are scoped into the assessment. This is considered highly precautionary based on the disturbance ranges considered within NatureScot Guidance for Scottish bird species (maximum range of 1 km for any species) (NatureScot, 2022);
- Onshore ecology – any sites with non-mobile features only within a 2 km ZoI have been included as this is considered the worst-case maximum range to which proposed activities may interact with onshore habitats. An extended 5 km ZoI for sites with mobile features has been applied to account for supporting habitat for these mobile species. These ZoI are considered highly precautionary considering the nature and scale of proposed land-based activities; and
- Marine mammals – any sites where a marine mammal SAC has a physical overlap with the area for proposed activities (including potential vessel transit routes), the SAC is included for assessment of potential impact sources i.e. vessels in transit.

3.3.4. Based on the screening ranges above, the following sites, as shown in Figure 3-1, were scoped in for LSE screening:

- Outer Firth of Forth and St Andrews Bay Complex SPA – disturbance effects (including vessels);
- Forth Islands SPA – disturbance effects (including vessels);
- Moray Firth SPA – disturbance effects; and
- Cromarty Firth SPA and Ramsar (supporting habitat for birds) – disturbance effects.

3.3.5. Note - no sites within the relevant screening ranges with marine mammals or onshore ecology designated features were identified and as such these receptors aren’t considered further.



Legend:

- Potential Compensatory Measure Locations

European Protected Sites

- Special Areas of Conservation
- Special Protection Areas
- Ramsars

Project: Muir Mhòr	Report: HRA of Compensation Measures

Potential Compensatory Measure Locations in Relation to Nearby European Protected Sites

Figure:	Drawing No:		
3-1	GoBe-0191		
Revision:	**Date:**	**Drawn:**	**Checked:**
01	21/11/24	EV	BPHB

Map scale 1:750,000 @ A3

0 10 20 km

Co-ordinate system: ETRS 1989 UTM Zone 30N **EPSG:** 25830

MUIR MHÒR OFFSHORE WIND FARM

A joint venture between Fred. Olsen Seawind & Vattenfall

Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

3.4. SCREENING FOR POTENTIAL LIKELY SIGNIFICANT EFFECTS

3.4.1. The process followed above identified five designated sites and their qualifying features which will be considered for any potential LSE against the impacts presented within Table 3-1. For an effect to be considered to be potentially significant, the receptor needs to be sensitive to that impact and there needs to be a pathway.

3.4.2. The consideration of LSE is undertaken for each compensatory measure both alone, and in-combination with other plans and projects, and where LSE has been identified for the measure alone, it has been assumed that LSE applies in-combination.

3.5. ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS ALONE

OUTER FIRTH OF FORTH AND ST ANDREWS BAY COMPLEX SPA

3.5.1. The Outer Firth of Forth and St Andrews Bay Complex SPA is a large estuarine/marine site off the south-east coast of Scotland. It stretches from Arbroath in the north to St. Abb's Head in the south and encompasses the Firth of Forth, the outer Firth of Tay and St. Andrews Bay, as well as offshore waters to the east of the Isle of May. It covers an area of c. 2,721 km^2, extends offshore beyond 12 nm and complements adjacent SPAs, such as the Firth of Forth SPA, the Forth Islands SPA, the Imperial Lock Dock SPA and the Firth of Tay and Eden Estuary SPA (NatureScot, 2023a; JNCC, 2020).

3.5.2. The SPA is designated for the following bird species:

- Red-throated diver (non-breeding) (*Gavia stellata*);
- Slavonian grebe (non-breeding) (*Podiceps auritus*);
- Eider (non-breeding) (*Somateria mollissima*);
- Long-tailed duck (non-breeding) (*Clangula hyemalis*);
- Common scoter (non-breeding) (*Melanitta nigra*);
- Velvet scoter (non-breeding) (*Melanitta fusca*);
- Goldeneye (non-breeding) (*Bucephala clangula*);
- Red-breasted merganser (non-breeding) (*Mergus serrator*);
- Arctic tern (breeding) (*Sterna paradisaea*);
- Common tern (breeding) (*Sterna hirundo*);
- Shag (non-breeding) (*Phalacrocorax aristotelis*);
- Gannet (breeding);
- Puffin (breeding);
- Kittiwake (breeding and non-breeding);
- Manx shearwater (breeding) (*Puffinus puffinus*);
- Guillemot (breeding and non-breeding);
- Razorbill (non-breeding) (*Alca torda*);

- Herring gull (breeding and non-breeding) (*Larus argentatus*);
- Little gull (non-breeding) (*Larus minutus*);
- Black-headed gull (non-breeding) (*Chroicocephalus ridibundus*);
- Common gull (non-breeding) (*Larus canus*);
- Breeding seabird assemblage;
- Non-breeding seabird assemblage; and
- Non-breeding waterfowl assemblage.

3.5.3. The Conservation Objectives for this site are as follows:

- To ensure that the qualifying features of the Outer Firth of Forth and St Andrews Bay Complex SPA are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status; and
- To ensure that the integrity of the Outer Firth of Forth and St Andrews Bay Complex SPA is restored in the context of environmental changes by meeting the following objectives for each qualifying feature:
  - The populations of qualifying features are viable components of the site;
  - The distributions of the qualifying features throughout the site are maintained by avoiding significant disturbance of the species; and
  - The supporting habitats and processes relevant to the qualifying features and their prey/food resources are maintained, or where appropriate restored, at the Outer Firth of Forth and St Andrews Bay Complex SPA.

3.5.4. Potential effects on this SPA relate only to any proposed compensation measures at Inchkeith, Ingarvie and Incholm islands, which are located within the SPA. As artificial nesting structures are not proposed at these locations, and the SPA is beyond any ZoI, this measure is not considered for this SPA.

DISTURBANCE EFFECTS – PREDATOR CONTROL

3.5.5. Above-water noise disturbance from predator control-related activities (primarily human presence) is not considered in isolation as a risk factor for birds; instead, it is combined with other factors such as the presence of vessels. Furthermore, bird species differ in their sensitivity and response to disturbance (Furness *et al.*, 2013; Fliessbach *et al.,* 2019).

3.5.6. Red-throated diver is a particular species that has been assessed as having a high sensitivity to boat disturbance (Furness *et al.*, 2013); and in marine areas this species has been identified as being particularly sensitive to human activities (Dierschke *et al.*, 2016). On land, breeding birds are particularly susceptible/ vulnerable to disturbance effects.

3.5.7. In terms of on-land human access, the potential measure is likely to require several temporary visits on-foot by relevant personnel along established routes for the most part. In terms of predator control measure implementation, likely activities would include the placement of traps and or fencing. These activities by nature comprise minimal noise or other sources of disruption.

3.5.8. In terms of vessels in transit, the predator control measure could require several separate vessel trips to selected island locations. Given that the baseline environment is already subject to high levels of shipping activity, and therefore the minimal additional vessel activity is expected to add negligible additional disturbance to this baseline.

3.5.9. Therefore, in relation to potential effects through disturbance from predator control, due to the nature, scale, short/intermittent duration of the potential impacts associated with any human activity and vessels in transit, the significant size of the SPA (2,721 km^2), and the implementation of standard practice avoidance measures, it can be concluded that the proposed measure will have a negligible (at worst) effect on achieving the Conservation Objectives for the Outer Firth of Forth and St Andrews Bay Complex SPA, and therefore no LSE.

DISTURBANCE EFFECTS – DISTURBANCE REDUCTION

3.5.10. In terms of the proposed disturbance reduction measure, as with predator control above, the measure could require several temporary visits on-foot by relevant personnel along established routes for the most part. In terms of implementation, likely activities could include providing education, installation of signage and re-routing of access tracks. These activities by nature comprise minimal noise or other sources of disruption.

3.5.11. In terms of vessels in transit, as with predator control, disturbance reduction measure could require several separate vessel trips to selected island locations.

3.5.12. Based on the similarity between this measure and predator control, the same conclusions can be drawn that, due to the nature, scale, short/intermittent duration of the potential impacts associated with any human activity and vessels in transit, the significant size of the SPA (2,721 km^2), and the implementation of standard practice avoidance measures, the proposed measure will have a negligible (at worst) effect on any designated species and achieving the Conservation Objectives for the Outer Firth of Forth and St Andrews Bay Complex SPA, and therefore no LSE.

FORTH ISLANDS SPA

3.5.13. The Forth Islands SPA consists of a series of islands supporting the main seabird breeding colonies in the Firth of Forth. The islands of Inchmickery, Isle of May, Fidra, The Lamb, Craigleith and Bass Rock were classified on 25 April 1990. The extension to the site, classified on the 16 February 2004 consists of the island of Long Craig, which, at the time of classification, supported the largest colony of Roseate tern (*Sterna dougallii*) in Scotland. The seaward extension extends approximately 2 km into the marine environment to include the seabed, water column and surface (NatureScot, 2023b; JNCC, 2018).

3.5.14. The SPA is designated for the following bird species:

- Sandwich tern (breeding) (*Thalasseus sandvicensis*);
- Roseate tern (breeding);
- Arctic tern (breeding);
- Common tern (breeding);
- Gannet (breeding);
- Lesser black-backed gull (breeding) (*Larus fuscus*);
- Puffin (breeding); and
- Shag (breeding).
- Breeding seabird assemblage including the following additional named components:
  - Guillemot;
  - Razorbill;

- Kittiwake;
- Herring gull; and
- Cormorant (*Phalacrocorax carbo*).

3.5.15. The Conservation Objectives for this site are as follows:

- To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and
- To ensure for the qualifying species that the following are maintained in the long term:
  - Population of the species as a viable component of the site;
  - Distribution of the species within site;
  - Distribution and extent of habitats supporting the species;
  - Structure, function and supporting processes of habitats supporting the species; and
  - No significant disturbance of the species.

3.5.16. Potential effects on this SPA relate only to any proposed compensation measures at Inchkeith, Ingarvie and Incholm islands, which are located within the SPA. As artificial nesting structures are not proposed at these locations, and the SPA is beyond any ZoI, this measure is not considered for this SPA.

DISTURBANCE EFFECTS – PREDATOR CONTROL

3.5.17. As the Forth Islands SPA is located within the boundaries of the Outer Firth of Forth and St Andrews Bay Complex SPA, and due to similar likely activities and effects, the same assessment and its conclusions reached for predator control measures for that SPA would also apply for this SPA.

DISTURBANCE EFFECTS – DISTURBANCE REDUCTION

3.5.18. Due to similar likely activities and effects the same assessment and its conclusions for predator control above, would also apply for the disturbance reduction measure and is not repeated here for brevity.

MORAY FIRTH SPA

3.5.19. The Moray Firth SPA is a funnel-shaped body of sea on the northeast mainland coast of Scotland. Most of the Firth is shallow water (less than 20 m) over a sandy substrate, apart from a 50 m deep channel running east-west through muddy substrate. Tidal flows are relatively weak with a maximum tidal range of 3 m and the Firth is relatively sheltered, at least in comparison to the exposure of the Atlantic west coasts. The Moray Firth is an important spawning ground and nursery area for a number of fish species, which together with abundant bivalve molluscs, are important prey species for marine waterbirds (NatureScot, 2023c).

3.5.20. The SPA is designated for the following non-breeding bird species:

- Great northern diver (*Gavia immer*);
- Red-throated diver; and
- Slavonian grebe.

3.5.21. The Conservation Objectives for this site are as follows:

- To ensure that the qualifying features of the Moray Firth SPA are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status; and

- To ensure that the integrity of the Moray Firth SPA is restored in the context of environmental changes by meeting the below objectives for each qualifying feature:
  - The populations of qualifying features are viable components of the site;
  - The distribution of the qualifying features is maintained throughout the site by avoiding significant disturbance of the species; and
  - The supporting habitats and processes relevant to qualifying features and their prey resources are maintained, or where appropriate restored, at the Moray Firth SPA.

DISTURBANCE EFFECTS – PREDATOR CONTROL

3.5.22. Any impacts on the Moray Firth SPA would only relate to potential predator control activities at locations in the Moray Firth. As shown on Figure 3-1, any activities at these locations would take place on the mainland and therefore most likely be accessed by foot. Therefore, any vessel related disturbance is discounted for this assessment.

3.5.23. In terms of human disturbance, the same assessment and conclusions for the above SPAs would also apply here i.e. in relation to potential effects through non-vessel related disturbance, due to the nature, scale, short/ intermittent duration, location (outside the SPA) of the potential impacts associated with any human activity, the size of the SPA (5,876 km^2) and likely implementation of standard practice avoidance measures, it can be concluded that activities related to predator control will have a negligible (at worst) effect on any designated species and achieving the Conservation Objectives for the Moray Firth SPA, and therefore no LSE.

DISTURBANCE EFFECTS – DISTURBANCE REDUCTION

3.5.24. Due to similar likely activities and effects, the same assessment and its conclusions for predator control above, would also apply for the disturbance reduction measure and is not repeated here for brevity.

DISTURBANCE EFFECTS – ARTIFICIAL NESTING STRUCTURES

3.5.25. Due to similar likely activities and effects, the same assessment and its conclusions for predator control above, would also apply for the artificial nesting structure measure and is not repeated here for brevity.

CROMARTY FIRTH SPA AND RAMSAR

3.5.26. Cromarty Firth SPA is a large, narrow-mouthed estuary which supports the largest intertidal flats in the Moray Basin. The site extends eastwards for approximately 30 km from the islands at the mouth of the River Conon to the town of Cromarty (NatureScot, 2023d).

3.5.27. The Cromarty Firth Ramsar site is located within the same boundary as the SPA and is internationally recognised for containing extensive intertidal mudflats and shingle bordered locally by areas of saltmarsh. Ramsar criterion 1 - the site contains extensive, undisturbed intertidal flats with eelgrass Zostera spp. Bed; Ramsar criterion 5 - the site hosts bird assemblages of international importance (JNCC, 2008).

3.5.28. The Ramsar site is included in this assessment for its criterion 5 (bird assemblage) interest which would comprise those species listed below for the SPA. Further, as the provisions on the Habitats Regulations relating to HRAs extend to Ramsar sites, the Conservation Advice packages for the overlapping European site designation (the Cromarty Firth SPA in this case) to be, in most cases, sufficient to support the management of the Ramsar interests.

3.5.29. Therefore, whilst this assessment will be based on the qualifying species and conservation objectives for the Cromarty Firth SPA, the conclusions reached would also apply to the Ramsar designation.

3.5.30. The Cromarty Firth SPA is designated for the following bird species:

- Bar-tailed godwit (non-breeding) (*Limosa lapponica*);
- Common tern (breeding);
- Curlew (non-breeding) (*Numenius arquata*)*;
- Dunlin (non-breeding) (*Calidris alpina alpina*)*;
- Greylag goose (non-breeding) (*Anser anser*);
- Knot (non-breeding) (*Calidris canutus*)*;
- Osprey (breeding) (*Pandion haliaetus*);
- Oystercatcher (non-breeding) (*Haematopus ostralegus*)*;
- Pintail (non-breeding) (*Anas acuta*)*;
- Red-breasted merganser (non-breeding)*;
- Redshank (non-breeding) (*Tringa tetanus*)*;
- Scaup (non-breeding) (*Aythya marila*)*;
- Whooper swan (non-breeding) (*Cygnus cygnus*);
- Wigeon (non-breeding) (*Anas penelope*)*; and
- Waterfowl assemblage (all indicated by *).

The Conservation Objectives for this site are as follows:

- To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and
- To ensure for the qualifying species that the following are maintained in the long term:
  - Population of the species as a viable component of the site;
  - Distribution of the species within site;
  - Distribution and extent of habitats supporting the species;
  - Structure, function and supporting processes of habitats supporting the species; and
  - No significant disturbance of the species.

DISTURBANCE EFFECTS – PREDATOR CONTROL

3.5.31. As above for the Moray Firth SPA, any impacts on the Cromarty Firth SPA and Ramsar would only relate to potential activities at locations in the Moray Firth. As shown on Figure 3-1, any activities at these locations would take place on the mainland and therefore most likely be accessed by foot. Therefore, any vessel related disturbance is discounted for this assessment.

3.5.32. In terms of human disturbance, the same assessment and conclusions for the above SPAs would also apply here i.e. in relation to potential effects through non-vessel related disturbance, due to the nature, scale, short/ intermittent duration, location (outside the SPA) of the potential impacts associated with any human activity and the implementation of standard practice avoidance measures, it can be concluded that activities related to predator

control will have a negligible (at worst) effect on any designated species and achieving the Conservation Objectives for the Cromarty Firth SPA and Ramsar, and therefore no LSE.

DISTURBANCE EFFECTS – DISTURBANCE REDUCTION

3.5.33. Due to similar likely activities and effects, the same assessment and its conclusions for predator control above, would also apply for the disturbance reduction measure and is not repeated here for brevity.

DISTURBANCE EFFECTS – ARTIFICIAL NESTING STRUCTURES

3.5.34. Due to similar likely activities and effects, the same assessment and its conclusions for predator control above, would also apply for the artificial nesting structure measure and is not repeated here for brevity.

CONCLUSIONS OF ASSESSMENT OF LIKELY SIGNIFICANT EFFECT ALONE

3.5.35. Screening for LSE alone was undertaken for ornithological features of the following sites:

- Outer Firth of Forth and St Andrews Bay Complex SPA – disturbance effects (including vessels in transit);
- Forth Islands SPA – disturbance effects (including vessels in transit);
- Moray Firth SPA – disturbance effects; and
- Cromathy Firth SPA and Ramsar (supporting habitat for birds) – disturbance effects.

3.5.36. While some of these sites were considered for both potential disturbance from vessels in transit and human presence, and some for just human presence, the same conclusion of no potential for LSE (on a negligible effects basis) was reached for all sites in relation to all potential impacts from the proposed predator control, artificial nesting structures and disturbance reduction measures alone.

3.6. ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS IN-COMBINATION

3.6.1. The likelihood of a project/activity to significantly effect a European site needs to be considered in terms of either effects of the project/activity alone or in-combination with other plans or projects; with the in-combination assessment expected to follow the approach outlined in the European Commission Notice Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive (EC, 2021).

3.6.2. However, for this No LSE Report, it is considered that an in-combination assessment is not necessary. This is based on the assessments for the proposed compensatory measures alone, where all conclusions are no LSE based on a negligible effect (at worst).

4. CONCLUSIONS

4.1.1. This No LSE Report provides an assessment of whether the proposed compensatory measures, specifically artificial nesting structures, predator control, and disturbance reduction measures, are likely to have an LSE on the NSN, either alone or in-combination with other projects, plans or activities.

4.1.2. An initial scoping exercise was conducted to identify relevant European sites and potential impacts on receptor groups. Through this process, the Outer Firth of Forth and St Andrews Bay Complex SPA, Forth Islands SPA, Moray Firth SPA and the Cromarty Firth SPA and Ramsar were identified for further consideration of potential LSE.

4.1.3. Assessment of potential LSE for these sites, and their Conservation Objectives, against potential impacts pathways, concluded that the likelihood of a significant effect on any of these sites from the proposed measures alone was negligible (at worst) based primarily on the nature, scale, duration and timing of the proposed measures, and the proposed employment of standard practice avoidance measures.

4.1.4. On the basis of the alone assessment conclusions of negligible effects (at worst), and therefore no material residual effects, an in-combination assessment was not considered necessary to ascertain the potential for LSE from the proposed compensatory measures in-combination with other plans or projects.

4.1.5. Therefore, based on this no LSE conclusion for all sites, there is no need to progress to Stage 2 AA.

5. REFERENCES

Council of the European Communities (1992). 'Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora'. Official Journal of the European Communities'. L206, pp. 7–50. Available online at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31992L0043 [Accessed: October 2024].

European Commission (2001). 'Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the 'Habitats' Directive 92/43/EEC'. November 2001.

European Parliament and Council of the European Union (2009). 'Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds'. Official Journal of the European Union, L20, pp. 7–25. Available online at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32009L0147 [Accessed: October 2024].

Joint Nature Conservation Committee (JNCC) (2008) Citation for Ramsar Site: Cromarty Firth, UK13009. [Accessed: November 2024].

Joint Nature Conservation Committee (JNCC) (2018). 'Forth Islands Special Protection Area: Standard Data Form'. Available at: https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9004171.pdf [Accessed 5 November 2024].

Joint Nature Conservation Committee (JNCC) (2020). 'Outer Firth of Forth and St Andrews Bay Complex SPA'. Available online at: https://jncc.gov.uk/our-work/outer-firth-of-forth-and-st-andrews-bay-complex-spa/ [Accessed: November 2024].

Muir Mhòr Offshore Wind Farm Limited. (2024). 'Report to Inform Appropriate Assessment'.

NatureScot (2022). 'Disturbance Distances for Selected Scottish Bird Species: NatureScot Guidance'. Available online at: https://www.nature.scot/doc/disturbance-distances-selected-scottish-bird-species-naturescot-guidance [Accessed: November 2024].

NatureScot (2023a). 'Outer Firth of Forth and St Andrews Bay Complex Special Protection Area (SPA'). Available online at: https://sitelink.nature.scot/site/10478 [Accessed: November 2024].

NatureScot (2023b). 'Forth Islands Special Protection Area (SPA)'. Available online at: https://sitelink.nature.scot/site/8500 [Accessed: November 2024].

NatureScot (2023c). 'Moray Firth (SPA)'. Available online at: https://sitelink.nature.scot/site/10490 [Accessed: November 2024].

NatureScot (2023d). 'Cromarty Firth (SPA)'. Available online at: https://sitelink.nature.scot/site/8488 [Accessed: November 2024].

United Kingdon Government (1994). 'The Conservation (Natural Habitats, &c.) Regulations 1994'. SI 1994/2716. Available online at: https://www.legislation.gov.uk/uksi/1994/2716/contents/made [Accessed: October 2024].

United Kingdon Government (2017). 'The Conservation of Habitats and Species Regulations 2017'. SI 2017/1012. Available online at: https://www.legislation.gov.uk/uksi/2017/1012/contents/made [Accessed: October 2024].

United Kingdon Government (2017). 'The Conservation of Offshore Marine Habitats and Species Regulations 2017'. SI 2017/10123 Available online at: https://www.legislation.gov.uk/uksi/2017/1013/contents/made [Accessed: October 2024].