Chapter 8 – Marine Ecology and Biodiversity

Neven Point Pier EIA Report

Neven Point Wind Limited

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Acronyms and Abbreviations

BWM	*Ballast Water Management*
CIEEM	*Chartered Institute of Ecological and environmental Management*
EIA	*Environmental Impact Assessment*
FeAST	*Feature Activity Sensitivity Tool*
GB	*Great Britain*
GeMS	*Geodatabase of Marine features adjacent to Scotland*
HRA	*Habitats Regulations Appraisal*
IEF	*Important Ecological Features*
IUCN	*International Union for the Conservation of Nature*
JNCC	*Joint Nature Conservation Committee*
LBAP	*Local Biodiversity Action Plan*
LDP	*Local Development Plan*
LNCS	*Local Nature Conservation Site*
LSE	*Likely Significant Effect*
mINNS	*Marine Invasive Non-native Species*
MMO	*Marine Mammal Observer*
MS	*Marine Scotland*
NMPi	*National Marine Planning Initiative*
NPF4	*National Planning Framework 4*
OIC	*Orkney Islands Council*
OST	*Orkney Skate Trust*

PMF	*Priority Marine Feature*
SCOS	*Special Committee on Seals*
SAC	*Special Area of Conservation*
SBL	*Scottish Biodiversity List*
SMEEF	*Scottish Marine Environmental Enhancement Fund*
SMU	*Seal Management Unit*
SPA	*Special Protection Area*
SPP	*Species Protection Plan*
SSSI	*Site of Special Scientific Interest*
WANE	*Wildlife and Natural Environmental Act*
WCA	*Wildlife and Countryside Act*
ZoI	*Zone of Influence*

8. Marine Ecology and Biodiversity

8.1 Executive Summary

8.1.1 This section of the EIA Report considers potential impacts of the Proposed Development upon marine ecology and biodiversity. The assessment process involved primarily a desk-based review of available information, and a review of otter survey data. The assessment identified sensitive receptors, potential impacts during construction, operation and decommissioning, residual impacts and mitigation measures.

8.1.2 The assessment identified the following Important Ecological Features (IEFs) as sensitive to potential impacts and effects:

- Designated Sites
- Ornithology
- Marine Mammals
- Fish
- Otter
- Marine Annex I Habitats
- Other PMFs

8.1.3 During the construction and decommissioning phases, the main potential impacts are considered to be pollution of the marine environment, resulting in direct and indirect effects to IEFs, disturbance/displacement of foraging, roosting, commuting or nesting faunal IEFs, damage/degradation Annex 1 or PMF habitats, and loss of resting habitat for otter. During the operational phase, the potential impacts are considered to be similar to that of the construction and decommissioning phases, though higher numbers of vessel movements are considered likely to increase the magnitude of the potential effects for some IEFs.

8.1.4 Suitable mitigation includes targeted pre-works surveys, a Construction Environmental Management Plan, inclusive of standard pollution prevention controls, Species Protection Plans for relevant IEFs, a Vessel Management Plan, and appropriate biosecurity plan.

8.1.5 Overall, the assessment concluded that even with mitigation, residual effects are expected as a result of the operational phase only. For the North Orkney SPA and Mill Loch SSSI, and ornithology interests generally, these are expected to be temporary in nature and of low significance. For selected designated sites (the Muckle and Little Green Holm SSSI, Sanday SAC, Eynhallow SSSI, Faray and Holm of Faray SAC/SSSI), marine mammals and basking shark, residual effects are anticipated to be permanent in nature but of low significance. There is also the

potential for cumulative effects with other project proposals, though it is anticipated that with mitigation, these will not result in residual effects.

8.1.6 The Proposed Development is committed to providing meaningful enhancements for biodiversity, in accordance with National Planning Framework 4. Feasible enhancement options have been provided within this Chapter, with a commitment to developing a Biodiversity Enhancement and Management Plan prior to construction commencing.

8.2 Introduction

8.2.1 This chapter considers the potential impacts of the Proposed Development on marine ecology and biodiversity, arising from the construction and operation of a small landing point comprising a permanent causeway with temporary floating pier to allow transportation of wind turbine components by vehicular ferry to the southeast of the island of Eday, Orkney. The scope of the chapter covers impacts on designated sites, marine mammals and fish, ornithology, otter (*Lutra lutra*), marine Annex I habitats and Priority Marine features (PMFs). The ecological surveys conducted which support this chapter included an intertidal survey conducted by Seastar Survey Ltd and an otter survey conducted by Firth Ecology Ltd (as detailed in **Paragraph 8.2.3** below)

8.2.2 For the purposes of this baseline assessment, the “Proposed Development” encompasses both the footprint of the construction of the proposed landing point on the isle of Eday, and the proposed vessel route (Hatston Pier, Kirkwall to Eday) - which is anticipated to be used for transport of materials to facilitate the construction of the pier and its subsequent operation (which encompasses its use to facilitate the construction and operation of the Neven Point Wind Farm). Where each aspect of the development is referred to separately, the proposed landing point is hereafter referred to as ‘the landing point’ and the proposed vessel route as ‘the vessel route’. Where the Neven Point Wind Farm is referred to, this is simply referred to as the ‘Wind Farm’.

8.2.3 The outcomes and appraisal of baseline and targeted studies have informed this Chapter. These studies are presented as the following Technical Appendices contained in Volume 4 of the Environmental Impact Assessment (EIA) Report:

- **Appendix 8.1: Intertidal Survey Report;**
- **Appendix 8.2: Otter Survey Report;**
- **Appendix 8.3: Marine Mammal and Fish Baseline;**
- **Appendix 8.4: Ornithology Baseline;**
- **Appendix 8.5: Outline Otter Species Protection Plan (SPP);** and
- **Appendix 8.6: Shadow Habitats Regulations Appraisal (HRA).**

8.2.4 This Chapter is supported by the following figures contained in Volume 2 of this EIA Report:

- **Figure 8.1: Designated Sites**; and

- **Figure 8.2: Seal Haul Out Sites.**

8.2.5 The purpose of this Chapter and the associated Figures and Technical Appendices is to:

- identify and describe the Important Ecological Features (IEFs) which may be impacted by the Proposed Development;
- identify and describe all potentially significant ecological effects associated with the Proposed Development;
- set out the mitigation measures required to ensure compliance with nature conservation legislation and policy, and to address any potentially significant ecological effects;
- identify how mitigation measures will be secured;
- provide an assessment of the significance of any residual effects;
- detail appropriate plans to deliver meaningful biodiversity enhancements in line with planning policy (as detailed in **Paragraph 8.3.3** below) and the Orkney Islands Council (OIC) Local Development Plan (LDP) (OIC, 2017a); and
- set out any requirements for mitigation, compensation and enhancement monitoring.

8.3 Legislation, Policy & Guidance

Legislation

8.3.1 Relevant legislation and guidance documents have been reviewed and taken into account as part of this assessment. Of particular relevance are:

- **European Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora** – promoted restoration and protection of natural habitats and species listed in the Annexes to the Directive.
- **The Wildlife and Countryside Act (WCA) 1981** – combines existing national legislation to implement European legislation. The Act sets out a range of offences against birds, other wildlife, vegetation and invasive non-native species.
- **The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (also known as the 'Habitats Regulations)** – implemented Council Directive 92/43/EEC on the conservation natural habitats and of wild flora and fauna, which includes provision for licensing of European Protected Species and requirements for threatened habitats and species.
- **The Nature Conservation (Scotland) Act 2004 (as amended)** – places a duty on public bodies to further conservation of biodiversity, increases protection for Special Sites of Scientific Interest (SSSIs) and strengthens wildlife enforcement legislation.
- **The Wildlife and Natural Environment (WANE) (Scotland) Act 2011** – relates to the way land is managed, principally affecting game shooting, species protection and new wildlife offences.

- **Water Framework Directive (WFD) 2000/60/EC of the European Parliament Planning Policy**[1] – focuses on ensuring good qualitative and quantitative health, i.e. on reducing and removing pollution and on ensuring that there is enough water to support wildlife at the same time as human needs.
- **Conservation of Seals Act 1970** – an act to provide for the protection and conservation of seals in Scotland (and England and Wales) and adjacent territorial waters.
- **Marine (Scotland) Act 2010** – this act intends to provide a framework to help balance competing demands on Scotland's seas, with a duty to protect and enhance the marine environments through marine planning, licensing, conservation and enforcement.
- **Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003** – enacted to consolidate and modernise previous legislation in relation to the management and protection of salmon and freshwater fisheries in Scotland.

Policy

8.3.2 This section considers the relevant aspects of National Planning Framework 4 (NPF4), Planning Advice Notes and other relevant guidance. Of relevance to the assessment presented within this chapter, regard has been had to the following policies:

- **National Planning Framework 4 (NPF4)** (Scottish Government, 2022) – focuses on addressing climate change through sustainable planning (Policy 1 – Tackling the Climate Emergency); spatial development priorities (Policy 3 – Biodiversity); ensuring natural places and protected and enhanced, supporting biodiversity and nature-based solutions (Policy 4 - Natural Places); and the creation of high-quality, sustainable and well-designed places (Policy 5 – Quality Places);
- **Scottish Biodiversity Strategy to 2045: Tackling the Nature Emergency in Scotland** (Scottish Government, 2023) – outlines Scotland's long-term approach to addressing the biodiversity crisis. The strategy focuses on integrating nature into policy, increasing conservation efforts, tackling threats like habitat destruction and climate change, and enhancing the health of ecosystems through proactive measures and collaboration across sectors and communities;
- **Planning Advice Notice 60 Planning for Natural Heritage** (Scottish Government, 2000) – provides guidance which encourages the consideration of conservation, enhancement and sustainable management of natural heritage throughout the planning process and aims to support developments that contribute to the economy whilst maintaining environmental integrity;
- **Scotland's National Marine Plan** (Marine Directorate, 2015) – a plan setting out strategic policies for the sustainable development of Scotland's marine

[1] Whilst the WFD originates from the EU, it has been retained in UK law following the UK's exit from the European Union (EU). The Environment (EU Exit) (Scotland) (Amendment etc.) Regulations 2019 is the implementing legislation which ensures principals of the Directive are largely retained within Scottish legislation.

resources covering the management of both Scottish inshore waters (out to 12 nautical miles) and offshore waters (12 to 200 nautical miles).

- **Orkney LDP 2017 – 2022** (OIC, 2017a) – Policies 7 and 9 which focus on supporting the use of renewable technologies whilst ensuring that there are no unacceptable impacts on relevant environmental and community considerations (Policy 7 – Energy); and protecting the natural environment from the detrimental effects of development and ensuring longevity for future generations, and ensuring the environment and its receptors are protected throughout the lifespan of a development (Policy 9 – Natural Heritage and Landscape); and
- **Orkney Local Biodiversity Action Plan (LBAP)** (OIC, 2018) – it should be noted that as per the OIC website, there is no LBAP for Orkney, as the LBAP partnership ceased to operate in March 2024, and OIC noted that is should be used for "*historical reference use only".*

Guidance and Publications

8.3.3 Cognisance has been given to the following key best practice guidelines and relevant publications:

- Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2024);
- Scottish Government Draft Planning Guidance: Biodiversity (Scottish Government, 2023);
- The International Union for the Conservation of Nature (IUCN) Red List of Threatened Species (IUCN, 2025);
- Planning and development: standing advice for planning consultations – Otter. (NatureScot, 2024);
- Marine Biosecurity Planning – Guidance for producing site and operation-based plans for preventing the introduction of non-native species (Payne et al., 2014);
- Special Committee on Seals (SCOC) Scientific Advice on Matters Related to the Management of Seal Populations 2021 (SCOC, 2021);
- The Scottish Biodiversity List (SBL) (NatureScot, 2022a);
- Priority Marine Features in Scotland's Seas – The List (NatureScot, 2020);
- Feature Activity Sensitivity Tool (FeAST) (NatureScot, 2023a);
- Marlin Life Information Network (MarLIN) (MarLIN, 2025); and
- Development Management Guidance, Considering and Including Biodiversity in Development (OIC, 2024).

8.4 Consultation

8.4.1 A pre-application request for advice was submitted to NatureScot by the Applicant on 8th January 2025, with a response received on 19th February 2025. A summary

of NatureScot's response has been provided in **Table 8.1** below and is shown in **Volume 4, Technical Appendix 4:1** of this EIA Report.

Table 8.1: Pre-Application Request for Advice – NatureScot Response

Consultation Response	Applicant Action
Designated Sites – *the proposal has connectivity with SPAs within the foraging range of various qualifying features including birds and seals. Sites of concern were the North Orkney Special Protection Area (SPA), Calf of Eday SPA, Mill Loch Site of Special Scientific Interest (SSSI), Doomy and Whitemaw Hills SSSI, Sanday Special Area of Conservation (SAC), Faray and Holm of Faray SAC and Muckle and Little Green Holm SSSI. Key species of concern are Red-throated Diver, Slavonian Grebe, Velvet Scoter, grey seal and harbour seal. There is potential for a Likely Significant Effect (LSE) on these species as a result of vessel movements, specifically if there is a significant increased in vessel traffic and/or novel routes.*	The designated sites highlighted by NatureScot have been assessed appropriately within this Chapter, and **Appendix 8.6: Shadow HRA**. The Applicant has been encouraged to use already established vessel routes for the transport of materials, and at the time of writing this was assumed to be the existing inter-island Kirkwall to Eday route, with the departure post expected to be Hatston. Anticipated vessel movements are detailed in **Volume 1, Chapter 3: Proposed Development** of this EIA Report.
Ornithology Baseline – *an ornithology baseline study for all birds in and around the surrounding area of the development should be included in the EIA Report. Additional survey work may not need to be specifically commissioned if other adequate site-specific information collected for other purposes up to five years old is available. The baseline may therefore be achieved through a desk-based study of existing recent bird records (i.e. within the last five years). If this is not possible, a survey of the area plus a relevant buffer would be required.*	A desk-based ornithological baseline has been prepared in support of this Chapter, as provided in **Volume 4, Technical Appendix 8.4: Ornithology Baseline.** In cognisance of this, and the precautionary approach taken to this assessment, it was not considered at the time of writing that ornithology surveys were required to inform the EIA Report.
PMFs – NatureScot considers that *there is no significant risk of impacting the national status of any PMFs as a result of the proposed works. The applicant has described appropriate mitigation, and we welcome the proposal to submit a Construction Environmental Management Plan (CEMP) for approval before works commence.*	PMFs have been assessed appropriately within this Chapter, and consultants have come to the same broad conclusion as NatureScot. The requirement to produce a CEMP for approval by NatureScot (and OIC Marine Services) prior to works commencing has been specified in the mitigation requirements (see **Section 8.9**).
Marine Invasive Non-Native Species (mINNS) – *As this is a new manmade structure it does pose a potentially good attachment surface for mINNS, therefore strong biosecurity principles should be in place. The applicant should be aware of the six species of marine INNS that have been found at the existing pier.*	Recommendations in line with those made by NatureScot have been specified in the mitigation requirements (see **Section 8.9**).
Otter - *There is the potential for otters to be present in and around the location of the proposal, which has been confirmed by the 2024 otter survey. Further information on what is required to safeguard otters is provided in the standing advice on our website.*	Otter have been appropriately assessed within this Chapter. Specific mitigation has been outlined in **Section 8.9** and **Appendix 8.5: Outline Otter Species Protection Plan (SPP)**

Consultation Response	Applicant Action
Where proposed work activities could affect otters, developers may require a licence in order to proceed legally.	
Seals - *There is the potential for impacts to both grey and harbour seals from the proposed development. We recommend impacts to seals are assessed for all phases of the development. As well as potential connectivity to the European Sites and SSSIs detailed above there are a number of designated seal haul-outs close to the proposal. Information on designated seal haul-outs can be found on the NMPi website.*	Seals have been appropriately assessed within this Chapter. Specific mitigation has been outlined in **Section 8.9**. This has been informed via review of information on the NMPi website.
Biodiversity Enhancement - *We advise that:* • *Information on predicted losses, and the proposed mitigation, compensation and enhancement should be clearly set out, and also concisely summarised, in the application, so that this can be easily understood by decision makers.* • *The proposal should clearly set out the type and scale of enhancement it will deliver, ensuring that the application clearly distinguishes between those elements mitigating or compensating for adverse effects and those delivering enhancement.* • *On-site enhancement should be prioritised before off-site delivery. Where purely on-site enhancement is not possible, the Scottish Government draft guidance sets out further considerations for off-site delivery.* • *It is also important that the application demonstrates that the enhancement is to be secured within a reasonable timescale and with reasonable certainty, including appropriate management and monitoring arrangements, and sustained for the future (preferably in perpetuity) in order to deliver a lasting legacy.* • *Enhancement requires consideration of all biodiversity, not just the significant effects that are the focus of EIA.*	Biodiversity enhancements have been suggested in line with NatureScot's suggestions, as detailed in **Section 8.12.**

8.5 Assessment Methods & Significance Criteria

Study Area

8.5.1 The Study Area for the Proposed Development is separated into areas associated with the desk study 'Study Area' and those associated with field surveys 'Survey Area'. These often have receptor-specific buffers, based on guidance and expert ecological knowledge, and are summarised below.

8.5.2 Designated Sites – a desk-based assessment for statutory designated sites within an appropriate distance of the Proposed Development (in cognisance of the mobility of their qualifying features), including along the proposed vessel route, was conducted (**Figure 8.1: Designated Sites**). Primary sources of information

for this included the NatureScot Sitelink website (NatureScot, 2025a) and OIC guidance (OIC, 2017b).

8.5.3 Intertidal Habitats – a site survey was conducted by Seastar Surveys Ltd in November 2024. The survey encompassed the intertidal footprint of the Proposed Development and approximately (approx.) 130 meters (m) of the foreshore to the east, encompassing the full width of the foreshore. For full details of the survey methods please see **Volume 4, Technical Appendix 8.1: Intertidal Survey Report**.

8.5.4 Marine Mammals and Fish – a desk-based assessment for records of marine mammals and fish was conducted up to 10 km from the Proposed Development, with full details of sources utilised and search parameters provided in **Volume 4, Appendix 8.3: Marine Mammal and Fish Baseline**.

8.5.5 Ornithology – a desk-based assessment for records of ornithological features of interest was conducted up to 10 km from the Proposed Development, with full details of sources utilised and search parameters provided in **Volume 4, Technical Appendix 8.4: Ornithology Baseline**. This included a review of the data collected to support the Wind Farm development (assessed within a separate EIA Report, see the EIA Report for the Neven Point Wind Farm for full details). It is key to note that the survey areas for the Wind Farm did not encompass the Proposed Development, but the data does provide an overview of the prevalence and activity of some key bird species considered in this EIA Report.

8.5.6 Otter – a site survey was conducted by Firth Ecology on single days in May and June 2023, with an update in October 2024. In 2023 the survey area encompassed the shoreline 300m to the east and west of the Pier, with the survey area extended to the ditches along the roadsides. In 2024 the survey area was restricted to the shoreline exclusively due to lack of unsuitable habitat for otter in the ditches.

8.5.7 Marine Annex I Habitats – A review of the Marine Scotland (MS) National Marine Planning Initiative (NMPi) (MS, 2025) layer ‘Intertidal and Shelf Habitats – Annex I Habitats’ was conducted to identify Annex I habitats within up to 5 km of the Proposed Development.

8.5.8 Other PMFs (non-fish) – A review of the MS NMPi ‘Intertidal and Shelf Habitats – Priority Marine Features’ layer (MS, 2025) and the NatureScot Geodatabase of Marine features adjacent to Scotland (GeMS) database (NatureScot, 2025b) was conducted to identify other PMFs (non-fish) within 5 km of the Proposed Development.

8.5.9 Marine Invasive Non-native Species (mINNS) - A review of the MS NMPi ‘Non-native species’ layer (MS, 2025) and OIC mINNS monitoring research (Kakkonen

et al., 2019) was undertaken for records of mINNS within the immediate vicinity of the Proposed Development.

Assessment of Significance

8.5.10 The evaluations are applied to those sites, habitats and species that have been scoped into the assessment. These are termed Important Ecological Features (IEFs).

8.5.11 European, national and local governments and specialist organisations have together identified a large number of sites, habitats and species that provide the key focus for biodiversity conservation in the UK and Ireland, supported by policy and legislation. These provide an objective starting point for identifying the important ecological features that need to be considered. **Table 8.2** below shows a procedure for determining the level of importance, mostly in a geographical context, of site designations, habitats and species. Where a feature is important at more than one level in the table, its overriding importance is that of the highest level. Usually only the highest level of legal protection is listed. Specific criteria for ornithological interests are included in **Table 8.3** overleaf.

Table 8.2: Levels of Importance for IEFs.

Level of Importance	Sites	Habitats	Species
International	Designated, candidate or proposed Special Areas of Conservation, Special Protection Areas and Ramsar sites; UNESCO (Ecological) World Heritage Sites; UNESCO Biosphere Reserves; Biogenetic Reserves.	A viable area of habitat included in Annex I of the EC Habitats Directive; a habitat area that is critical for a part of the life cycle of an internationally important species.	A European Protected Species (EPS); an IUCN Red List species that is globally Vulnerable, Endangered or Critically Endangered.
National (UK)	Sites of Special Scientific Interest/Areas of Special Scientific Interest; National Nature Reserves; Nature Conservation Review Sites; Marine Conservation Zones (UK offshore).	An area of habitat fulfilling the criteria for designation as an SSSI or MCZ; a habitat area that is critical for a part of the life cycle of a nationally important species.	An IUCN Red Data Book species that is Vulnerable, Endangered or Critically Endangered in the UK; a species that is Rare in the UK (<15 10 kilometre (km) grid squares); a Schedule 5 (animal) or Schedule 8 (plant) species included in the Wildlife and Countryside Act (WCA) 1981; any species protected under national (UK) legislation where there is the potential for a breach of the legislation.
National (Scotland)	National Parks; Marine Protected Areas (MPAs) (Scotland offshore); Marine	Habitats of principal importance for biodiversity, including habitats listed under either the SBL or Priority	Species of principal importance for biodiversity in

Level of Importance	Sites	Habitats	Species
	Consultation Areas (Scotland).	Marine Features (PMF) lists.	the relevant countries[2], including species listed under the SBL or PMF lists.
Regional	Regional Parks (Scotland).	Regional Local Biodiversity Action Plan habitats noted as requiring protection.	A species that is Nationally Scarce in the UK (present in 16-100 10 km grid squares); a species that is included in the Regional LBAP; an assemblage of regionally scarce species.
Council / Metropolitan	Local Nature Reserves; Woodland Trust Sites; Royal Society for the Protection of Birds Sites; Local Wildlife Sites (Scotland).	Council area LBAP habitats noted as requiring protection.	A species that is included in the Council area LBAP; an assemblage of species that are scarce at the Council area level.
Local		Semi-natural habitats that are unique or important in the local area.	Species as defined by Local Authority lists (if available).
Site		Common and widespread habitats not covered above.	Common and widespread species not covered above.
Negligible		Habitats that have no significance to a site.	Species that are of no significance.
Negative			An INNS as defined by the GB Non-Native Species Secretariat (NNSS) and supported by the GB Invasive Non-native Species Strategy (2015), legally controlled species under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended by the relevant country legislation), or listed within OICHA Ballast Water Policy.

[2] These are all the species that were identified as requiring action in the UKBAP and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework, including any additions.

Table 8.3: Geographical Level of Importance for Ornithological IEFs.

Level of Importance	Assessment Criteria		
	Legal Protection	Conservation Status	Population Size
International	Any species within Annex 1 of the EU Birds Directive	Any species which is listed as Critically Endangered or Endangered on the IUCN Red List	Supporting greater than 1% of the EU population
National (UK)	Any species within Schedule 1 of the Wildlife and Countryside Act	Any species on the Bird of Conservation Concern (BoCC) Red List	Supporting greater than 1% of the UK population
National (Scotland)		Any species on the SBL	Supporting greater than 5% of the Scottish population
Regional		Any species on the BoCC Amber List	Supporting greater than 0.5% of the UK population
County		Any species that is listed as a Priority Species in the LBAP	Supporting greater than 0.05% of the UK population
Local		BoCC Green List; or species with no conservation concern; common and widespread throughout the UK	Supporting less than 0.05% of the UK population

Characterising Ecological Impacts

Assessment Criteria - Magnitude

8.5.12 The following factors will be considered when characterising the potential magnitude of a particular impact:

- magnitude (size, amount, intensity and volume);
- extent (geographical area or size of population likely to be affected);
- duration (short, medium or long-term, permanent or temporary);
- frequency and timing; and
- reversibility.

8.5.13 Magnitude refers to the size, amount, intensity and volume of an impact, determined on a quantitative basis if possible, but typically expressed in terms of relative severity, such as major, moderate, low or negligible. Extent, duration,

reversibility, timing and frequency of the impact can be assessed separately but they tie in to determine the overall magnitude.

8.5.14 Criteria for describing the magnitude of an impact are presented in **Table 8.4** below:

Table 8.4: Criteria for Describing Magnitude of Impact.

Magnitude	Description
Major	Total or major loss or alteration to the IEF, such that it will be fundamentally changed and may be lost from the site altogether; and/or loss of a very high or high proportion of the known population or range of the IEF.
Moderate	Loss or alteration to the IEF, such that it will be partially changed; and/or loss of a moderate proportion of the known population or range of the IEF.
Low	Minor shift away from the existing or predicted future baseline conditions. Change arising from the loss or alteration will be discernible but the condition of the IEF will be similar to the pre-development conditions; and/or having a minor impact on the known population or range of the IEF.
Negligible	Very slight change from the existing or predicted future baseline conditions. Change barely discernible, approximating to the 'no change' situation; and/or having a negligible impact on the known population or range of the IEF.

Assessment Criteria – Significance

8.5.15 The definition of a significant effect adopted in this assessment is one which, in isolation or in combination with others, is material to the environment and should be considered in the decision-making process.

8.5.16 For the purposes of EcIA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for IEFs. In broad terms, significant effects encompass effects on the structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).

8.5.17 Significant effects are quantified with reference to an appropriate geographic scale (see **Tables 8.2** and **8.3** above). The CIEEM guidance suggests different characteristics to define the 'level of importance' and geographical 'scale of significance'. This is to deal with the fact that the geographical scale at which the effect is significant is not necessarily the same as the geographic level of importance of the IEF.

8.5.18 The significance of an effect is determined by the interaction between its magnitude and the sensitivity/importance of affected receptors. Effects can be considered significant at a wide range of geographical scales from international to local. Professional judgement is used to determine the likely significance of effects based on an assessment of the available data and an understanding of how a

specific ecological feature is likely to be affected by the activities associated with the Proposed Development.

8.5.19 A sensitivity scale is used to assist in determining the significance of effects, as shown in **Table 8.5** below.

Table 8.5: Sensitivity of IEFs.

Sensitivity	Definition
High	Tolerance: The IEF has a very limited tolerance of the effect.
	Adaptability: The IEF is unable to adapt to the effect.
	Recoverability: The IEF is unable to recover, resulting in permanent or long term (>10 years) change.
Medium	Tolerance: The IEF has limited tolerance of the effect.
	Adaptability: The IEF has limited ability to adapt to the effect.
	Recoverability: The IEF is able to recover to an acceptable status over the medium term (5-10 years).
Low	Tolerance: The IEF has some tolerance of the effect.
	Adaptability: The IEF has some ability to adapt to the effect.
	Recoverability: The IEF is able to recover to an acceptable status over the short term (1-5 years).
Negligible	Tolerance: The IEF is generally tolerant of the effect.
	Adaptability: The IEF can completely adapt to the effect with no detectable changes.
	Recoverability: The IEF is able to recover to an acceptable status near instantaneously (<1 year).

Assessment Criteria – Confidence in Predictions

8.5.20 CIEEM does not cover levels of confidence in predictions adequately, therefore an approach has been adopted based on river conservation evaluation (NatureScot, 2001). A simple, qualitative index based on professional judgement is assigned to each predicted effect as follows:

- A: high confidence.
- B: intermediate confidence.
- C: low confidence.

8.5.21 Factors influencing confidence include:

- the frequency and effort of field sampling;
- constraints to the field survey;
- the completeness of the data (field and desk);
- the age of the data (although recent data are not necessarily always more reliable than old data);
- the state of scientific knowledge relating to the predicted effects of development activities on the IEF (the accuracy of the magnitude assessment); and

- the accuracy of the assessment of significance.

Assessment Criteria – Success of Mitigation

8.5.22 The word ‘mitigation’ has developed a wider meaning and common usage in environmental assessment than its strict meaning related to reducing the severity of something. Mitigation can sometimes be used as a generic term for a wide range of counter-acting measures, all of which, as the Directive and Regulations prescribe, are intended to prevent, reduce and where possible offset any significant adverse effect on the environment. Mitigation can be used to encompass measures intended to avoid, minimise or compensate for adverse effects (this is the ‘mitigation hierarchy’).

8.5.23 Mitigation and compensation measures often carry a degree of uncertainty. Uncertainty associated with a design will vary according to a number of factors, such as:

- the technical feasibility of what is proposed;
- the overall quantity of what is proposed;
- the overall quality of what is proposed;
- the level of commitment provided to achieve what is proposed;
- the provision of long-term management; and
- the timescale for predicted benefits.

8.5.24 The following objective scale is used for the success of mitigation:

- certain/near certain: probability estimated at 95% chance or higher;
- probable: probability estimated above 50% but below 95%;
- unlikely: probability estimated above 5% but less than 50%; and
- extremely unlikely: probability estimated at less than 5%.

Zone of Influence

8.5.25 Following CIEEM guidance (2024), the zone of influence (ZoI) for the project is the area over which ecological receptors may be affected by biophysical changes because of the proposed project and any associated activities. Often, this can extend beyond the site boundary for mobile species (e.g. otter), and for activities with wide ranging impacts (e.g. noise and vessel movements). The ZoI is defined for relevant IEFs in **Section 8.7**.

Limitations to Assessment

Ornithology

8.5.26 The lack of site specific ornithological data is considered to be a limitation to the assessment. Although ornithology surveys have been conducted in the vicinity of the Proposed Development to inform the associated Wind Farm EIA report, these

did not cover the marine environment adjacent to the landing point on Eday. However, there is existing data from the wider Orkney area, the findings of which are considered relevant to inform the impacts and effects assessed within this EIAR. This limitation is considered to have been ameliorated by the precautionary approach taken to the impact assessment, and the mitigation outlined in **Section 8.9.**

Otter

8.5.27 The 2024 otter survey was undertaken after a period of heavy rainfall, which may impact the viability of the returned results, particularly in locations where otter signs were not found in the 2024 surveys where they had been observed during the previous survey. These uncertainties have been addressed by the precautionary approach taken to the assessment, and the mitigation outlined in **Section 8.9** and **Volume 4, Technical Appendix 8.5: Outline Otter Species Protection Plan (SPP).**

8.6 Baseline

Current Baseline

8.6.1 This section describes the baseline ecological conditions within the vicinity of the Proposed Development.

Designated Sites

8.6.2 A map showing the location of the designated sites in relation to the Proposed Developments shown in **Volume 3, Figure 8.1: Designated Sites** of this EIA Report. Full details of designated sites considered in this Chapter, and the occurrence of their designated features within the vicinity of the Proposed Development are provided in **Volume 4, Technical Appendix 8.3: Marine Mammal and Fish Baseline** and **Technical Appendix 8.4: Ornithology Baseline**. A summary of the designated sites considered is provided in **Table 8.6** below.

Table 8.6: Designated Sites within the Vicinity of the Proposed Development.

Site Name and Designation	Distance to Proposed Development[3]	Qualifying Features
North Orkney SPA	Within (vessel route)	Breeding: • Red-throated Diver (*Gavia stellata*) Non-breeding: • Great Northern Diver (*Gavia immer*)

[3] This is generally as the crow flies but for mobile marine features such as cetaceans, seals and fish, has been given via sea and marked with an asterisk (*). The 'Proposed Development' in this case encompasses the site of the pier development and the vessel route, and which aspect of the Proposed Development the IEF is in closest proximity to is indicated in brackets underneath the distance.

Site Name and Designation	Distance to Proposed Development[3]	Qualifying Features
		• Slavonian Grebe (*Podiceps auritus*) • Velvet Scoter (*Melanitta fusca*)
Ve Ness Nature Conservation Site (LNCS)	0.7 km south (landing point)	Special Habitats: • Upland heath • Blanket bog • Crowberry Special Wildlife • Common Gull (*Larus canus*) • Dunlin (*Calidris alpina*) • Curlew (*Numenius arquata*) • Lapwing (*Vanellus vanellus*) • Redshank (*Tringa totanus*) • Skylark (*Alauda arvensis*) • Snipe (*Gallinago gallinago*) • Twite (*Linaria flavirostris*)
Muckle and Little Green Holm SSSI	1.0 km north* (vessel route)	Grey seal (*Halichoerus grypus*)
Ward Hill and Chapel Hill LNCS	1.5 km north west (landing point)	Special Habitats: • Upland heath • Blanket bog • Crowberry Special Wildlife: • Arctic Tern (*Sterna paradisaea*) • Arctic Skua (*Stercorarius parasiticus*) • Curlew • Great Skua (*Stercorarius skua*) • Golden Plover (*Pluvialis apricaria*) • Lapwing • Snipe • Skylark • Twite
Doomy and Whitemaw Hill SSSI	2.5 km north west (landing point)	Breeding: • Arctic Skua • Whimbrel (*Numenius phaeopus*)
Calf of Eday SPA	6.2km north (landing point)	Breeding seabird assemblage: • Cormorant (*Phalacrocorax carbo*) • Fulmar (*Fulmarus glacialis*) • Great Black-backed Gull (*Larus marinus*) • Guillemot (*Uria aalge*)

Site Name and Designation	Distance to Proposed Development[3]	Qualifying Features
		• Kittiwake (*Rissa tridactyla*)
Mill Loch SSSI	6.4 km north (landing point)	Breeding: • Red-throated Diver
Calf of Eday SSSI	8.2 km north (landing point)	Breeding: • Cormorant
Sanday SAC	9.4 km north east* (vessel route)	Marine Habitats: • Intertidal mudflats and sandflats • Reefs • Subtidal sandbanks Marine Mammals: • Harbour seal (*Phoca vitulina*)
Eynhallow SSSI	13.3 km west* (vessel route)	Harbour seal
Faray and Holm of Faray SAC	13.5 km north west* (vessel route)	Grey seal
Faray and Holm of Faray SSSI	14.4km north west* (vessel route)	Grey seal

North Orkney SPA

8.6.3 The North Orkney SPA encompasses waters to the north of the Orkney Mainland, from Deerness in the east to Eynhallow in the west. It includes a variety of sheltered bays as well as tidal channels around some of the smaller islands including the Rousay and Eynhallow Sounds. The water depth is generally less than 20m and sediments are a mixture of mud, sand and gravel. These habitats support a variety of marine invertebrates, providing a key prey resource for large numbers of waterfowl, including the species for which the site is designated. The site protects winter populations of Great Northern Diver, Slavonian Grebe and Velvet Scoter, as well as foraging grounds for breeding Red-throated Diver.

8.6.4 A review of data gathered to support the Wind Farm observed the following in relation to each of the North Orkney SPA qualifying features:

- Great Northern Diver – Great Northern Diver flight lines were occasionally and irregularly recorded during VP surveys, mostly in spring or autumn/early winter which indicates these individuals were likely migrating. There was a fairly even split between birds flying over the water around War Ness (the southern tip of Eday) and those cutting across the land. From a total of 18 shore counts throughout the year, Great Northern Divers were seen on nine occasions either side of War Ness, each time with just one or two birds present within a few hundred metres of the shore. These included two summering immatures in June 2019.

- Red-throated diver – Flight directions were varied and included flights east to west across War Ness, or looped across the higher parts of the island. Any birds flying westwards at War Ness were followed for as far as possible to check their likely destination – of these, none were seen to head towards the North Orkney SPA, rather going out of sight northwards along the west side of Eday. However, there is the possibility that birds arriving from the west could have come from the SPA. Breeding checks at suitable pools on Eday (the closest of which is 2.2 km north west of the Proposed Development) revealed only two nesting attempts, neither of which were successful. From eight summer shore counts just two single red-throated divers were seen offshore at War Ness, both within the Bay of Greentoft, in April 2019 and May 2022. This low frequency of occurrence offshore is in line with the rather low flight rates observed from VPs.
- Slavonian Grebe and Velvet Scoter – Velvet Scoter were not seen at all from any survey work, and only one Slavonian Grebe was seen from 11 shore counts across two winters.

Veness LNCS

8.6.5 According to OIC (2017b), the Veness LNCA is an area of heather moorland surrounded by improved grassland, supporting a variety of breeding waders, a breeding Common Gull colony, and other breeding passerines.

8.6.6 A review of ornithology data gathered to support the Wind Farm observed that all of the qualifying features of the LNCS were observed to some degree throughout the surveys.

Muckle and Little Green Holm SSSI

8.6.7 The site is made up of two small uninhabited islands which lie between the larger islands of Shapinsay and Eday. Their rocky coasts are used by breeding grey seals. In 2010 the pup count was estimated to be 900, representing c. 2% of the UK pups. The site was classed as being favourable maintained in the last (2014) Condition Assessment.

Ward Hill and Chapel Hill LNCS

8.6.8 According to OIC (2017b), the Ward Hill and Chapel Hill LNCS consists of a large area of hill ground, with important habitats both in themselves and in their ability to supporting breeding waders, skuas, terns, gulls and passerines.

8.6.9 A review of ornithology data gathered to support the Wind Farm observed that all of the qualifying features of the LNCS were observed to some degree throughout the surveys.

Doomy and Whitemaw Hill SSSI

8.6.10 The site is made up of two detached areas, one of which is one of the few places in Orkney where whimbrel nest, with an average of seven pairs counted on site though there is limited recent data regarding breeding success. However, the most recent Condition Assessment (2017) assessed the feature as being

'unfavourable, no change'. The site is also important for Arctic Skua, with approx. 32 pairs breeding during the summer months. The most recent Condition Assessment (2016) assessed the condition of the feature to be 'unfavourable declining'.

A review of ornithology data gathered to support the Wind Farm observed Arctic Skua breeding, but no Whimbrel were recorded during the breeding season. However, Whimbrel were noted fairly frequently on passage, though mostly in small numbers feeding in fields or on the shore.

Calf of Eday SPA/SSSI

8.6.11 According to the Site Management Statement for the Calf of Eday SSSI (NatureScot, 2010) it is a small uninhabited island off the northeast of Eday, covering an area of approx. 2 km x 1 km. The seaward extension of the SPA (the SSSI covers only the island itself) extends approximately 2 km into the marine environment (NatureScot, 2009). The site provides suitable nesting habitat for a variety of seabirds.

8.6.12 A review of ornithology data gathered to support the Wind Farm observed the following in relation to the qualifying features of the Calf of Eday SPA/SSSI:

- Cormorant – overall recorded very rarely during VP surveys, with the majority being of single birds, with very occasional groups recorded. A peak of 15 individuals was recorded during shore surveys, in April 2019, roosting on the rocks at War Ness. They were also observed during the winter shore surveys, with a peak of 37 individuals also observed on War Ness point.
- Fulmar – this species was one of the most numerous species observed during the breeding season shore surveys, with a peak of 417 adults on nests (AONs) observed, distributed along the cliffs in the survey area. They were also observed during the winter shore surveys with a peak of 198 individuals observed in March 2022 (likely migrating individuals returning to the island).
- Great Black-backed Gull – generally recorded at similar frequencies during both the breeding and non-breeding seasons. A peak of 14 pairs was observed in the breeding bird surveys, and a peak of seven individuals in during the winter shore surveys.
- Guillemot – a peak of 59 individuals was observed at sea during the breeding season shore surveys (as they are crevice nesters, counts are challenging at nests). During the winter shore surveys a peak of 98 individuals was observed, mostly off the western side of the island.
- Kittiwake – no data available.

Mill Loch SSSI

8.6.13 The Mill Loch SSSI is situated on the island of Eday and includes a 10 ha freshwater loch surrounded by mosses and tall vegetation, with the remainder of the site consisting of a moorland vegetation mosaic. The loch is of national importance for supporting one of the densest breeding concentrations of Red-

throated Diver in the British Isles. The most recent Condition Assessment (2012) assessed the feature as being 'favourable maintained'.

8.6.14 See **Paragraph 8.6.4** above for a summary of Red-throated Diver occurrence as per a review of ornithology data gathered to support the Wind Farm. It should be noted that Mill Loch itself is outwith the survey area for the Wind Farm.

Sanday SAC

8.6.15 Sanday is a large, low-lying island in the north-east of the Orkney archipelago, characterised by a complex coastline that is dominated by extensive sandy beaches and sheltered inlets, but interspersed with rocky headlands. The surrounding waters are relatively shallow.

8.6.16 The Sanday SAC is notable for its subtidal bedrock reefs, which are extensive and surround the island, providing habitat for dense kelp forests (*Laminaria* spp.). All habitat related features were assessed as being 'favourable maintained' in the most recent Condition Assessment (2011).

8.6.17 The site is also notable for the population of harbour seal it supports, though their condition is assessed as 'unfavourable declining' in 2024, which according to the Conservation and Management Advice (NatureScot, 2025c) is due to substantive continual decline in numbers using the site for moulting and breeding haul-outs. Further details regarding this decline of the harbour seal within the site generally is provided in **Volume 4, Technical Appendix 8.3: Marine Mammal and Fish Baseline.**

Eynhallow SSSI

8.6.18 Eynhallow SSSI encompasses the island of Eynhallow, between the Orkney Mainland and Rousay. The island is bound by shingle and sandy beaches which are used by harbour seal for breeding in June and July and as a moult haul out in August. Counts of up to 900 individuals have been made; however, the site is classed as being unfavourable in the latest Condition Assessment (2013), due to a wider decline in the north and east coast harbour seal population.

Faray and Holm of Faray SAC/SSSI

8.6.19 Faray and Holm of Faray is designated as an SAC and SSSI for grey seal. It is comprised of two uninhabited islands, with the SAC also encompassing the surrounding waters. The islands comprise sandy bays, rocky shores with some low cliffs and an interior of semi-improved grasslands. Grey seals primarily use the site in September and November for pupping and breeding. Around 3000 pups are born there annually, representing c.7% of the GB population. A Condition

Assessment was last conducted in 2014 and the feature was found to be favourable maintained.

Ornithology

8.6.20 This section should be read in conjunction with **Volume 4, Technical Appendix 8.4: Ornithology Baseline**.

8.6.21 A detailed examination of desk-based data and survey data from the associated Wind Farm has been undertaken, which has identified and examined both species groupings and individual species of conservation significance. In terms of species groupings, the following were identified as needing further examination:

- Breeding seabirds, waders and waterfowl;
- Breeding passerines and swifts;
- Breeding raptors (specifically Short-eared Owl (*Asio flammeus*));
- Non-breeding seabirds, waders and waterfowl;
- Non-breeding passerines and swifts; and
- Non-breeding raptors (specifically Hen Harrier (*Circus cyaneus*)).

Intertidal Habitats

8.6.22 A total of 15 different biotopes were observed during the survey. **Table 8.7** provides a summary of the eight biotopes observed within the footprint of the Proposed Development (the landing point to be constructed in this case).

Table 8.7: Biotopes observed during intertidal surveys.

Habitat No.	Biotope Code	Biotope Name
ED04	**LR.LLR.F.Fspi**	*Fucus spiralis* on sheltered upper eulittoral rock.
ED05	**R.FLR.Eph.Ulv**	*Ulva* spp. on freshwater influenced and/or unstable upper eulittoral rock.
ED06	**IR.MIR.KR.Ldig**	*Laminaria digitata* on moderately exposed sublittoral fringe rock.
ED07	**LR.HLR.FR.Him**	*Himanthalia elongata* and red seaweeds on exposed to moderately exposed lower eulittoral rock.
ED08	**LR.FLR.Eph.EphX**	Ephemeral green and red seaweeds on variable salinity and/or disturbed eulittoral mixed substrata.
ED09	**LS.LCS.Sh.BarSh**	Barren littoral shingle.
ED13	**LR.LLR.F.Fserr.X**	*Fucus serratus* on full salinity lower eulittoral mixed substrata.
ED14	**LR.FLR.Eph.BLitX**	Barnacles and *Littorina* spp. on unstable eulittoral mixed substrata.

8.6.23 None of the biotopes observed during the intertidal survey were PMFs or Annex I habitats, either under the footprint of the Proposed Development or adjacent. While bedrock outcrops were present in the wider survey area, these did not

appear to extend into the subtidal environment and therefore do not qualify as an Annex I reef habitat.

Marine Mammals and Fish

8.6.24 This section should be read in conjunction with **Volume 4, Technical Appendix 8.3: Marine Mammal and Fish Baseline.** Below are details of the marine mammal species deemed to have the potential to be in the vicinity of the Proposed Development[4].

Atlantic White-sided Dolphin

8.6.25 Atlantic white-sided dolphin (*Lagenorhynchus acutus*) are most frequently sighted around the waters to the west of Orkney out to Sule Skerry between May and October, with peak number of records occurring in August.

8.6.26 There have been sightings of Atlantic white-sided dolphin recorded within the vicinity of the Proposed Development, and considering some of their prey species are likely to be in the waters surrounding, it is considered feasible they may be present periodically within the ZoI.

Harbour Porpoise

8.6.27 The harbour porpoise (*Phocoena phocoena*) is widely distributed and common throughout the Orkney region. Harbour porpoise are predominantly confined to shelf waters, although sightings have occurred in deep water. Although present throughout the year, most sightings associated with Orkney occur during summer-Autumn (June to October), with peak number of records occurring July-August.

8.6.28 There have been a high number of records of harbour porpoise in the vicinity of the Proposed Development, particularly compared to other marine mammal species. Considering some of their prey species are likely to be in the waters surrounding, it is considered likely they may be present regularly within the ZoI.

Killer Whale

8.6.29 Killer whale (*Orcinus orca*) are widely distributed in the northern Scottish waters and specifically throughout Orkney waters. Killer whales usually first appear in coastal waters around the Northern Isles and Outer Hebrides in May and June, singly or in groups numbering up to 14 individuals, with peak number of records occurring between June and October.

8.6.30 There have been numerous sightings of killer whale recorded within the vicinity of the Proposed Development and considering some of their prey species are likely

[4] All references that informed the Marine Mammal and Fish baseline are detailed within the appendix and not duplicated here for ease of reading.

to be in the waters surrounding, it is considered feasible they may be present within the ZoI.

Long-finned Pilot Whale

8.6.31 Long-finned pilot whale (*Globicephala melas*) mainly occur in deep waters (200-3,000m), although have occasionally been observed in shallower coastal waters around northern Scotland. Long-finned pilot whale are infrequently observed in Orkney's nearshore waters, but sightings have been recorded year round.

8.6.32 There have been a small number of sightings of long-finned pilot whale recorded within the vicinity of the Proposed Development, and although they tend to prefer deeper waters than those in the vicinity, considering some of their prey species are likely to be in the waters surrounding it is considered feasible they may be present periodically within the ZoI.

Minke Whale

8.6.33 Minke whale (*Balaenoptera acutorostrata*) tend to reside mainly on the continental shelf in water depths of 200m or less, and are frequently seen in coastal and inshore waters, being widely distributed throughout the North Sea. Minke whale are mostly observed along the west and south coasts of Orkney and in the Pentland Firth. The species is deemed widely distributed in relatively small numbers, with most sightings occurring between June and October.

8.6.34 There have been a small number of sightings of minke whale recorded within the vicinity of the Proposed Development. Considering some of their prey species are likely to be in the waters surrounding, it is considered feasible they may be present occasionally within the ZoI.

Risso's Dolphin

8.6.35 Sightings of Risso's dolphin (*Grampus griseus*) around Orkney are amongst the furthest north in the eastern Atlantic, with most frequent sightings concentrated along the west coasts of Orkney, particularly west mainland and west Hoy, but also off North Ronaldsay and in the Pentland Firth. They are generally widely distributed, and may be present all year round.

8.6.36 There have been a small number of sightings of Risso's dolphin within the vicinity of the Proposed Development, and one record of a stranded Risso's dolphin on the southern tip of Eday. Considering some of their prey species are likely to be in the waters surrounding, it is considered feasible they may be present occasionally within the ZoI.

Grey Seal

8.6.37 Orkney is a stronghold for breeding grey seals and is part of the North Coast and Orkney Seal Management Unit (SMU). It is estimated that the Orkney colonies produced nearly a third of UK pups in 2019. The overall trend is for increased numbers in the UK population but there was a slight reduction in the Orkney

population estimate between 2016 and 2019. The latest estimate of the UK grey seal population is 129,100 with the Orkney and North Coast SMU being home to approx. 7% of that (based on most recent population estimates for grey seal from 2019-2021 for the North Coast and Orkney SMU of 8599). From research undertaken and presented in Special Committee on Seals (SCOS) 2021 report, it is estimated that grey seal within the Orkney region are close to carrying capacity when undertaking modelling. Grey seal distribution estimates show the mean number of grey seals estimated to be present in each 5 km by 5 km grid cell at any one time, with that around the Proposed Development estimated to be >50 individuals per 5 $km^{2.}$

8.6.38 Grey seal are qualifying features of multiple designated sites on Orkney and within the ZoI of the Proposed Development, the closest of which is the Muckle and Little Green Holm SSSI approx. 1 km north of the vessel route. In addition, there are multiple designated haul out sites within the ZoI, the closest of which is Gairsay 1.9 km west of the vessel route of the Proposed Development.

8.6.39 Taking account of the above, it is considered likely that grey seal will be present within the ZoI of the Proposed Development.

Harbour Seal

8.6.40 The latest estimate of the UK harbour seal population is 36,600 with the Orkney and North Coast SMU being home to approx. 4% of that (most recent population estimates for harbour seal from 2019-2021 for the North Coast and Orkney SMU of 1405). Whilst the overall trend for harbour seals within the UK is increasing, there has been a dramatic change in distribution. Counts within the Orkney and North Coast SMU have gone from 8,522 in 1997, to 1296 in 2019 (an 85% decline) for counts between 2016 and 2019.

8.6.41 The causes of decline for harbour seals in the east and north coasts have not been confirmed yet. Various causes have been speculated, some have been discounted but there is no evidence to support any one of these or indeed a combination of possible causes. These include prey quality and availability, exposure to toxins/ harmful algae and competition for resources from grey seal.

8.6.42 Harbour seal are qualifying features of multiple designated sites on Orkney and within the ZoI of the Proposed Development, as detailed in, the closest of which is the Sanday SAC 9.4 km north east. In addition, there are multiple designated haul

out sites within the ZoI, the closest of which is Gairsay 1.9 km west of the Proposed Development (specifically the vessel route).

8.6.43 Taking account of the above, it is considered likely that harbour seal will be present within the ZoI of the Proposed Development.

Fish

8.6.44 This section should be read in conjunction with **Volume 4, Technical Appendix 8.3: Marine Mammal and Fish Baseline**. Below are details of the fish species deemed likely to be in the vicinity of the Proposed Development.

Basking Shark

8.6.45 Basking shark *(Cetorhinus maximus)* records from North Scotland and Orkney are widely scattered, with no particular concentration. They have occurred in every month of the year, with peak records between July and September which is similar to trends along the west coast of Scotland. The basking shark is exclusively a filter-feeding plankton feeder, and as a consequence is frequently associated with productive frontal zones.

8.6.46 Basking shark have been recorded immediately adjacent to the Proposed Development on a small number of occasions in 2013 and 2014. It is therefore considered possible that basking shark may be observed within the ZoI of the Proposed Development.

Flapper Skate

8.6.47 Combined survey data from 2019-2023 by the Orkney Skate Trust (OST) for flapper skate eggs in situ shows an absence near the Proposed Development. The Shark Trust ‘Great Egg Hunt’ citizen science project shows a similar distribution of records to those found by OST. This Shark Trust data shows the closest record of an in situ egg presence from the Bay of London, approximately 3.7 km north on the east coast of Eday.

8.6.48 However, the habitats within the footprint of the landing point are considered unsuitable for egg laying, and also for foraging adult individuals which prefer deeper waters. It is therefore considered unlikely that flapper skate will be present within the ZoI.

Select PMF Fish Species

8.6.49 The following PMF fish species have been determined (through desk based assessment of likely habitat suitability and review of species abundance and spawning/nursery ground maps, as detailed fully in **Volume 4, Technical Appendix 8.3: Marine Mammal and Fish Baseline**), as having the potential to be present within the ZoI of the Proposed Development:

- Atlantic herring (*Clupea harengus*);
- Atlantic mackerel (*Scomber scombrus*);

- Atlantic salmon (*Salmo salar*);
- Blue skate (*Dipturus batis*);
- Cod (*Gadus morhua*);
- European eel (*Anguilla anguilla*);
- Horse mackerel (*Trachurus trachurus*);
- Ling (*Molva molva*);
- Norway pout (*Trisopterus esmarkii*);
- Porbeagle shark (*Lamna nasus*);
- Saithe (*Pollachius virens*);
- Sandeels (*Ammodytes* spp.);
- Sand goby (*Pomatoschistus minutus*);
- Sea trout (*Salmo trutta);*
- Spiny dogfish (*Squalus acanthias*); and
- Whiting (*Merlangius merlangus*).

Commercial Fisheries

8.6.50 One active commercial fish farm operated by Scottish Sea Farms (SSF) is located approximately 470 m north west of the Proposed Development. The fish farm consists of 12 circular cages and a feeding barge for the production of farmed salmon. Considering its close proximity, it is considered that the fish farm is within the ZoI of the Proposed Development.

Otter

8.6.51 The full results of the otter surveys conducted can be found in **Volume 4, Technical Appendix 8.2: Otter Survey Report** and are summarised below.

8.6.52 A total of five resting sites were identified during the otter surveys, though only one is considered to be within the ZoI for the Proposed Development. Otter utilisation of this resting site is unclear, given inconsistent evidence of use over the years (e.g. spraints of varying ages in and outside the entrance in 2023, but no recent or old field signs associated with the feature in 2024). However, evidence of recent use in 2025 suggests it is likely a seasonally used rest site. It is considered unlikely as a natal holt or day time rest site, given the active nature of the site.

8.6.53 In cognisance of the above, otter are confirmed to be present within the ZoI.

Marine Annex 1 Habitats

8.6.54 The desk study identified two Annex I habitats within the vicinity of the Proposed Development, though it should be noted that none of these are under the footprint

of the Proposed Development. These habitats were ‘Reefs’ and ‘Large shallow inlets and Bays’.

8.6.55 The nearest record of reef habitat is approximately 2 km south hydrologically from the Proposed Development, just off the coast by Crookedhall. This reef habitat also comprises a PMF, ‘*Laminaria hyperborea* on tide-swept, infralittoral rock’, with the current biotope being ‘*Laminaria hyperborea* forest, foliose red seaweeds and a diverse fauna on tide-swept upper infralittoral rock’. The sensitivity of this biotope has not been assessed for chemical pressures, but has a medium – high sensitivity to physical loss/change, removal of substratum, abrasion/disturbance to the surface of the substratum or seabed and changes in suspended solids, according to the Marline Life Information Network (MarLIN, 2025). Reefs are also located sporadically along the vessel route and adjacent to Hatston pier. Location of reefs in relation to the Proposed Development are shown in **Figure 8.1.**

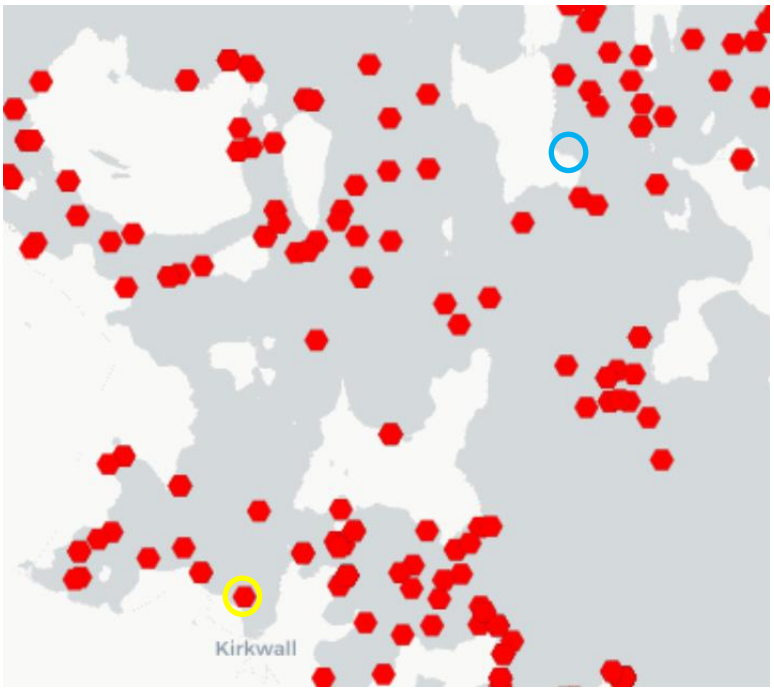

Figure 8.1: Location of Annex I reef habitats (red symbols) in relation to the Proposed Development. The landing point location (blue circle) and Hatston pier (yellow circle) are highlighted. Figure taken from NMPi (2025).

8.6.56 There is one record of large shallow inlets and bays adjacent to the Hatston pier. This current biotope for this habitat is ‘*Laminaria saccharina* forest on very sheltered upper infralittoral rock’. There are no other incidences of this habitat within the anticipated ZoI of the Proposed Development. Location of large shallow

inlets and bays habitats in relation to the proposed development are shown in **Figure 8.2.**

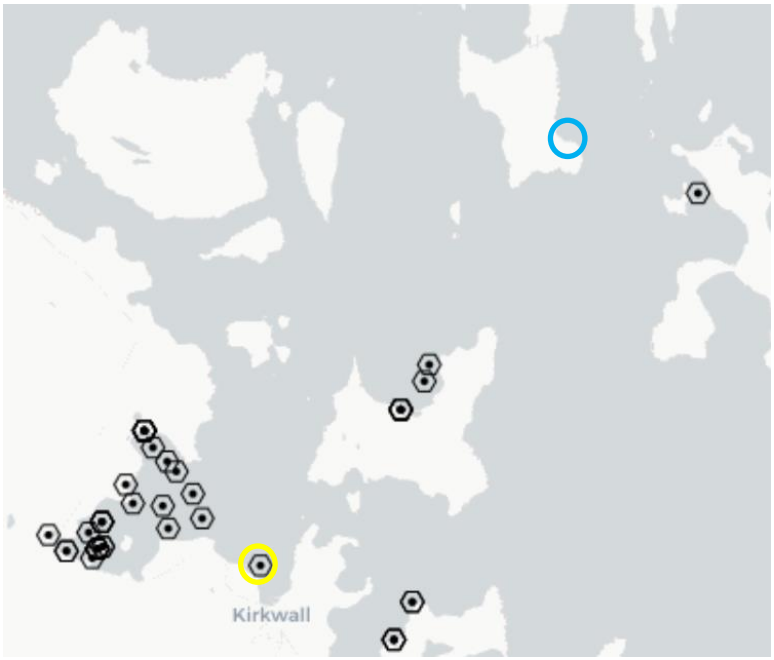

Figure 8.2: Location of Annex I large shallow inlets and bays habitats (black symbols) in relation to the Proposed Development. The landing point location (blue circle) and Hatston pier (yellow circle) are highlighted. Figure taken from NMPi (2025).

8.6.57 Both Annex I habitats are considered to be within the ZoI of the Proposed Development.

Other PMFs

8.6.58 The desk study identified four PMF habitats within the vicinity of the Proposed Development. These included ‘Kelp beds’, ‘Kelp and seaweed communities on sublittoral sediment’, ‘Tidal swept algal communities’ and ‘Maerl beds’. Each are

described further below, and MS NMPi data is shown in **Figure 8.3** and **Figure 8.4.**

Figure 8.3: Location of PMFs in relation to Proposed Development, specifically the location of the landing point (blue circle). Figure taken from NMPi (2025).

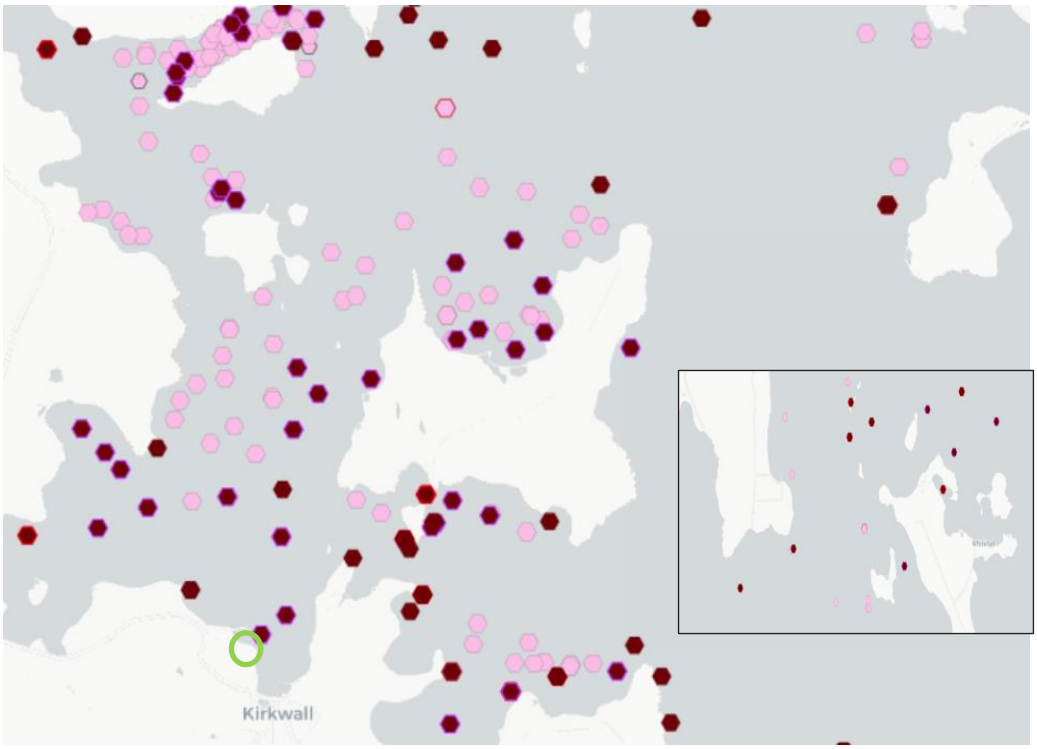

Figure 8.4: Location of PMFs in relation to Proposed Development, specifically the proposed vessel route and departure port (Hatston, green circle). Figure taken from NMPi (2025).

The nearest kelp bed habitat to the Proposed Development, specifically the proposed location of the landing point on Eday, is 2.1 km south east. This particular area of kelp bed currently comprises the biotope '*Laminaria hyperborea* forest, foliose red seaweeds and a diverse fauna on tide-swept upper infralittoral

rock'. The sensitivity of this biotope has not been assessed for chemical pressures, but has a medium – high sensitivity to physical loss/change, removal of substratum and abrasion/disturbance to the surface of the substratum or seabed and changes in suspended solids (MarLIN, 2025). This habitat type is present sporadically along the vessel route for the Proposed Development and at Hatston pier also, sometimes immediately adjacent.

8.6.59 There are no areas of kelp and seaweed communities on sublittoral sediment in the vicinity of the proposed landing point on Eday itself but are immediately adjacent to the proposed vessel route and Hatston pier. This PMF habitat generally has not been assessed for chemical pressures but has a medium – high sensitivity to physical loss/change, removal of substratum and abrasion/disturbance to the surface of the substratum or seabed and changes in suspended solids (MarLIN, 2025).

8.6.60 The nearest tidal swept algal community to the Proposed Development, specifically in relation to the proposed location of the landing point on Eday, is 3 km north east. This particular area of kelp bed currently comprises the biotope '*Laminaria hyperborea* on tide-swept infralittoral mixed substrata'. The sensitivity of this biotope has not been assessed for chemical pressures but has a medium – high sensitivity to physical loss/change, removal of substratum and abrasion/disturbance to the surface of the substratum or seabed and changes in suspended solids (MarLIN, 2025). This habitat type is present sporadically along the vessel route for the Proposed Development and at Hatston pier also, sometimes immediately adjacent.

8.6.61 The closest maerl bed to the Proposed Development, specifically in relation to the proposed location of the landing point on Eday, is 400 m north east. There are several maerl beds within the vicinity of Eday, with the total maerl extent conservatively estimated to be 21 km^2 (Hirst *et al*., 2012). This species is fragile and slow growing, with generally low resilience to change. The sensitivity of this biotope has not been assessed for chemical pressures but has a medium – high sensitivity to chemical pressures (e.g. hydrocarbon contamination or introduction of other substances), physical loss/change, removal of substratum, abrasion/disturbance to the surface of the substratum or seabed, changes in suspended solids and smothering and siltation rate changes (MarLIN, 2025). This habitat type is present sporadically along the vessel route for the Proposed Development and at Hatston pier also, sometimes immediately adjacent.

8.6.62 All four PMFs are considered to be within the ZoI of the Proposed Development.

mINNS

8.6.63 The OIC have conduced annual mINNS surveys since 2013. The existing Eday pier has been a part of this monitoring since its conception, and to date five species of mINNS have been identified at the existing pier (Kakkonen *et al*.,

2019), though the research does not specify which species of mINNS are specifically present at Eday.

8.6.64 A review of the Marine Scotland MS NMPi layers (MS, 2025) identified another four species of mINNS which are present in the Kirkwall harbour (the departure point of the vessel movements associated with the Proposed Development). These included:

- *Schizoporella japonica;*
- orange tipped sea squirt (*Corella eumyota*);
- compass sea squirt (*Asterocarpa humilis*); and
- *Botyrylloides violaceus*

Future Baseline

8.6.65 In the absence of the Proposed Development, the following changes to baseline conditions may occur as a result of factors such as climate change with associated sea level rise and changes to water temperatures and the increasing prevalence of avian influenza:

- deterioration of seabird populations;
- deterioration of harbour seal populations;
- deterioration of shark and ray populations;
- shift in warm water species northwards due to ocean warming i.e. increased numbers of basking shark and a potential decline in cold water species; and
- introduction of mINNS is likely to continue and established species may become more widespread with a decline in native species.

8.7 Scope of the Assessment

Environmental Measures Embedded into the Development Proposals

8.7.1 Embedded mitigation proposals are those mitigation measures that are inherent to the Proposed Development. Embedded mitigation includes all mitigation usually assumed to be in place during construction, operation and decommissioning, and is generally regarded as industry standard or Best Practice. Construction and Environmental Management Plans (CEMPs) are introduced in **Volume 1, Chapter 3: Proposed Development** of this EIA Report. The applicant is committed to producing the CEMP for approval by statutory authorities prior to any works commencing, which will include the Marine Directorate, OIC and NatureScot.

8.7.2 Prior to the formation of reclamation works, a silt boom/curtain (example model ‘Offshore 105’) would be implemented to minimise migration of fines to the wider marine environment until such time as outer geotextile protection is secured in place within the revetment slope. During construction works a banksman will be observing any marine, sediment and material movement including further

mitigation as required due to changing weather, wave and tidal action. This is considered sufficient to address any risks associated with sedimentation.

8.7.3 The applicant intends to utilise a large barge/cargo vessel to deliver aggregates, potentially berthing on the east side of the landing point for several days to spread the unloading process. This is intended to reduce the number of overall vessel movements associated with construction of the landing point. To further reduce this, vehicles that can be transported without impacting local residents' use of the ferry will, where possible, travel to Eday via the existing Ro-Ro ferry. Staff associated with the wind farm construction will also be transported as foot passengers to site on the existing Orkney ferries. A minibus will be in operation between the ferry terminal and site for construction staff.

8.7.4 In terms of artificial lighting, construction is likely to be restricted to summer months and daylight hours, though in the morning and late afternoon during spring, there may be an occasional requirement for small task lighting at a height of 2 – 4 m, comprising a telescopic mast over a portable generator. In general the reclamation itself would not be lit, though plant would have its own lighting. However, lighting on plant is not anticipated to be significantly above the baseline levels, given the artificial lighting associated with the existing Eday pier and vehicles that utilise it.

8.7.5 Once the landing point has been constructed, a single high-level lighting mast is proposed to be installed immediately north of the current shoreline, at the eastern end of the reclamation (as shown in **Volume 2, Figure 3.5: Lighting Design** of this EIA Report). It is anticipated to be approximately 15 m tall, in keeping with existing lighting columns . To minimise any effects resulting from lighting, the following measures have been included in the lighting design:

- deliveries at night avoided, where possible;
- lighting will be directional with a light control system to illuminate only the causeway reclamation;
- lighting will only be used while vessels are berthed; and
- at all other times, the lighting would be switched off.

8.7.6 The floating pier and any vessels associated will have their own artificial lighting. However, as described above and with the avoidance of deliveries at night, this is not considered to contribute significantly to that of baseline levels.

8.7.7 A suitably experienced Environmental Clerk of Works (ECoW) will oversee all works to ensure adherence to the mitigation measures and compliance with ecological good practice measures during the construction and decommissioning phases (and during the operational phase, should any significant vessel movements over a short period or maintenance activities be required).

8.7.8 An ecological toolbox talk will be given to all site personnel during both the construction and operation of the Proposed Development as part of site induction on the potential presence of protected and notable species and any measures that need to be undertaken should such species be discovered during construction

activities. The toolbox talk will also include the requirement to report and log any injuries or casualties of fauna at the Proposed Development during construction and operation.

Potential Impacts and Effects

8.7.9 Impacts and effects which are considered to be mitigated appropriately via embedded mitigation are sedimentation and artificial lighting, and therefore are not discussed further.

8.7.10 Impacts related to the generation of underwater noise, can have resulting effects such as potential resultant injury, mortality, disturbance and/or displacement of a variety of IEFs, including marine mammals, fish, ornithology and otter. However, this impact is scoped out in cognisance of the short duration, temporary nature of the works and machinery/methodology to be utilised (no dredging, piling or drilling) and the working location within the intertidal zone. It is therefore considered highly unlikely that marine mammal, fish, ornithology and otter will be subject to impacts and effects as a result of underwater noise.

8.7.11 The temporary floating pier aspect of the landing point will be demobilised when not in use during the operational phase of the Wind Farm. The causeway component of the landing point will be decommissioned following the operational phase of the wider Wind Farm project. The decommissioning is broadly considered to have similar anticipated impacts and effects as that of the construction phase, and is likely to broadly follow the construction methodology in reverse. It is not known at this stage how long decommissioning will take, or at what time of year it will be undertaken. Because the impacts and effects are broadly considered to be similar to that of construction, they are assessed simultaneously in Section 8.8.

8.7.12 The potential impacts associated with the Proposed Development, and their potential resultant effects, are summarised in **Table 8.8** below.

Table 8.8: Potential Impacts and Effects of the Proposed Development.

Potential Impact	Potential Effect
Construction	
Accidental spills from vessels, plant, and on site storage of fuel and chemicals during construction.	Pollution of the marine environment, resulting in both direct (e.g. poisoning of fauna or damage/degradation of habitats) and indirect (e.g. through impacts to prey resources) effects to a variety of IEFs.
Increased air-borne noise as a result of construction processes building the landing point.	Disturbance and displacement of foraging, roosting or nesting faunal species.
Increase visual stimuli as a result of personnel and plant movement as a result of construction processes building the landing point.	
Increased vessel movements to deliver materials for construction of landing point.	Disturbance and displacement from foraging areas, increased collision risk with IEFs.

Potential Impact	Potential Effect
Increased opportunities for transport of mINNS due to vessels delivering materials for construction of the landing point.	Damage/degradation/displacement to any susceptible Annex I or PMF habitats or species, should mINNS outcompete native flora or fauna.
Construction of new pier within ZoI of otter resting site.	Loss of resting habitat for otter.
Placement of anchors for the pier	Permanent loss of potential spawning/nursery habitat for fish.
Operation	
Accidental spills from vessels, plant, and on site storage of fuel and chemicals during operation of vessels delivering Wind Farm components.	Pollution of the marine environment, resulting in both direct (e.g. poisoning of fauna or damage/degradation of habitats) and indirect (e.g. through impacts to prey resources) effects to a variety of IEFs.
Increase visual stimuli as a result of personnel and plant movement delivering Wind Farm components.	Disturbance and displacement of foraging, roosting or nesting faunal species.
Increased vessel movements and potential for use of larger vessels required to handle Wind Farm components.	Disturbance and displacement from foraging areas, increased collision risk with IEFs.
Increased opportunities for transport of mINNS due to vessels delivering Wind Farm components.	Damage/degradation/displacement to any susceptible Annex I or PMF habitats or species, should mINNS outcompete native flora or fauna.
Decommissioning	
Accidental spills from vessels, plant, and on site storage of fuel and chemicals during decommissioning.	Pollution of the marine environment, resulting in both direct (e.g. poisoning of fauna or damage/degradation of habitats) and indirect (e.g. through impacts to prey resources) effects to a variety of IEFs.
Increased air-borne noise as a result of construction processes building the landing point.	Disturbance and displacement of foraging, roosting or nesting faunal species.
Increase visual stimuli as a result of personnel and plant movement as a result of construction processes building the landing point.	

Receptors Requiring Assessment

8.7.13 A summary of the IEFs, their importance, predicted ZoI and whether they have been scoped in or out of being taken forward to assessment is provided in **Table 8.9** below.

Table 8.9: Summary of IEFs Requiring Further Assessment and Their ZoIs.

IEF	Importance	ZoI	Scoped In or Out
Designated Sites			
North Orkney SPA	**International**	Up to 750 m	**Scoped In** The Proposed Development will not result in any impacts to Red-throated Diver at their

IEF	Importance	ZoI	Scoped In or Out
			breeding sites, or result in permanent loss or damage to their supporting habitats. However, it may result in potential impacts and effects to foraging individuals of all qualifying features of the SPA within its ZoI, during both the construction and operational phases. Effects are primarily expected to result from disturbance, pollution events and proposed vessel movement impacts which may result in direct injury/mortality and displacement, disturbance or indirect effects as a result of impacts to prey resources.
Ve Ness LNCS	**Local** (though the site hosts bird species on the BoCC Red List considered to be of **National (UK)** Importance)	**Habitats** – within the development **Ornithology** – up to 300 m	**Habitats** - Scoped Out The Proposed Development is not within or immediately adjacent to the habitats associated with this LNCS, and therefore are unlikely to result in impacts and effects to them. **Ornithology Features – Scoped In** In relation to ornithological interests, none of the species associated with the LNCS will be directly impacted at their breeding sites given the distance and likely limited line of sight between the LNCS and Proposed Development. However, it may result in potential impacts and effects to foraging individuals of qualifying features of the SPA within its ZoI (with the exception of Dunlin, Skylark and Twite which **have been Scoped Out as detailed fully in Volume 4, Technical Appendix 8.4: Ornithology Baseline** of this EIA Report), during both the construction and operational phases. Effects are primarily expected to result from disturbance, pollution events and proposed vessel movement impacts which may result in direct injury/mortality, disturbance and/or displacement or indirect effects as a result of impacts to prey resources.
Muckle and Little Green Holm SSSI	**National (UK)**	Up to 500 m (conservative estimate for visual/vessel related disturbance)	**Scoped In** Grey seal will not be directly impacted at their haul out sites within the SSSI, given the distance between the Proposed Development and SSSI. However, foraging individuals from the site may be impacted by the Proposed Development during both construction and operation. Effects are primarily expected to result from disturbance, pollution events and proposed vessel movement impacts which may result in direct injury/mortality, disturbance and/or displacement or indirect

IEF	Importance	ZoI	Scoped In or Out
			effects as a result of impacts to prey resources.
Ward Hill and Chapel Hill LNCS	**Local** (though hosts Annex I bird species considered to be of **International** importance)	**Habitats** – within the development **Ornithology** – up to 300 m	**Habitats** - Scoped Out The Proposed Development is not within or immediately adjacent to the habitats associated with this LNCS, and therefore are unlikely to result in impacts and effects to them. **Ornithology Features - Scoped In** In relation to ornithological interests, none of the species associated with the LNCS will be directly impacted at their breeding sites given the distance and likely limited line of sight between the LNCS and Proposed Development. However, it may result in potential impacts and effects to foraging individuals of qualifying features of the LNCS within its ZoI (with the exception of Skylark and Twite which have been Scoped Out as detailed fully in **Volume 4, Technical Appendix 8.4: Ornithology Baseline** of this EIA Report), during both the construction and operational phases. Effects are primarily expected to result from disturbance, pollution events and proposed vessel movement impacts which may result in direct injury/mortality, disturbance and/or displacement or indirect effects as a result of impacts to prey resources.
Doomy and Whitemaw Hill SSSI	**National (UK)**	Up to 300 m	**Scoped In** Neither Arctic Skua nor Whimbrel will be directly impacted at their breeding sites given the distance and likely limited line of sight between the SSSI and Proposed Development. Whimbrel have been scoped out of further assessment (as detailed fully in Volume 4, **Technical Appendix 8.4: Ornithology Baseline** of this EIA Report), during both the construction and operational phases. However, Arctic Skua have been scoped in, with the possibility of similar potential effects anticipated as described for the Ward Hill and Chapel Hill LNCS.
Calf of Eday SPA/SSSI	**International / National (UK)**	Up to 300 m	**Scoped In** None of the qualifying species will be directly impacted at their breeding sites given the distance and likely limited line of sight between the SPA and SSSI and Proposed Development. However, it may result in potential impacts and effects to foraging individuals of all

IEF	Importance	ZoI	Scoped In or Out
			qualifying features of the SPA within its ZoI, during both the construction and operational phases. Effects are primarily expected to result from disturbance, pollution events and proposed vessel movement impacts which may result in direct injury/mortality and displacement, disturbance or indirect effects as a result of impacts to prey resources.
Mill Loch SSSI	**National (UK)**	Up to 750 m	**Scoped In** The Proposed Development will not result in direct impacts to Red-throated Diver at their breeding sites, due to the intervening distance between them. However, it may result in potential impacts and effects to foraging individuals of the qualifying features of the SPA within its ZoI, during both the construction and operational phases. Potential effects are expected to be similar to that of those described for the North Orkney SPA.
Sanday SAC	**International**	**Habitats** – within the development **Harbour seal** – up to 500 m	**Habitats** - Scoped Out The Proposed Development is not within or immediately adjacent to the habitats associated with this SAC, or the maximum dispersal distance to which it is expected pollution events may spread, therefore it is considered highly unlikely to result in impacts and effects to them. **Harbour Seal** – Scoped In Harbour seal will not be directly impacted at their haul out sites within the SAC, given the distance between the Proposed Development and SAC, and lack of direct line of sight. However, foraging and commuting individuals from the site may be impacted by the Proposed Development during both construction and operation. Potential effects are anticipated to be similar to those described for the Muckle and Little Green Holm SSSI for grey seal.
Eynhallow SSSI	**International**	Up to 500m	**Scoped In** Harbour seal will not be directly impacted at their haul out sites within the SSSI, given the distance between the Proposed Development and SSSI and lack of direct line of sight. However, foraging and commuting individuals from the site may be impacted by the Proposed Development during both construction and operation. Potential effects are anticipated to be similar to those described for the Muckle and Little Green Holm SSSI for grey seal.

IEF	Importance	ZoI	Scoped In or Out
Faray and Holm of Faray SAC	**International**	Up to 500m	**Scoped In** Grey seal will not be directly impacted at their haul out sites within the SAC, given the distance between the Proposed Development and SAC and lack of direct line of sight. However, foraging and commuting individuals from the site may be impacted by the Proposed Development during both construction and operation. Potential effects are anticipated to be similar to those described for other sites designated for seals.
Faray and Holm of Faray SSSI	**National (UK**)	Up to 500m	**Scoped In** Harbour seal will not be directly impacted at their haul out sites within the SSSI, given the distance between the Proposed Development and SSSI and lack of direct line of sight. However, foraging and commuting individuals from the site may be impacted by the Proposed Development during both construction and operation. Potential effects are anticipated to be similar to those described for other sites designated for seals.
Ornithology			
Breeding seabirds, waders and waterfowl	**National (Scotland)**	300 m	**Scoped In** No disturbance is expected to occur to breeding seabirds, waders and waterfowl at their breeding sites. However, foraging and commuting individuals may be impacted by the Proposed Development during both construction and operation. Potential effects are anticipated to be similar to those described for birds who are qualifying features of designated sites.
Breeding passerines and swifts	**National (Scotland)**	50 m	Scoped Out As described in **Volume 4, Technical Appendix 8.4: Ornithology Baseline**, only a select few passerine and swift species may utilise the buildings present to the south west of the Proposed Development for nesting. Aside from this, it is considered that there is a lack of suitable breeding habitat for passerines and swifts in the ZoI for this group of species. Although some individuals may forage and commute within the ZoI, it is considered that the habitat therein is suboptimal for foraging given the coastal location and general lack of vegetation. There is a wide variety of alternative and more suitable habitat in the wider area, which this species group are considered far more likely to utilise for foraging.

IEF	Importance	ZoI	Scoped In or Out
			They are therefore scoped out of further assessment.
Breeding raptors (Short-eared Owl)	**National (Scotland)**	750 m	Scoped Out As described in **Volume 4, Technical Appendix 8.4: Ornithology Baseline**, some Short-eared Owl territories have been observed within the ZoI of the Proposed Development (the closest being 400m, though this was an occupied territory with unconfirmed breeding success). However, given the intervening distances it is considered that disturbance of Short-eared Owl at their nests is unlikely. Although some individuals may forage and commute within the ZoI, it is considered that the habitat therein is suboptimal for foraging given the coastal location and general lack of vegetation. There is a wide variety of alternative and more suitable habitat in the wider area, which this species group are considered far more likely to utilise for foraging. They are therefore scoped out of further assessment.
Non-breeding seabirds, waders and waterfowl	**National (Scotland)**	300 m	**Scoped In** Foraging and commuting individuals may be impacted by the Proposed Development during both construction and operation. Potential effects are anticipated to be similar to those described for birds who are qualifying features of designated sites.
Non-breeding passerines	**National (Scotland)**	50 m	Scoped Out Although some non-breeding individuals may forage and commute within the ZoI, it is considered that the habitat therein in suboptimal for foraging given the coastal location and general lack of vegetation. There is a wide variety of alternative and more suitable habitat in the wider area, which this species group are considered far more likely to utilise for foraging. They are therefore scoped out of further assessment.
Non-breeding raptors (Hen Harrier)	**National (Scotland)**	750 m	Scoped Out As described in **Volume 4, Technical Appendix 8.4: Ornithology Baseline**, one potential winter roost site for Hen Harrier has been observed within the ZoI of the Proposed Development (the closest being 400m from the landing point). However, given the intervening distances it is considered that disturbance of Hen Harrier at their nests is unlikely.

IEF	Importance	ZoI	Scoped In or Out
			Although some individuals may forage and commute within the ZoI, it is considered that the habitat therein is largely suboptimal for foraging given the coastal location and general lack of vegetation. There is a wide variety of alternative and more suitable habitat in the wider area, which this species group are considered far more likely to utilise for foraging. They are therefore scoped out of further assessment.
Intertidal Habitats			
All habitat biotopes	Site	Under footprint of Proposed Development	**Scoped Out** Although small areas of intertidal habitats will be lost as a result of the Proposed Development, none of the habitats observed were identified as PMFs. As such, they are not assessed further within the Chapter.
Marine Mammals			
Cetaceans - Atlantic white-sided dolphin, harbour porpoise, killer whale, long-finned pilot whale, minke whale, Risso's dolphin	**International**	2 km	**Scoped In** These species have been determined to have the potential to be commuting or foraging within the vicinity of the Proposed Development during both construction and operation. Effects are primarily expected to result from disturbance, pollution events and proposed vessel movement impacts which may result in direct injury/mortality and displacement, disturbance or indirect effects as a result of impacts to prey resources.
Seals	**National (UK)**	Up to 500m	**Scoped In** Both harbour and grey seal have been assessed as having the potential to be present within the vicinity of the Proposed Development. Although there are multiple haul out sites within the vicinity, due to the intervening distances between these, it is considered unlikely that there would be disturbance related effects to these species while at their haul out sites. However, it may result in potential impacts and effects to foraging seals within its ZoI, during both the construction and operational phases. Effects are primarily expected to result from disturbance, pollution events and proposed vessel movement impacts which may result in direct injury/mortality and displacement, disturbance or indirect effects as a result of impacts to prey resources.
Fish			

IEF	Importance	ZoI	Scoped In or Out
Basking shark	**National (UK)**	Up to 500m	**Scoped In** This species has been determined to have the potential to be commuting or foraging within the vicinity of the Proposed Development. Effects are primarily expected to result from disturbance, pollution events and proposed vessel movement impacts which may result in direct injury/mortality and displacement, disturbance or indirect effects as a result of impacts to prey resources.
Flapper skate	**National (Scotland)**	Within the footprint of the Proposed Development and dispersal distance of pollutants entering water	Scoped Out As flapper skate spend the majority of their time on or near to the seabed, they are considered unlikely to be impacted by vessel strikes. It is unlikely flapper skate eggs will be present under the permanent footprint of the pier given it is within the intertidal zone and primarily above the MLWS. In addition, the temporary floating aspect of the pier is unlikely to impact the seabed and any flapper skate eggs. Although the anchor points are within the marine environment, and the distribution data suggests that flapper skate and their eggs may be within the vicinity of the Proposed Development, the habitats therein are considered largely unsuitable for egg laying due to shallow water depths. They are also considered largely unsuitable for adult flapper skate that tend to prefer foraging in deeper waters. As such, they have been scoped out of further assessment.
PMF Fish	**National (Scotland)**	Within the footprint of the Proposed Development and dispersal distance of pollutants entering water	**Scoped In** Given the general mobility of fish species, it is considered unlikely they would be subject to impacts from vessel strikes. However, some PMF fish species have been determined to have the potential to be commuting or foraging within the vicinity of the Proposed Development. Effects are primarily expected to result from disturbance and pollution events which may result in direct injury/mortality and displacement, or indirect effects as a result of impacts to prey resources.
Commercial Fishery	**Regional**	Within the footprint of the Proposed Development and dispersal distance of	**Scoped In** Potential effects may result pollution events as a result of construction and operation of the Proposed Development.

IEF	Importance	ZoI	Scoped In or Out
		pollutants entering water	
Other IEFs			
Otter	**International**	Up to 200m	**Scoped In** Otter have been identified to be utilising the shoreline within and adjacent to the Proposed Development, and also to have an active resting site within the ZoI. Effects are primarily expected to result from disturbance and pollution events which may result in direct injury/mortality and displacement, disturbance or indirect effects as a result of impacts to prey resources. There will also be a permanent loss of resting habitat for otter.
Marine Annex 1 Habitats	**International**	Within the footprint of the Proposed Development and dispersal distance of pollutants entering water	**Scoped In** Although there are Annex I habitats within the vicinity of the Proposed Development, specifically the construction area of the landing point, they are anticipated to be outwith the ZoI of any pollution impacts during construction, given the intervening distance. In terms of the habitats in close proximity to the vessel route and in the vicinity of Hatston, the only feasible effects would be as a result of pollution related impacts as a result of fuel spills from vessels in transit or at port, or the spread of mINNS, during both construction and operation of the Proposed Development.
Other PMFs	**National (Scotland)**	Within the footprint of the Proposed Development and dispersal distance of pollutants entering water	**Scoped In** Although there are PMF habitats within the vicinity of the Proposed Development, specifically the construction area of the landing point, the majority are anticipated to be outwith the ZoI of any pollution related impacts during construction, given the intervening distance. The only exception to this is maerl beds. In terms of the PMFs in close proximity to the vessel route and in the vicinity of Hatston, the only feasible effects would be as a result of pollution related impacts as a result of fuel spills from vessels in transit or at port or the spread of mINNS, during both construction and operation of the Proposed Development.

8.8 Assessment of Potential Effects

8.8.1 This section should be read in conjunction with **Volume 4, Technical Appendix 8.4: Ornithology Baseline** and **Technical Appendix 8.3: Marine Mammal and Fish Baseline.**

Designated Sites

North Orkney SPA

Construction and Decommissioning Effects

8.8.2 Although the North Orkney SPA is noted as being 'within' the influence of the Proposed Development, it should be noted that this relates only to the vessel route travelling through the North Orkney SPA along an already established vessel route, and therefore the Proposed Development will not result in any habitat loss within the SPA itself.

8.8.3 All qualifying features are assessed here, as although the anticipated construction period is within the spring/summer, there may still be a presence of the non-breeding features of the SPA (Great Northern Diver, Slavonian Grebe and Velvet Scoter) as they prepare to undertake their migrations. It is unknown what season decommissioning might be undertaken.

8.8.4 Construction and decommissioning activities at the landing point, as well as additional vessel movements through the SPA between Kirkwall and Eday, could result in the disturbance and displacement of individuals of the qualifying features utilising the nearby waters for foraging or loafing. Disturbance along the vessel route as it passes through the SPA could result in an alteration to the distribution of individuals within the SPA. This has the potential to result in reduced foraging time and increased energy expenditure should individual birds flush and need to find alternative foraging habitat.

8.8.5 In terms of disturbance as a result of construction and decommissioning activities at the landing point, any effects are likely to be fairly localised given the small footprint of the landing point, and in particular the reclamation area. In addition, the works are temporary and short-duration. Given the anticipated foraging distances of Red-throated Diver during the breeding period (9 km), it is considered feasible that individuals from the SPA population could forage at the landing point, which is nearly 6 km from the SPA at its nearest point. No similar data is available for the remaining qualifying features to determine their potential dispersal from the SPA during the non-breeding period. However, in cognisance of the relatively low number of sightings of the qualifying features around the south west and south of Eday observed during the Wind Farm surveys, it is considered likely that any temporary displacement and reduction of birds utilising the site would be to small numbers of individual birds, and as such are unlikely to cause significant effects to the wider SPA population.

8.8.6 The construction of the Proposed Development is anticipated to result overall in 24 vessel movements between Kirkwall and Eday during the construction period,

over a 17 week period. This is scheduled in such a way that it would result in one to two additional vessel movements per week. **Volume 4, Technical Appendix 12.1: Navigational Risk Assessment** of this EIA Report examined AIS data reported from vessel tracks through the sound of Eday during a 28-day period in each January and July 2024. In January 2024, there was an average of 82.5 passages through the area per week, and in July 2024 there was an average of 107.75 passages through the area per week. The vessel movements associated with the construction of the Proposed Development therefore represent a 1.3% increase in vessel movements through the summer construction period, which is considered an insignificant increase.

8.8.7 Data obtained to inform the EIA Report and Navigational Risk Assessment (NRA) for the expansion to the existing Hatston Pier and Terminal (EnviroCentre, 2023) was used to determine the likely extent of vessel movements within the approach to Kirkwall marina. During a 28-day period in each January and July 2022, there was an average of 167 and 391 vessel tracks through the area per week. In cognisance of this, and the observed densities shown in this area compared to the Eday sample area, shown in **Figures 8.5 – 8.6,** it is considered that the construction of the Proposed Development will not result in a significant increase in vessel movements within the North Orkney SPA.

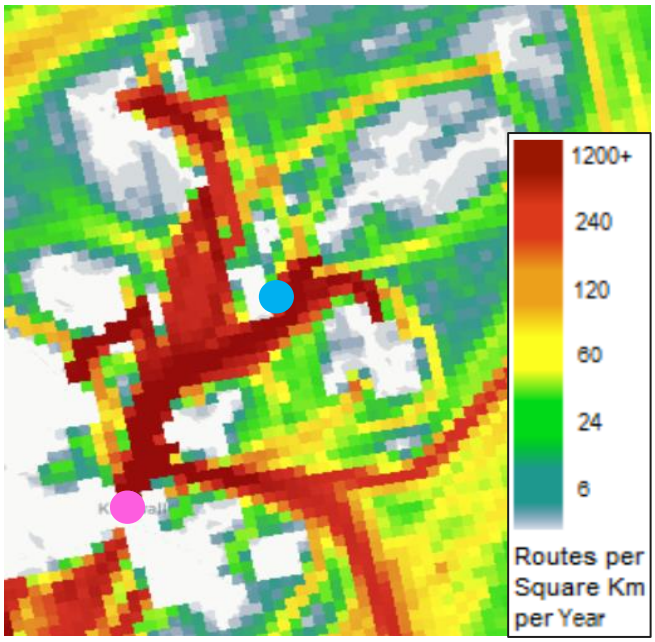

Figure 8.5: Vessel route density annual totals (all vessels) in routes per square km per year for the North Orkney region, showing the location of the

landing point (blue point) and departure point of vessel route (Kirkwall). Data obtained from NMPi (2025).

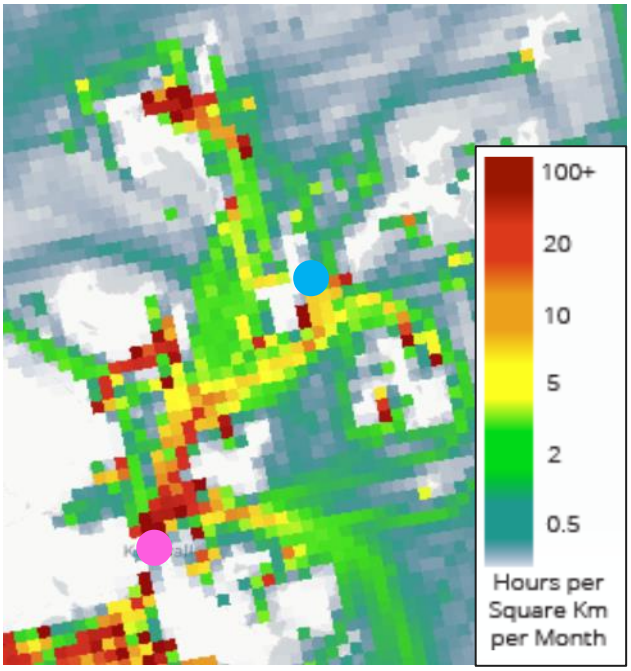

Figure 8.6: Vessel route density annual totals (all vessels) in hours per square km per month for the North Orkney region, showing the location of the landing point (blue point) and departure point of vessel route (Kirkwall). Data obtained from NMPi (2025).

8.8.8 It is well known that many marine bird species, and in particular Red-Throated Diver, are sensitive to disturbance and particularly vessel movements, and frequently take evasive action to approaching vessels. In cognisance of this, the risk of injury/mortality to qualfying features both on and under the surface of the water as a result of collisions is considered to be minimal. Reviewing data of the expected densities of each of the qualifying features along the vessel route within the North Orkney SPA (as described fully in **Volume 4, Technical Appendix 8.4: Ornithology Baseline** of this EIA Report), broadly each species of qualifying features is expected to be present at relatively low densities along the vessel route compared to that of elsewhere in the SPA. Great Northern Diver is the only species with a slightly higher prevalence, however given the frequency of vessel movements within this area this perhaps indicates a certain level of habituation for this particular species. As described above, this is a very heavily utilised vessel route and any of the likely small numbers of individuals utilising this area to forage may be habituated to a certain level. Therefore, as described above in relation to the landing point, while it is acknowledged that small numbers of individuals are likely to be flushed by vessel movements, it is considered unlikely that these impacts would results in effects at the wider SPA population level.

8.8.9 Any pollution incidents may result in direct effects to the qualifying features, for example if pollution of their plumage reduces buoyancy, waterproofing of feathers and birds' ability to keep themselves warm. Indirect effects may be if the prey sources of the qualifying features, such as marine invertebrates/fish, digest such

pollution leading to death or future ill health within the food chain. Such impacts could also result in the physical deterioration of the qualifying features, and their ability to migrate or survive long term. Given the nature of the works and machinery/vessels to be utilised, generally any pollution events are expected to be small-scale, localised and temporary. Further, given the typically weak tidal currents in the vicinity of the landing point, the spread of any pollutants is anticipated to be limited at least in this location.

8.8.10 Effects relating to disturbance or displacement during the construction and decommissioning phases will be temporary and are considered to be of **low magnitude**. Effects as a result of pollution potentially resulting in injury/mortality to the qualifying features may be permanent and of **moderate magnitude**. The IEF is considered to have overall **moderate sensitivity** in cognisance of their overall sensitivity to vessel disturbance, but generally low expected presence of qualifying features within the vicinity of the Proposed Development, and the fact they are mobile and have the ability to move into alternative suitable habitat. The confidence level for the assessment is considered to be **moderate.**

Operational Effects

8.8.11 During the operational phase of the Proposed Development (the marine landing point), there will potentially be a far higher occurrence of vessel movements, likely to span both a two summer and one winter season. It is expected that following completion of the pier construction, it will immediately enter its operational phase for the Wind Farm for that and the following summer. Works may continue through the winter, though the floating pier aspect of the landing point will be demobilised once inclement weather arrives and a landing craft on the existing slipway/vessel that can dock on the pier would be utilised.

8.8.12 A conservative estimate of up to four vessel movements a day (two return trips), and hence up to 24 movements per week, is anticipated during the operational period of the Proposed Development, though this would be the maximum anticipated. This equates to roughly a 29% and 22% increase in vessel movements per week within the Eday sound, during the winter and summer periods, respectively. In the context of the Eday sound, this would be a significant increase in existing vessel movements, however as discussed above in **Paragraph 8.8.5**, there is an expected low presence of the qualifying features within the vicinity of the landing point.

8.8.13 Along the vessel route within the North Orkney SPA, the qualifying features are expected to be present in higher numbers (albeit for most species still relatively low presence compared to other parts of the SPA). Therefore, operational vessel movements are expected to result in an increased risk of disturbance/displacement effects in comparison to construction. The operational phase is expected to equate to roughly a 14% and 6% increase above baseline

levels in the vicinity of Kirkwall during the winter and summer periods, respectively.

8.8.14 The anticipated operational effects in relation to disturbance and displacement from personnel and plant movements at the landing point are broadly considered to be the same as those during construction.

8.8.15 Effects relating to disturbance or displacement during the operational phase will be temporary and are considered to be of **moderate magnitude**. Effects as a result of pollution potentially resulting in injury/mortality to the qualifying features may be permanent and of **moderate magnitude**. The IEF is considered to have overall **low sensitivity** in cognisance of low expected presence of qualifying features within the vicinity of the Proposed Development, and the fact the designated features are mobile and have the ability to move into alternative suitable habitat. The confidence level for the assessment is considered to be **moderate.**

Ve Ness LNCS, Ward Hill and Chapel Hill LNCS, Doomy and Whitemaw Hill SSSI

8.8.16 These three designated sites are assessed together given the overlap of qualifying features and their ecology.

Construction and Decommissioning Effects

8.8.17 The species scoped in for assessment of effects to these designated sites during the construction and decommissioning periods are Common Gull, Arctic Tern, Arctic Skua and Great Skua. The Proposed Development is within the foraging ranges and suitable habitat for these species during the summer breeding period.

8.8.18 Broadly, the assessment of disturbance and displacement effects as a result of construction and decommissioning activities at the landing point to the designated sites and their qualifying features assessed here, are considered to be as for the North Orkney SPA (albeit for different qualifying features). However, given the close proximity of breeding colonies for the qualifying features and their foraging ranges, it is considered that there may be higher numbers of these species within the ZoI of the Proposed Development than for those qualifying features associated with the North Orkney SPA.

8.8.19 Disturbance along the vessel route only has the potential to result in effects to Common Gull, as they are the only one of the seabird qualifying features assessed as scoring moderately for sensitivity to disturbance by ship traffic. These are also considered to be as described above for the North Orkney SPA.

8.8.20 As such, effects relating to disturbance or displacement during the construction and decommissioning phases will be temporary and are considered to be of **low magnitude**. Effects as a result of pollution potentially resulting in injury/mortality to the qualifying features may be permanent and of **moderate magnitude**. The IEF is considered to have overall **low sensitivity** in cognisance of the fact the designated features are mobile and have the ability to move into alternative

suitable habitat. The confidence level for the assessment is considered to be **moderate.**

Operational Effects

8.8.21 The species scoped in for assessment of effects to these designated sites during the operational period are Common Gull, Curlew, Lapwing, Redshank, Snipe, Arctic Tern, Arctic Skua, Great Skua and Golden Plover. The periods (i.e. breeding or non-breeding) and activities during which effects on these species are anticipated is described fully in **Volume 4, Appendix 8.4: Ornithology Baseline** of this EIA Report.

8.8.22 The anticipated operational effects are broadly considered to be the same as those during construction.

8.8.23 However, as described in the assessment of effects for the North Orkney SPA, the number of vessel movements is anticipated to be significantly higher during the operational phase compared to that of the construction phase. This may result in an increased risk of disturbance/displacement effects.

8.8.24 Effects relating to disturbance or displacement during the operational phase will be temporary and are considered to be of **moderate magnitude**. Effects as a result of pollution potentially resulting in injury/mortality to the qualifying features may be permanent and of **moderate magnitude**. The IEF is considered to have overall **low sensitivity** in cognisance of the fact the designated features are mobile and have the ability to move into alternative suitable habitat. The confidence level for the assessment is considered to be **moderate.**

Calf of Eday SPA and SSSI

8.8.25 These two designated sites are assessed together given the overlap of one of the qualifying features (Cormorant).

Construction and Decommissioning Effects

8.8.26 All qualifying features of the Calf of Eday SPA and SSSI have been taken forward to this assessment of effects. These species have been assessed as having the potential to be foraging within the vicinity of the Proposed Development given each individual species' foraging ecology and presence on the Calf of Eday, as described fully in **Volume 4, Technical Appendix 8.4: Ornithology Baseline**.

8.8.27 Broadly, considering the similarities in ecology of the qualifying features across designated sites, the assessment of all other effects for the North Orkney SPA are considered to be applicable to the species assessed here for the Calf of Eday SPA. However, given the close proximity of breeding colonies for the qualifying features on the Calf of Eday (6.2 km north at its closest point) and their foraging

ranges, it is considered that there may be higher numbers of these species within the ZoI of the Proposed Development compared to that of the North Orkney SPA.

8.8.28 Of the qualifying features of the Calf of Eday designated sites, only Cormorant and Guillemot are considered to be particularly susceptible to disturbance from vessel movements, with the other species showing limited escape behaviour and when they do it is over relatively short distances. As described previously, the increase in vessel movements above baseline levels is also considered to be non-significant.

8.8.29 As such, effects relating to disturbance or displacement during the construction and decommissioning phases will be temporary and are considered to be of **low magnitude**. Effects as a result of pollution potentially resulting in injury/mortality to the qualifying features may be permanent and of **moderate magnitude**. The IEF is considered to have overall **moderate sensitivity** in cognisance of the fact the designated features are mobile and have the ability to move into alternative suitable habitat. The confidence level for the assessment is considered to be **moderate.**

Operational Effects

8.8.30 The anticipated operational effects are broadly considered to be the same as those during construction.

8.8.31 However, as described in the assessment of effects for the North Orkney SPA, the number of vessel movements is anticipated to be significantly higher during the operational phase compared to that of the construction phase. This may result in an increased risk of disturbance/displacement effects.

8.8.32 Effects relating to disturbance or displacement during the operational phase will be temporary and are considered to be of **moderate magnitude**. Effects as a result of pollution potentially resulting in injury/mortality to the qualifying features may be permanent and of **moderate magnitude**. The IEF is considered to have overall **low sensitivity** in cognisance of the fact the designated features are mobile and have the ability to move into alternative suitable habitat. The confidence level for the assessment is considered to be **moderate.**

Mill Loch SSSI

Construction and Decommissioning Effects

8.8.33 Broadly, the assessment of effects for the Mill Loch SSSI are considered to be applicable to the Red-throated Diver within the North Orkney SPA. However, given the proximity of breeding colonies on the island of Eday (within 6.4 km) and their foraging ranges (up to 8 km), it is considered that there may be higher numbers of individuals of Red-throated Diver associated with the Mill Loch SSSI

population within the ZoI of the Proposed Development, and particularly the landing point.

8.8.34 In relation to the vessel route and associated impacts and effects, once this is out of the Calf of Eday it is considered far enough away that it is unlikely foraging Red-throated Diver from the Mill Loch SSSI population will be present in significant numbers and therefore effects will not be experienced at a population level.

8.8.35 As such, effects relating to disturbance or displacement during the construction and decommissioning phase will be temporary and are considered to be of **moderate magnitude**. Effects as a result of pollution potentially resulting in injury/mortality to the qualifying features may be permanent and of **moderate magnitude**. The IEF is considered to have overall **moderate sensitivity** in cognisance of the fact that although particularly sensitive to vessel disturbance, the designated features are mobile and have the ability to move into alternative suitable habitat. The confidence level for the assessment is considered to be **moderate.**

Operational Effects

8.8.36 The anticipated operational effects are broadly considered to be the same as those during construction.

8.8.37 However, as described in the assessment of effects for the North Orkney SPA, the number of vessel movements is anticipated to be significantly higher during the operational phase compared to that of the construction phase. This may result in an increased risk of disturbance/displacement effects.

8.8.38 Effects relating to disturbance or displacement during the operational phase will be temporary and are considered to be of **moderate magnitude**. Effects as a result of pollution potentially resulting in injury/mortality to the qualifying features may be permanent and of **moderate magnitude**. The IEF is considered to have overall **moderate sensitivity** in cognisance of the fact the designated features are mobile and have the ability to move into alternative suitable habitat. The confidence level for the assessment is considered to be **moderate,** in cognisance of the lack of site specific data to inform the assessment**.**

Muckle and Little Green Holm SSSI, Sanday SAC, Eynhallow SSSI, Faray and Holm of Faray SAC/SSSI

8.8.39 All of the above designated sites are assessed in conjunction to avoid repetition, as the impacts and effects to foraging seals from the populations of these designated sites is largely considered to be similar given they are all within the foraging ranges of seals (grey seal are known to travel distances up to 100 km

from their regular haul outs and harbour seal up to 50 km, commuting between alternative haul outs and also foraging).

Construction and Decommissioning Effects

8.8.40 The designated sites for seals are between 1-14.4 km from the Proposed Development, though it should be noted that for each site, this distance is based on a mix of distances from the landing point and vessel route. It is therefore not anticipated that there will be any disturbance to seals at their habitats within the designated sites, or alterations to their distributions therein.

8.8.41 Vessel movements have the potential to result in an increased risk of collisions, resulting in the injury/mortality of individuals. Individual collisions as a result of the Proposed Development are unlikely to have an impact on longer term viability of the wider populations of the designated sites, but cumulatively and considered in-combination with existing vessel movements there is potential for effects at the population level.

8.8.42 However, vessel strikes are generally more associated with larger and less agile marine mammals, and so the numbers of seals affected will likely be minimal as they are more manoeuvrable in water. The number of vessel movements during construction will also not be significantly higher than that of baseline levels. The effects of these impacts will therefore be highly localised and unlikely to affect the qualifying features at a wider SPA population level.

8.8.43 Vessel movements and construction/decommissioning activities at the landing point may result in disturbance and displacement of individual seals, or indirectly effecting them through prey (fish) also being disturbed. However, these effects will be temporary and only affect individual seals and/or prey within a relatively small area of supporting habitat, which is outside of the designated sites themselves.

8.8.44 As described within the assessment of effects for the North Orkney SPA, vessel movements to facilitate the Proposed Development are along established and very highly utilised routes. As such, any seals already utilising the waters in this area will be somewhat habituated to vessel activity, as will prey (fish). If there is some displacement from areas of high activity, particularly due to construction and decommissioning activity at the landing point, it will be highly localised and temporary, and likely to affect only small numbers of individual seals of the wider designated sites' populations.

8.8.45 In relation to pollution related effects, these are broadly considered to be similar to those described for the North Orkney SPA, specifically in relation to indirect effects if seal prey sources digest such pollution leading to death or future ill health within the food chain. Such impacts could also result in the physical deterioration of seals, and their ability to survive over the long term. However as also described in the assessment of effects for the North Orkney SPA, any such pollution events are anticipated to be small-scale, localised and temporary.

8.8.46 Effects during the construction and decommissioning phases will be temporary and are considered to be of **low magnitude**. The IEF is considered to have

overall **low sensitivity** in cognisance of the mobility of seals and ability to adapt by utilising alternative habitats temporarily if necessary. The confidence level for the assessment is considered to be **high.**

Operational Effects

8.8.47 The anticipated operational effects are broadly considered to be the same as those during construction.

8.8.48 However, as described in the assessment of effects for the North Orkney SPA, the number of vessel movements is anticipated to be significantly higher during the operational phase compared to that of the construction phase. This may result in an increased risk of vessel strikes and disturbance/displacement effects.

8.8.49 As such, effects during the operational phase may be permanent and are considered to be of **moderate magnitude**. The IEF is considered to have overall **low sensitivity** in cognisance of the mobility of seals and ability to adapt by utilising alternative habitats if necessary. The confidence level for the assessment is considered to be **high.**

Cetaceans

8.8.50 This section should be ready in conjunction with **Volume 4, Appendix 8.3: Marine Mammal and Fish Baseline**. It should be noted that generally, north of mainland Orkney is typically not considered to be a hotspot for cetacean records, which may be attributed to the shallower waters in the vicinity.

Construction and Decommissioning Effects

8.8.51 Vessel movements have the potential to result in an increased risk of collisions, resulting in the injury/mortality of individuals. Individual collisions as a result of the Proposed Development are unlikely to have an impact on longer term viability of the wider populations of cetacean species, but cumulatively and considered in-combination with existing vessel movements there is potential for effects at the population level.

8.8.52 The occurrence of vessel strikes to each species is detailed below, as informed by literature that reviewed post mortem data of stranded animals (Scottish Government, 2023):

- Atlantic white-sided dolphin – monitoring of stranded animals shows that vessel strikes are rarely a cause of death for this species;
- harbour porpoise – monitoring of stranded animals shows that vessel strikes are a cause of death for this species;
- killer whale – monitoring of stranded animals shows that vessel strikes are a cause of death for this species, although there have been very few post mortems;
- long-finned pilot whale – vessel strikes have not been recorded as a cause of death in long finned pilot whales in UK waters;

- minke whale - monitoring of stranded animals shows that vessel strikes are a cause of death for this species, with 7% of minke whales subject to postmortems in one study between 2000-2017 identifying cause of death of physical trauma due to vessel strike; and
- Risso's dolphin – monitoring of stranded animals shows that vessel strikes are a cause of death for this species.

8.8.53 Although the majority of these species may be susceptible to vessel strikes, they are not particularly large species and are considered to be agile enough to avoid vessels. The majority of the species considered within this assessment are only seen within the ZoI occasionally, and in low numbers. The only exception to this is harbour porpoise which are more widely distributed across north Orkney and more frequently observed. However, vessel movements during the construction period are not anticipated to be significantly higher than that of baseline levels.

8.8.54 Other effects in relation to disturbance and pollution are considered to be broadly similar to seals as described previously, in that they will be small-scale, localised and temporary.

8.8.55 Effects during the construction phase may be permanent and are considered to be of **low magnitude**. The IEF is considered to have overall **low sensitivity** in cognisance of the mobility and wide ranging nature of cetaceans and their ability to adapt by utilising alternative habitats if necessary. The confidence level for the assessment is considered to be **high.**

Operational Effects

8.8.56 The anticipated operational effects are broadly considered to be the same as those during construction.

8.8.57 However, as described in the assessment of effects for the North Orkney SPA, the number of vessel movements is anticipated to be significantly higher during the operational phase compared to that of the construction phase. This may result in an increased risk of vessel strikes and disturbance/displacement effects.

8.8.58 As such, effects during the operational phase will be temporary and are considered to be of **moderate magnitude**. The IEF is considered to have overall **low sensitivity** in cognisance of the mobility and wide ranging nature of cetaceans and their ability to adapt by utilising alternative habitats if necessary. The confidence level for the assessment is considered to be **high.**

Seals

Construction and Decommissioning Effects

8.8.59 The Proposed Development is not anticipated to result in impacts and effects to seals at haul out sites, while they are particularly sensitive to disturbance (for example when breeding, moulting, mating or resting). The nearest designated haul out site (Taking Skerry and Grass Holm) is approximately 0.7 km west of the Proposed Development (from the vessel route). Therefore, seals within their haul

out sites are outwith the predicted ZoI, and although increased vessel movements are likely, they are not anticipated to be at a significantly higher level than existing (either in terms of number or movements), to which seals are expected to have some level of habituation. As such, it is considered that only effects to seals while they are foraging or commuting within the ZoI are feasible.

8.8.60 The other construction and decommissioning impacts and effects for seals in relation to disturbance and pollution are considered widely to be similar to those described for designated sites for which seals are a qualifying feature. All are considered to be small-scale, localised and temporary in nature, and while impacts that result in effects to individuals are feasible, there will be no effects on the wider populations of the species within the Orkney and North Coast SMU.

8.8.61 Effects during the construction phase may be permanent and are considered to be of **low magnitude**. The IEF is considered to have overall **low sensitivity** in cognisance of the mobility and wide ranging nature of seals and their ability to adapt by utilising alternative habitats if necessary. The confidence level for the assessment is considered to be **high.**

Operational Effects

8.8.62 The anticipated operational effects are broadly considered to be the same as those during construction.

8.8.63 However, as described in the assessment of effects for the North Orkney SPA, the number of vessel movements is anticipated to be significantly higher during the operational phase compared to that of the construction phase. This may result in an increased risk of vessel strikes and disturbance/displacement effects.

8.8.64 Effects during the operational phase will be temporary and are considered to be of **low magnitude**. The IEF is considered to have overall **low sensitivity** in cognisance of the mobility and wide ranging nature of seals and their ability to adapt by utilising alternative habitats if necessary. The confidence level for the assessment is considered to be **high.**

Fish

Basking Shark

Construction and Decommissioning Effects

8.8.65 Vessel movements have the potential to result in an increased risk of collisions, resulting in the injury/mortality of individuals. Individual collisions as a result of the Proposed Development are unlikely to have an impact on longer term viability of the wider populations of basking, but cumulatively and considered in-combination with existing vessel movements there is potential for effects at the population level.

8.8.66 Basking shark are considered to be less manoeuvrable, therefore with a higher susceptibility to vessel strikes. Although there appears to have been a

concentration of basking shark sightings around the southern tip of Eday, there are still not a relatively high number of sightings overall when considering data from the last the past 45 years in its totality. They are therefore considered to only be seen occasionally within the ZoI, and due to their low occurrence are considered less likely to be involved in vessel strikes.

8.8.67 Other effects in relation to disturbance and pollution are considered to be broadly similar to cetaceans as described previously, in that they will be small-scale, localised and temporary. Overall, the numbers of basking shark affected will likely be minimal, and effects will be unlikely to affect the wider conservation status of this species.

8.8.68 Effects during the construction and decommissioning phases will be temporary and are considered to be of **low magnitude**. The IEF is considered to have overall **moderate sensitivity** in cognisance of the mobility and wide ranging nature of basking shark and their ability to adapt by utilising alternative habitats if necessary, though acknowledges their reduced manoeuvrability. The confidence level for the assessment is considered to be **high.**

Operational Effects

8.8.69 The anticipated operational effects are broadly considered to be the same as those during construction.

8.8.70 However, as described in the assessment of effects for the North Orkney SPA, the number of vessel movements is anticipated to be significantly higher during the operational phase compared to that of the construction phase. This may result in an increased risk of vessel strikes and disturbance/displacement effects. However, regardless of the number of vessel movements this species still has a very low presence within the ZoI.

8.8.71 Effects during the operational phase will be temporary and are considered to be of **low magnitude**. The IEF is considered to have overall **moderate sensitivity** in cognisance of the mobility and wide ranging nature of basking sharks and their ability to adapt by utilising alternative habitats if necessary, though acknowledges their reduced manoeuvrability. The confidence level for the assessment is considered to be **high.**

PMF Fish

Construction and Decommissioning Effects

8.8.72 Effects to PMF fish species are likely to arise from pollution. These impacts could result in injury or mortality of individual fish or have an indirect effect by reducing the quality of the habitat for spawning, nursing or feeding.

8.8.73 Whilst exact population estimates for the site are not known, it is considered that for most of the species, the habitat and number of individuals present within the site is a small proportion of the total population. Any effects to supporting habitats (e.g. spawning or nursery grounds) as a result of pollution or anchor placement

will be highly localised even if they are permanent, and as such the overall conservation status of PMF fish species is unlikely to be affected.

8.8.74 Therefore, effects during the construction and decommissioning phases may be permanent and are considered to be of **low magnitude**. The IEF is considered to have overall **low sensitivity** in cognisance of their mobility and ability to adapt by utilising alternative habitats if necessary. The confidence level for the assessment is considered to be **moderate.**

Operational Effects

8.8.75 The anticipated operational effects are broadly considered to be the same as those during construction.

8.8.76 Therefore, effects during the construction phase will be temporary and are considered to be of **low magnitude**. The IEF is considered to have overall **low sensitivity** in cognisance of their mobility and ability to adapt by utilising alternative habitats if necessary. The confidence level for the assessment is considered to be **moderate.**

Ornithology

Construction and Decommissioning Effects

8.8.77 In terms of ornithological features that are not qualifying features of designated sites, the Proposed Development has been identified as having the potential to impact breeding bird assemblages during the summer construction period, specifically the species grouping of seabirds, waders and waterfowl, with the species considered to have the potential to be present within the ZoI detailed fully in **Volume 4, Technical Appendix 8.4: Ornithology Baseline** of this EIA Report.

8.8.78 Impacts to foraging individuals is considered overall likely to be similar to those of bird qualifying features of the designated sites discussed previously. This species grouping is considered to have suitable foraging habitats within the ZoI of the Proposed Development, both in terms of the coastal shoreline habitats and the marine environment.

8.8.79 Construction and decommissioning activities at the landing point, as well as additional vessel movements between Kirkwall and Eday, could result in the disturbance and displacement of individual birds of the qualifying features utilising the nearby waters for foraging or loafing. This has the potential to result in reduced foraging time and increased energy expenditure should individual birds flush and need to find alternative foraging habitat.

8.8.80 Any pollution incidents may result in direct effects to the qualifying features, for example if pollution of their plumage reduces buoyancy, waterproofing of feathers and birds' ability to keep themselves warm. Indirect effects may be if the prey sources of the qualifying features, such as marine invertebrates/fish, digest such pollution leading to death or future ill health within the food chain. Such impacts

could also result in the physical deterioration of the qualifying features, and their ability to migrate or survive long term. As described previously, given the nature of the works and machinery/vessels to be utilised, generally any potential pollution events are expected to be small-scale, localised and temporary, with limited dispersal particularly in the vicinity of the landing point due to weak tidal currents.

8.8.81 Effects relating to disturbance or displacement during the construction phase will be temporary and are considered to be of **low magnitude**. Effects as a result of pollution potentially resulting in injury/mortality to the qualifying features may be permanent and of **moderate magnitude**. The IEF is considered to have overall **moderate sensitivity** in cognisance of their overall sensitivity to vessel disturbance, but generally low expected presence of qualifying features within the vicinity of the Proposed Development, and the fact they are mobile and have the ability to move into alternative suitable habitat. The confidence level for the assessment is considered to be **moderate.**

Operational Effects

8.8.82 The anticipated operational effects are broadly considered to be the same as those during construction. However, the operational period is expected to span one winter (non-breeding) and two summer (breeding) periods, and therefore there is the potential that foraging and roosting individuals of seabirds, waders and wildfowl to be impacted during the operational period. For species this is considered feasible for please refer to **Volume 4, Technical Appendix 8:4 Ornithology Baseline** of this EIAR.

8.8.83 However, as described in the assessment of effects for the North Orkney SPA, the number of vessel movements is anticipated to be significantly higher during the operational phase compared to that of the construction phase. This may result in an increased risk of disturbance/displacement effects.

8.8.84 Effects relating to disturbance or displacement during the operational phase will be temporary and are considered to be of **moderate magnitude**. Effects as a result of pollution potentially resulting in injury/mortality to the qualifying features may be permanent and of **moderate magnitude**. The IEF is considered to have overall **low sensitivity** in cognisance of the fact the designated features are mobile and have the ability to move into alternative suitable habitat. The confidence level for the assessment is considered to be **moderate.**

Otter

Construction and Decommissioning Effects

8.8.85 Given the small-scale nature of the Proposed Development, it is not considered that it would represent a barrier to movement or fragmentation of otter territories.

8.8.86 Construction and decommissioning activities, including movement of plant and placement of rock armour, could result in death or injury of individuals through

collision with plant, vehicles or vessels, both onshore or within the water environment.

8.8.87 The most likely response to construction and decommissioning activities, however, is avoidance. It is anticipated that increases in activity levels as a result of plant and personnel presence would result in visual and noise disturbance, causing otter who may utilise the site for commuting and foraging to avoid it. This may temporarily reduce the overall foraging area available to otter in the locale, but it is considered that there would be sufficient alternative foraging areas and commuting routes to sustain the population. The risk of injury or death occurring is also greatly reduced if they avoid the area.

8.8.88 Death or injury to otter could also occur as a result of a pollution incident, either through direct contact with a contaminant or indirectly through consumption of affected prey items. Prey populations in the locale could also be temporarily reduced in the short term if they are affected by a pollution incident.

8.8.89 The above construction and decommissioning impacts are considered to be temporary and are only expected to affect a small area of habitat, which is not considered to be used for breeding. It is therefore not expected that they will affect the favourable conservation status of the otter population in the locale.

8.8.90 One resting site is considered likely to be permanently lost as a result of the Proposed Development, though it has been assessed that this area is unlikely to be utilised as a natal holt and is considered likely used as a couch or holt and only seasonally. Although this represents a permanent loss to otter habitat, there have been multiple other utilised suitable resting sites identified through surveys in the wider area, which are outwith the ZoI and serve as sufficient alternatives. However, further survey should be undertaken to verify the assumptions made in this assessment and bolster the confidence in how this resting site is utilised by otter.

8.8.91 As such, effects relating to disturbance or displacement during the construction and decommissioning phases will be temporary and are considered to be of **low magnitude**. Effects as a result of pollution potentially resulting in injury/mortality to the qualifying features may be permanent and of **moderate magnitude**. The IEF is considered to have overall **low sensitivity** in cognisance of the fact otter are mobile and have the ability to move into alternative suitable habitat. The confidence level for the assessment is considered to be **moderate.**

Operational Effects

8.8.92 The anticipated operational effects of the Proposed Development on otter are anticipated to be limited to those as a result of pollution and disturbance as a result of increased levels of activity around the pier, as described under the Construction Effects above.

8.8.93 The operational impacts are considered to be temporary and not expected that they will affect the favourable conservation status of the otter population in the

locale. As such the impacts are considered to be of **low magnitude** and the IEF to be of **low sensitivity.** The confidence level for the assessment is **high**.

Marine Annex I and PMF Habitats

Construction and Decommissioning Effects

8.8.94 Effects on habitats of conservation significance (either PMFs or Annex I) are anticipated to be limited to pollution and the introduction/spread of mINNS.

8.8.95 Pollution events have the potential to cause damage and destruction to habitats. Though as described previously, it is considered likely that any pollution events arising as a result of the Proposed Development will be small-scale, localised and temporary. As such, it is considered unlikely that any pollution arising from the landing point construction and decommissioning would reach habitats in sufficient amounts to cause harm. The exception to this is maerl beds, which NatureScot have raised during consultation are not mapped fully within the immediate vicinity of the Proposed Development, and may be directly damaged by the placement of anchors. Further survey is required to determine whether or not maerl beds are present underneath the proposed anchor locations.

8.8.96 There is also a risk of introduction of mINNS through vessel movements to facilitate construction and decommissioning of the landing point, which could result in longer term damage or degradation of habitats, with mINNS likely to outcompete the native flora or fauna.

8.8.97 Construction and decommissioning effects could be permanent, though reversible, and are considered to be of **moderate magnitude** and the IEF to be of **moderate sensitivity**. The confidence level for the assessment is **moderate**, in cognisance of the current uncertainty as to the extent of maerl bed distribution, and likely dispersal of pollutants.

Operational Effects

8.8.98 The anticipated operational effects are broadly considered to be the same as those during construction, with the exception of anchor placement, which are not relevant once the landing point is built and operational and are considered above.

8.8.99 Operational effects could be permanent, though reversible, and are considered to be of **moderate magnitude** and the IEF to be of **moderate sensitivity**. The confidence level for the assessment is **moderate**, in cognisance of the current

uncertainty as to the extent of maerl bed distribution, and likely dispersal of pollutants.

Commercial Fishery

Construction and Decommissioning Effects

8.8.100 The main impact on salmon present within the commercial fishery would be as a result of pollution.

8.8.101 As discussed previously, it is considered likely that any pollution events arising as a result of the Proposed Development will be small-scale, localised and temporary. Further, given the generally weak tidal currents at the landing point and the stronger southern flood tide and residual southern tidal current, it is considered that any pollutants generated would disperse in a south easterly direction. As such, it is considered unlikely that any pollution arising from the landing point construction and decommissioning would reach the fish farm in sufficient amounts to cause harm.

8.8.102 Therefore, effects during the construction and decommissioning phases will be temporary and are considered to be of **low magnitude**. The IEF is considered to have overall **moderate sensitivity** in cognisance of their lack of ability to move to alternative habitats. The confidence level for the assessment is considered to be **moderate,** in cognisance of the lack of modelling data to underpin assumptions regarding potential dispersal of pollutants.

Operational Effects

8.8.103 The anticipated operational effects of the Proposed Development on the commercial fish farm are anticipated to be limited to those as a result of pollution, described under the Construction Effects above.

8.8.104 Effects during the operational phase will be temporary and are considered to be of **negligible magnitude**. The IEF is considered to have overall **moderate sensitivity** in cognisance of their lack of ability to move to alternative habitats. The confidence level for the assessment is considered to be **moderate,** in cognisance of the lack of modelling data to underpin assumptions regarding potential dispersal of pollutants.

8.9 Mitigation

Pre-Construction

Additional Surveys

8.9.1 Benthic habitat surveys should be undertaken within the vicinity of the Proposed Development, and particularly the proposed anchor locations, to inform mico-siting

of anchor placement and avoidance of key habitats (primarily considered to be maerl beds).

8.9.2 Otter monitoring should be undertaken for up to a year in advance of construction, with a focus on the resting site to be potentially destroyed as a result of the Proposed Development. The intent of this is to fully inform updates to the Outline SPP for Otter, and any additional mitigation required, as detailed fully in **Appendix 8.5: Outline Otter Species Protection Plan (SPP).**

During Construction, Decommissioning and Operation

General Mitigation

8.9.3 In order to mitigate for potential impacts relating to pollution, adherence to standard best practice working methods set out in the CEMP, including specific cognisance of the following relevant good practice guidelines (GPPs);

- GPP 5: Works and maintenance in or near water;
- GPP 6: Working at construction and demolition sites;
- PPG 7: Safe Storage – The safe operation of refuelling facilities;
- GPP 21: Pollution and incident response planning; and
- GPP 22: Dealing with spills.

8.9.4 All personnel on the site should be made aware of the environmental sensitivities of the site via the site induction and additional task specific toolbox talks as required.

8.9.5 Where possible construction activities will be confined to daylight hours to reduce disturbance to commuting and foraging fauna within the locale. Any artificial light required during construction will be fitted with shades and directed at the required work area only.

Otter

8.9.6 Mitigation for otter is detailed fully in Volume 4, **Appendix 8.5: Outline Otter Species Protection Plan (SPP**) of this EIA Report and summarised below:

- A pre-works survey should be undertaken immediately prior to construction (this is above and beyond the additional surveys described in Paragraph 8.9.2) to ensure the baseline remains valid.
- An ECoW should oversee any works that will obstruct or destroy the resting site under the existing Eday pier.
- Any works to the resting site are considered highly likely to require a derogation licence from NatureScot, inclusive of an otter SPP. Preliminary measures and suggested/content and format are provided in the **Appendix 8.5**, but this should be considered a live document to be updated as necessary following further survey and confirmation of use of the resting site.

- Any works causing high levels of noise or human activity should be limited to daylight hours to reduce disturbance to otter activity as they are likely to concentrate foraging and commuting activities around dawn and dusk.
- Any excavations created during works should not be left open for otter or other mammals to become trapped. Appropriate covers should be fitted at the end of every working day. At the very least, a shallow sloping edge or some form of ramp should be placed in the excavations to allow any animals to climb out.
- Ensure all rubbish and materials will be collected and removed from site on a regular basis to prevent trapping or injury of any wildlife.
- Embedded mitigation regarding lighting should be adhered to. Permanent lighting installed should be of the warm white spectrum (ideally <2700 Kelvin) the adjacent shoreline to reduce disturbance to resting, commuting and foraging otter.
- Vehicular access into and out of the site must be made slow and cognisant of the possibility of striking an otter with a vehicle. A maximum speed limit of 15 mph is suggested.
- If an otter is noticed in the works areas, works should stop immediately and the ECoW contacted.

Ornithology

8.9.7 An Ornithology SPP should be produced, to be included in the CEMP.

8.9.8 A suitably experienced ornithologist will be deployed at the landing point, and/or on vessels, during the breeding period to monitor for the presence and any observed reactions of birds, and specifically breeding Red-throated Divers, in the vicinity of the Proposed Development. A policy of adaptive management should be considered across the areas where works were undertaken, with consideration given to the consequences of failure.

Marine Mammals and Basking Shark

8.9.9 A Marine Mammal and Basking Shark SPP will be produced as an Appendix to the CEMP.

8.9.10 A Vessel Management Plan (VMP) should be produced detailing vessel routes, number of movements (both related to construction and operation) between sites to minimise and avoid, where possible, disturbance and injury/mortality related impacts to marine mammals and fish in particular. Consideration of implementation of an appropriate and strict speed limit for marine traffic associated with both construction and operation of the proposed development.

Fish

8.9.11 Should dry working areas be required, or use of an intake pump to remove water, this should be screened to prevent fish from being injured. Where appropriate,

measures should be implemented for any fish rescue within the confines of any dry working areas.

8.9.12 The ECoW should monitor any fish deaths as a result of potential pollution events, and report these to NatureScot and Marine Directorate (number of fish and species). Consideration should be given to mitigation strategies to reduce fish mortality if it becomes an issue.

Spread of mINNS

8.9.13 The principal contractor will produce and implement a robust biosecurity plan throughout the duration of works. This will include a check clean and dry protocol (as per Non-Native Species Secretariat, No Date) for equipment and plant machinery, as appropriate, prior to deployment and at regular intervals throughout construction and operation to reduce risk of transmitting non-native and invasive species. The plan will be submitted to the planning authority and other relevant consultees for approval prior to works commencing, and implementation would be audited by the ECoW.

8.9.14 The following guidance documents and resources will be used to produce the biosecurity plan, as recommended by NatureScot during consultation:

- Guidance for Producing Site and Operation-Based Plans for Preventing the Introduction of Non-Native Species (Payne *et al*., 2014);
- NatureScot Commissioned report 748; Marine biosecurity planning – Identification of best practice: A review (Cook *et al*., 2014);
- Ballast Water Management (BWM) guidelines (International Marine Organisation, 2025);
- Guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species (International Marine Organisation, 2023); and
- Ballast Water Management Policy for Scapa Flow (OIC, 2023).

8.9.15 Any mINNS presence data should be shared with OIC, NatureScot and Marine Directorate. Thought it should be noted that existing Backaland Pier is part of the ongoing mINNS monitoring undertaken by OIC which is anticipated to continue through the lifetime of the Proposed Development.

8.10 Assessment of Residual Effects

8.10.1 Taking the above mitigation measures into consideration, it is considered that residual effects are specific only during the operational phase of the development and relate specifically to injury/mortality, disturbance and displacement as a result of increased vessel movements. The IEFs this is considered to apply to are as follows:

- North Orkney SPA
- Muckle and Little Green Holm SSSI

- Calf of Eday SPA/SSSI
- Mill Loch SSSI
- Sanday SAC
- Eynhallow SSSI
- Faray and Holm of Faray SAC/SSSI
- Ornithology
- Marine Mammals

8.10.2 The significance of residual effects considered to be likely, once mitigation has been taken into consideration is summarised in **Section 8.11, Table 8.10.**

8.11 Assessment of Cumulative Effects

8.11.1 A cumulative assessment of the potential effects of the Proposed Development has been undertaken reviewing data from the OIC planning portal (OIC, 2025). Table 8.10 below summarises the findings of the cumulative assessment.

8.11.2 The cumulative assessment has been limited to disturbance/displacement and injury/mortality of key IEFs (marine mammals, ornithology and otter), with no potential for residual effects predicted for pollution.

Table 8.10: Other Schemes Assessed for Cumulative Effects.

Scheme Name (Distance to the Proposed Development)	Planning Ref. and Status	Description of Scheme	Discussion and Conclusion
Neven Point Wind Farm	Planning application submitted June 2025	The Neven Point Wind Farm project is located on Greentoft Farm land on the southern edge of Eday. Following initial feasibility work, with proposals to erect five turbines.	Both the Wind Farm and this Proposed Development are located within the foraging range of otter. However, the Wind Farm is not anticipated to result in the destruction of any resting or breeding sites, and the construction of the Wind Farm and the Proposed Development will be phased appropriately to avoid temporal overlap of significant construction activities, where relevant. It is assessed that cumulative effects are therefore unlikely. There is the potential for cumulative effects should either the Wind Farm or Proposed Development result in the injury or mortality of ornithological interests.
Scapa Deep Water Quay	23/289/NATEIA Awaiting decision	Construct a deep water quay including 597 metre, 2.7 hectare quayside and	There is the potential for cumulative effects should either this scheme or the Proposed

Scheme Name (Distance to the Proposed Development)	Planning Ref. and Status	Description of Scheme	Discussion and Conclusion
		quay extension, excavate landform and reclaim land to create an 18 hectare laydown including rock armour revetments, construct an access road, vehicle parking, water tanks and associated infrastructure.	Development result in the injury or mortality of key IEFs, including marine mammals, basking shark and ornithological interests. If the construction phases occur concurrently then additive cumulative effects may occur. If the construction phases are sequential then the period receptors are exposed to impacts may be prolonged. During the operational phase both projects are expected to result in increased vessel movements, albeit on a temporary basis for the Proposed Development, and therefore cumulative effects associated with impacts resulting from vessel movements are possible.
Hatston Ferry Terminal	23/256/NATEIA Awaiting decision	Construct a 300 metre pier extension, reclaim land to create a 7.5 hectare laydown area including rock armour, construct a ship lift, linkspan, fuel supply infrastructure, water storage tanks, roads and vehicle parking and associated infrastructure.	There is the potential for cumulative effects should either this scheme or the Proposed Development result in the injury or mortality of key IEFs, including marine mammals, basking shark and ornithological interests. If the construction phases occur concurrently then additive cumulative effects may occur. If the construction phases are sequential then the period receptors are exposed to impacts may be prolonged. During the operational phase both projects are expected to result in increased vessel movements, albeit on a temporary basis for the Proposed Development, and therefore cumulative effects associated with impacts resulting from vessel movements are possible.
Quanterness (Land Near), St Ola, Orkney	20/037/TPPMAJ Decided - granted	Erect 6 wind turbines (maximum height 149.9 metres, maximum wind farm capacity 50MW), erect a meteorological mast (maximum height 90 metres) and a substation, create an access and construct access tracks, and associated infrastructure	The EIA for this development concluded that predicted effects are barely perceptible for ornithological features, and no significant residual effects. Given the species of concern for this scheme compared to the Proposed Development, it is assessed that cumulative effects are unlikely.

Scheme Name (Distance to the Proposed Development)	Planning Ref. and Status	Description of Scheme	Discussion and Conclusion
Harcusquoy, Eday Orkney	25/043/SCR Decided	A screening opinion request was submitted to erect three wind turbines (maximum height 14.75m).	It was decided by OIC that the Proposed Development does not require an EIA. NatureScot commented that the proposal is not likely to have a significant effect on the environment as defined by the EIA regulations, primarily due to the height of the turbines. As such, cumulative effects with the Proposed Development are considered unlikely.
Faray Wind Farm	21/240/TPPMAJ 21/408/MARCON Decided - granted	Erect 6 wind turbines (maximum height 149.9 metres, maximum wind farm capacity 50MW), erect a meteorological mast (maximum height 90 metres) and a substation, construct access tracks, crane hardstandings, underground cabling, transformers, and a slipway and jetty, create a borrow pit, and associated infrastructure.	The scheme has potential to result in adverse impacts to seals within Faray and Holm of Faray SAC, and the Sanday SAC, and so there is potential for cumulative impacts to occur. However, it is expected that adverse impacts will largely be avoided if mitigation measures outlined in NatureScot's planning advice (CDM163703) for the scheme is adhered to. As such, cumulative effects should be avoided.

8.12 Biodiversity Enhancements

Overview

8.12.1 This section is intended to be a precursor to a more detailed Biodiversity Enhancement and Management Plan (BEMP), which would be produced and agreed with OIC, in consultation with NatureScot and other relevant stakeholders. The aim would be to produce the BEMP post consent, but prior to the commencement of construction, and for the BEMP to be informed by a site visit by an appropriately experienced ecologist to gather baseline data regarding the habitats on site, and the suitability of the potential measures proposed.

8.12.2 It is not intention at this stage to provide full details of proposed enhancement measures, many of which cannot be determined fully at this stage, though Neven Point Wind Ltd are committed to delivering meaningful enhancements for biodiversity. The securing, by Neven Point Wind Ltd, of an area of land at Stackald (immediately south and east of the Proposed Development), which was confirmed at a later stage of the development of this EIA Report, presents additional opportunities for biodiversity enhancements.

8.12.3 Although it is acknowledged that on-site enhancements are preferable, due to the nature of the Proposed Development it is difficult to deliver feasible and

meaningful enhancements within the site. Therefore, off-site enhancements within the wider island of Eday, and even the wider Orkney locale, will be considered.

8.12.4 A metric-based approach has not been applied in this instance, due to the nature of the red line boundary which includes artificial structures with minimal capacity for measurable habitat-based enhancement. Instead, a qualitative approach has been adopted, drawing on best practice guidelines to identify meaningful enhancement measures of benefit to the wider locale.

8.12.5 High-level opportunities identified at this stage are detailed further below. It should be noted that is not anticipated that all of these are required to deliver an overall biodiversity enhancement for the project, especially in cognisance of its limited footprint.

Biodiversity Enhancement Options

Grassland Enhancement

8.12.6 Given the current nature of the grassland at the land at Stackald (primarily heavily grazed pastoral fields), it is possible that even simple measures such as fencing an area of this off to remove grazing pressures and allowing natural regeneration of vegetation alongside potential sowing of suitable grassland and/or wildflower seed mixes. This would have associated benefits for invertebrates and pollinators, which in turn serve as a prey species for other insects, birds and small mammals.

8.12.7 Enhancing the grassland may require the area being scarified then over-sown with an appropriate seed mix, which may include neutral grassland or coastal grassland mixes[5]. The appropriate seed mix would be identified following a site visit and establishment of baseline habitat present and their condition. Many of such seed mixes will contain yellow rattle (*Rhinanthus minor*). However, if it isn't in the selected mix then it should be sown separately as it is parasitic to grasses, it helps reduce their vigour and facilitates the growth of other wildflowers. Cognisance needs to be given to flowering plants which are appropriate to the site specific conditions. Sowing instructions of selected mixes should be followed, and is likely to be best done during the autumn, especially for yellow rattle.

8.12.8 To encourage both species and structural diversity, an appropriate mowing regime should be implemented, potentially along the lines of the below:

- One cut should take place in late summer from August – September. Cutting can be carried out by a standard ride on or push mower. For a push mower, strimming of the grass may be required first if the growth is too tall.
- The grass cuttings should be removed from the site within 2 weeks of cutting to prevent soil improvement via reabsorption of nutrients and to avoid smothering new growth. The cuttings can either be removed at the time of mowing, by using a mower with a grass collection attachment, or raked up and removed after mowing.

[5] Scotia Seeds Coastal Meadow Mix or MG5 Meadow Mix

- Low cutting heights should be avoided with a minimum grass height of 10cm being maintained at all times.
- Mowing should be avoided immediately after, or during, wet conditions to prevent machinery causing rutting and/or soil compaction.
- If taller, rank grasses are present utilise a two-cut regime, with an additional cut, either in spring, before the start of May, or a second cut in autumn (September-October).
- Small patches (c.10-20%) of the site should be left unmown each year on rotation to ensure that some long vegetation is retained to provide cover for small mammals, birds and invertebrates, which may utilise the site.
- Maintaining some areas of bare ground will aid in the future establishment of wildflowers and can be of benefit to invertebrates. This can be achieved through localised scarification with a rake or scalping with machinery (e.g. a strimmer).

8.12.9 In addition, insect shelters could be incorporated into the grassland, in the form of rock piles, deadwood piles and/or 'bug hotels' which contain a range of features for sheltering and nesting insects. There are a variety of bug hotel designs, these could be freestanding or mounted on small posts within the enhanced grassland.

Provision of Nesting/Resting Resources for Fauna

8.12.10 House Sparrow (*Passer domesticus*), Starling (*Sturnus vulgaris*) and Swift (*Apus apus*) are all BoCC red listed species which were identified during the desk study to be potentially present within the locale. The enhancement of grassland for invertebrates as describe above, will provide additional foraging resource for these species. Additional breeding habitat can be provided via nest boxes which can be affixed to any of the buildings within land purchased by the applicant at Stackald, should they be retained. Suitable boxes include:

- 1SP Schwegler Sparrow Terrace[6]
- Vivara Pro WoodStone Starling Nest Box[7]
- Vivara Pro Woodstone Swift Nest Box[8]

8.12.11 Considering the high levels of use by otter of the Eday coast, but relative absence of suitable resting sites for holt creation, an artificial otter holt could be created to provide this resource. Key considerations for the creation of an artificial holt include placement in an undisturbed area, free from flooding and close to a good food supply, as far away from roads as possible. Artificial holts can be a structure

[6] Available at: https://www.nhbs.com/1sp-schwegler-sparrow-terrace
[7] Available at: https://www.nhbs.com/vivara-pro-woodstone-starling-nest-box
[8] Available at: https://www.nhbs.com/woodstone-swift-nest-box

of pipes that will create tunnels for the otter, or it can be as simple as a log pile with ample entrance points leading the otter to a cavity.

Intertidal Habitat Enhancement

8.12.12 Habitat features could be created within the rock armour of the landing point, to maximise ecological niches. The exact prescriptions required to achieve this depends somewhat on the finalised design and engineering requirements for the landing point and so will need to be developed with the chosen contractor. Diversity of habitats within rock armour can be achieved passively through careful selection and placement of boulders to create ledges and pools or actively through introduction of features such as ridged concrete tiles which are designed to mimic natural rock features which have both been shown to have positive effects on biodiversity (MaCarthur *et al.*, 2020; Vozzo *et al*., 2021).

8.12.13 Eco-blocks are pre-cast artificial structures that feature a range of textured surfaces, holes and depressions and are made of materials (generally concrete) to which marine plants and animals can attach and become established over time. They are designed to replicate rocky habitats and various manufacturers have begun to provide eco-blocks for developments with design feature specifications ranging from simple blocks with rough textures and grooves and shallow rock pools to more complex blocks that have deep cavities or holes. The manufacture of eco-blocks has evolved to use recycled plastic free materials such as low-carbon concrete mixes that use waste products from industrial processes and the inclusion of shell material to encourage attachment of particular species (Potet *et al.*, 2021). Various case studies (Firth *et al*. 2013 and 2014) have shown success with dedicated pre-cast eco-engineering blocks which were found to support a higher diversity of species across the various micro habitats, while adjacent boulders supported only four species.

Wider Opportunities in Orkney

8.12.14 Financial contributions could be made to existing co-ordinated marine enhancement programmes in the wider Orkney area, through liaison directly with Orkney to identify suitable schemes, or wider organisation such as the Scottish Marine Environmental Enhancement Fund (SMEEF). Example local projects and organisations which may benefit, and relate directly to Orkney, include:

- Orkney Skate Trust
- Project Seagrass
- Orkney Native Wildlife Project

8.13 Summary

8.14 Overall, this impact assessment has concluded that even with mitigation, residual effects are expected as a result of the operational phase only. For the North Orkney SPA and Mill Loch SSSI, (and ornithology interests generally, these are expected to be temporary in nature and of low significance. For selected designated sites (the Muckle and Little Green Holm SSSI, Sanday SAC,

Eynhallow SSSI, Faray and Holm of Faray SAC/SSSI), marine mammals and basking shark, residual effects are anticipated to be permanent in nature but of low significance.

8.15 The Proposed Development is committed to providing meaningful enhancements for biodiversity, in accordance with National Planning Framework 4. Feasible enhancement options have been provided within this Chapter, with a commitment to developing a BEMP prior to construction commencing.

Table 8.11: Summary Table

IEF	Description of Effect	Significance of Potential Effect		Mitigation Measures	Significance of Residual Effect	
		Significance	Beneficial / Adverse		Significance	Beneficial / Adverse
During Construction and Decommissioning						
North Orkney SPA	Direct disturbance and displacement of foraging individuals	Moderate, temporary	Adverse	Implementation of ornithology SPP. ECoW monitoring. Implementation of VMP	Negligible, temporary	Adverse
	Direct injury/mortality as a result of pollution	Moderate, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Moderate, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Ve Ness LNCS, Ward Hill and Chapel Hill LNCS, Doomy and Whitemaw Hill SSSI	Direct disturbance and displacement of foraging individuals	Moderate, temporary	Adverse	Implementation of ornithology SPP. ECoW monitoring.	Negligible, temporary	Adverse
	Direct injury/mortality as a result of pollution	Moderate, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Moderate, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Calf Of Eday SPA/SSSI	Direct disturbance and displacement of foraging individuals	Low, temporary	Adverse	Implementation of ornithology SPP. ECoW monitoring.	Negligible, temporary	Adverse
	Direct injury/mortality as a result of pollution	Moderate, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse

IEF	Description of Effect	Significance of Potential Effect		Mitigation Measures	Significance of Residual Effect	
		Significance	Beneficial / Adverse		Significance	Beneficial / Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Moderate, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Mill Loch SSSI	Direct disturbance and displacement of foraging individuals	Moderate, temporary	Adverse	Implementation of ornithology SPP. ECoW monitoring. Implementation of VMP	Negligible, temporary	Adverse
	Direct injury/mortality as a result of pollution	Moderate, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Moderate, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Muckle and Little Green Holm SSSI, Sanday SAC, Eynhallow SSSI, Faray and Holm of Faray SAC/SSSI	Direct disturbance and displacement of foraging individuals	Low, temporary	Adverse	Implementation of marine mammal SPP. Implementation of VMP.	Negligible, temporary	Adverse
	Direct injury/mortality as a result of vessel strikes.	Low, temporary	Adverse	Implementation of marine mammal SPP. Implementation of VMP.	Negligible, temporary	Adverse
	Direct injury/mortality as a result of pollution	Low, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Low, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Marine Mammals (Cetaceans and Seals)	Direct disturbance and displacement of foraging individuals	Low, temporary	Adverse	Implementation of marine mammal SPP. Implementation of VMP.	Negligible, temporary	Adverse
	Direct injury/mortality as a result of vessel strikes.	Low, permanent	Adverse	Implementation of marine mammal SPP. Implementation of VMP.	Negligible, permanent	Adverse

IEF	Description of Effect	Significance of Potential Effect		Mitigation Measures	Significance of Residual Effect	
		Significance	Beneficial / Adverse		Significance	Beneficial / Adverse
	Direct injury/mortality as a result of pollution	Low, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, permanent	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Low, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Basking Shark	Direct disturbance and displacement of foraging individuals	Low, temporary	Adverse	Implementation of basking shark SPP. Implementation of VMP.	Negligible, temporary	Adverse
	Direct injury/mortality as a result of vessel strikes.	Low, permanent	Adverse	Implementation of basking shark SPP. Implementation of VMP.	Negligible, permanent	Adverse
	Direct injury/mortality as a result of pollution	Low, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, permanent	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Low, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
PMF Fish	Direct injury/mortality as a result of pollution	Low, temporary	Adverse	If any dry working areas were required, implementation of fish rescue. Monitoring of fish deaths in response to potential pollution events.	Negligible, temporary	Adverse
	Direct loss/damage to supporting habitats as a result of pollution	Low, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, permanent	Adverse
	Direct loss/damage to supporting habitats as a result of anchor placement	Low, permanent	Adverse	Adherence to CEMP and standard PPGs. Benthic surveys to determine presence/absence of suitable habitats.	Negligible, permanent	Adverse

IEF	Description of Effect	Significance of Potential Effect		Mitigation Measures	Significance of Residual Effect	
		Significance	Beneficial / Adverse		Significance	Beneficial / Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Low, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Ornithology	Direct disturbance and displacement of foraging individuals	Low, temporary	Adverse	Implementation of ornithology SPP. ECoW supervision.	Negligible, temporary	Adverse
	Direct injury/mortality as a result of pollution	Moderate, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Moderate, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Otter	Direct disturbance and displacement of foraging individuals	Moderate, temporary	Adverse	Implementation of otter SPP. Adherence to standard good practice measures.	Negligible, temporary	Adverse
	Loss of resting habitat.	Low, permanent	Adverse	Further monitoring of resting site. Pre-construction surveys. NatureScot licensing (as required). Implementation of otter SPP. ECoW supervision. Adherence to standard good practice measures.	Negligible, permanent	Adverse
	Direct injury/mortality as a result of pollution or vehicle/plant collision.	Moderate, permanent	Adverse	Adherence to CEMP and standard PPGs Adherence to standard good practice measures.	Negligible, temporary	Adverse

IEF	Description of Effect	Significance of Potential Effect		Mitigation Measures	Significance of Residual Effect	
		Significance	Beneficial / Adverse		Significance	Beneficial / Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Moderate, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Marine Annex I and PMF Habitats	Direct habitat loss/degradation as a result of pollution events.	Moderate, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, permanent	Adverse
	Direct habitat loss/damage as a result of anchor placement.	Low, permanent	Adverse	Benthic survey. Micro siting of anchor placement (dependent on survey results).	Negligible, permanent	Adverse
	Introduction and spread of mINNS.	Moderate, permanent	Adverse	Adherence to CEMP and Biosecurity Plan	Negligible, permanent	Adverse
Commercial Fishery	Direct injury/mortality as a result of pollution.	Low, permanent	Adverse	Adherence to CEMP and standard GPPs.	Negligible, permanent	Adverse
During Operation						
North Orkney SPA	Direct disturbance and displacement of foraging individuals	Moderate, temporary	Adverse	Implementation of ornithology SPP. ECoW monitoring.	Low, temporary	Adverse
	Direct injury/mortality as a result of pollution	Moderate, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Moderate, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Ve Ness LNCS, Ward Hill	Direct disturbance and displacement of foraging individuals	Moderate, temporary	Adverse	Implementation of ornithology SPP. ECoW monitoring.	Negligible, temporary	Adverse

IEF	Description of Effect	Significance of Potential Effect		Mitigation Measures	Significance of Residual Effect	
		Significance	Beneficial / Adverse		Significance	Beneficial / Adverse
and Chapel Hill LNCS, Doomy and Whitemaw Hill SSSI	Direct injury/mortality as a result of pollution	Moderate, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Moderate, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Calf Of Eday SPA/SSSI	Direct disturbance and displacement of foraging individuals	Moderate, temporary	Adverse	Implementation of ornithology SPP. ECoW monitoring.	Negligible, temporary	Adverse
	Direct injury/mortality as a result of pollution	Moderate, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Moderate, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Mill Loch SSSI	Direct disturbance and displacement of foraging individuals	Moderate, temporary	Adverse	Implementation of ornithology SPP. ECoW monitoring.	Low, temporary	Adverse
	Direct injury/mortality as a result of pollution	Moderate, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Moderate, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Muckle and Little Green Holm SSSI, Sanday SAC, Eynhallow	Direct disturbance and displacement of foraging individuals	Moderate, temporary	Adverse	Implementation of marine mammal SPP. Implementation of VMP.	Low, temporary	Adverse
	Direct injury/mortality as a result of vessel strikes.	Moderate, permanent	Adverse	Implementation of marine mammal SPP. Implementation of VMP.	Low, permanent	Adverse

IEF	Description of Effect	Significance of Potential Effect		Mitigation Measures	Significance of Residual Effect	
		Significance	Beneficial / Adverse		Significance	Beneficial / Adverse
SSSI, Faray and Holm of Faray SAC/SSSI	Direct injury/mortality as a result of pollution	Moderate, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, permanent	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Moderate, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Marine Mammals (Cetaceans and Seals)	Direct disturbance and displacement of foraging individuals	Moderate, temporary	Adverse	Implementation of marine mammal SPP. Implementation of VMP.	Negligible, temporary	Adverse
	Direct injury/mortality as a result of vessel strikes.	Moderate, permanent	Adverse	Implementation of marine mammal SPP. Implementation of VMP.	Low, permanent	Adverse
	Direct injury/mortality as a result of pollution	Low, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, permanent	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Low, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Basking Shark	Direct disturbance and displacement of foraging individuals	Moderate, temporary	Adverse	Implementation of basking shark SPP. Implementation of VMP.	Negligible, temporary	Adverse
	Direct injury/mortality as a result of vessel strikes.	Moderate, permanent	Adverse	Implementation of basking shark SPP. Implementation of VMP.	Low, permanent	Adverse
	Direct injury/mortality as a result of pollution	Low, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, permanent	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Low, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse

IEF	Description of Effect	Significance of Potential Effect		Mitigation Measures	Significance of Residual Effect	
		Significance	Beneficial / Adverse		Significance	Beneficial / Adverse
PMF Fish	Direct injury/mortality as a result of pollution	Low, temporary	Adverse	If any dry working areas were required, implementation of fish rescue. Monitoring of fish deaths in response to potential pollution events.	Negligible, temporary	Adverse
	Direct loss/damage to supporting habitats as a result of pollution	Low, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, permanent	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Low, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Ornithology	Direct disturbance and displacement of foraging individuals	Moderate, temporary	Adverse	Implementation of ornithology SPP. ECoW monitoring.	Low, temporary	Adverse
	Direct injury/mortality as a result of pollution	Moderate, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Moderate, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Otter	Direct disturbance and displacement of foraging individuals	Low, temporary	Adverse	Implementation of otter SPP. Adherence to standard good practice measures.	Negligible, temporary	Adverse
	Direct injury/mortality as a result of pollution or vehicle/plant collision.	Moderate, permanent	Adverse	Adherence to CEMP and standard PPGs Adherence to standard good practice measures.	Negligible, temporary	Adverse

IEF	Description of Effect	Significance of Potential Effect		Mitigation Measures	Significance of Residual Effect	
		Significance	Beneficial / Adverse		Significance	Beneficial / Adverse
	Indirect effects from pollution resulting in reduction in prey resources.	Moderate, temporary	Adverse	Adherence to CEMP and standard PPGs	Negligible, temporary	Adverse
Marine Annex I and PMF Habitats	Direct habitat loss/degradation as a result of pollution events.	Moderate, permanent	Adverse	Adherence to CEMP and standard PPGs	Negligible, permanent	Adverse
	Introduction and spread of mINNS.	Moderate, permanent	Adverse	Adherence to CEMP and Biosecurity Plan	Negligible, permanent	Adverse
Commercial Fishery	Direct injury/mortality as a result of pollution.	Low, permanent	Adverse	Adherence to CEMP and standard GPPs.	Negligible, permanent	Adverse

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