

## TECHNICAL APPENDIX 5.5

## **Orkney Logistics Base (Hatston) Habitat Regulations Appraisal**



**June 2023**

# CONTROL SHEET

Client: Orkney Island Council Harbour Authority  
 Project Title: Hatston  
 Report Title: Habitat Regulations Appraisal  
 Document number: 13161  
 Project number: 674795

## Issue Record

Issue	Status	Author	Reviewer	Approver	Issue Date
1	Draft for Comment	MS		MS	12/05/2023
2	FINAL	MS	KH/OMAG	MS	06/06/2023

## EnviroCentre Limited Office Locations:

**Glasgow**

**Edinburgh**

**Inverness**

**Banchory**

Registered Office: Craighall Business Park 8 Eagle Street Glasgow G4 9XA  
 Tel 0141 341 5040 [info@envirocentre.co.uk](mailto:info@envirocentre.co.uk) [www.envirocentre.co.uk](http://www.envirocentre.co.uk)

This report has been prepared by EnviroCentre Limited with all reasonable skill and care, within the terms of the Contract with Orkney Island Council Harbour Authority (“the Client”). EnviroCentre Limited accepts no responsibility of whatever nature to third parties to whom this report may be made known.

No part of this document may be altered without the prior written approval of EnviroCentre Limited.

EnviroCentre Limited is registered in Scotland under no. SC161777.

VAT no. GB 348 6770 57.



## EXECUTIVE SUMMARY

Envirocentre Limited has been commissioned by Orkney Island Council Harbour Authority to undertake a Habitats Regulation Appraisal (HRA) to determine whether the proposed expansion of Hatston Pier and Harbour works will have any adverse impact on the integrity of any European designated sites.

The potential effects of the proposal on the designated features of the European designated sites were considered as part of a Habitats Regulations Assessment. Likely Significant Effects (LSE) on the North Orkney Special Protection Area (SPA), Orkney Mainland Moors SPA, Faray and Holm of Faray Special Area of Conservation (SAC) and Sanday SACs could not be ruled out during the screening stage of the assessment; and so an Appropriate Assessment (AA) has been conducted to ascertain whether the proposed works will adversely affect the integrity of the site's qualifying features.

During the AA process it was possible to rule out adverse effects from impacts to the assessed designated sites. Mitigation to be enacted includes:

- Vessels to use established shipping lanes and adherence to speed limits;
- Deployment of an Ornithologist to monitor for the presence of qualifying species of the North Orkney SPA in the vicinity of the Proposed Development during piling and blasting works;
- A soft-start approach to piling works to prevent disturbance;
- Production and adherence to detailed Marine Mammal Protection Plan;
- Production and adherence to a detailed Pollution Prevention Plan; and
- A silt boom to contain fine sediments will be used whilst land reclamation activities are undertaken.

## Contents

Executive Summary .....	i
1 Introduction .....	1
1.1 Terms of Reference.....	1
1.2 Scope of Report.....	1
1.3 Report Usage .....	1
2 Methodology .....	2
2.1 The Habitats Regulations Appraisal Process.....	2
2.2 Screening.....	3
2.3 Appropriate Assessment .....	3
2.1 In-Combination Effects.....	4
3 Description of the Proposed Development.....	5
3.1 Site Location.....	5
3.2 Proposed Works .....	5
4 Screening For Likely Significant Effect .....	7
4.1 Likely Significant Effect.....	7
4.2 Relevant European Sites.....	7
4.3 Screening Conclusion.....	16
5 Appropriate Assessment: North ORkney SPA .....	17
5.1 Site Description.....	17
5.2 Conservation Objectives.....	17
5.3 Red-throated Diver ( <i>Gavia stellata</i> ), breeding .....	17
5.4 Slavonian Grebe ( <i>Podiceps auritus</i> ), non-breeding.....	19
5.5 Velvet Scoter ( <i>Melanitta fusca</i> ), non-breeding .....	20
5.6 Great Northern Diver ( <i>Gavia immer</i> ), non-breeding .....	22
6 Appropriate Assessment: Orkney Mainland Moors SPA.....	24
6.1 Assessment of Potential Impacts on Conservation Objectives .....	24
7 Appropriate Assessment: Faray and Holm of Faray SAC .....	26
7.1 Assessment of Potential Impacts on Conservation Objectives .....	26
8 Appropriate Assessment: Sanday Special Area of Conservation (SAC).....	27
8.1 Assessment of Potential Impacts on Conservation Objectives .....	27
9 In Combination Effects and Conclusion .....	28
9.1 In Combination Effects.....	28
10 Mitigation.....	29

## Tables

Table 2-1 Key Stages in the HRA Process.....	2
Table 4-1: List of European Designated Sites within proximity to the site along with their Qualifying Features and Screening Assessment for Likely Significant Effects .....	9

# 1 INTRODUCTION

## 1.1 Terms of Reference

Envirocentre Limited has been commissioned by Orkney Island Council Harbour Authority to undertake a Habitats Regulation Appraisal (HRA) to determine whether the proposed expansion of Hatston Pier and Harbour works will have any adverse impact on the integrity of any European designated sites.

## 1.2 Scope of Report

A HRA is required to assess whether the project, alone or in combination with other projects, will have an adverse impact on the integrity of the European designated site. It is the responsibility of the competent authority to conduct the HRA. This document aims to provide the information necessary for them to carry out the HRA assessment by:

- Providing a description of the proposed works;
- Identifying those European designated sites which are connected to and/or could potentially be affected by the proposed works;
- Identifying how the proposed works may impact on the qualifying features of the designated site(s);
- Considering other projects which may have “in combination” effects on the European designated sites; and
- Recommending the designated sites which need to be taken forward for further assessment if impacts on their qualifying features cannot be ruled out.

## 1.3 Report Usage

The information and recommendations contained within this report have been prepared in the specific context stated above and should not be utilised in any other context without prior written permission from EnviroCentre Limited.

If this report is to be submitted for regulatory approval more than 12 months following the report date, it is recommended that it is referred to EnviroCentre Limited for review to ensure that any relevant changes in data, best practice, guidance or legislation in the intervening period are integrated into an updated version of the report.

Whilst the Client has a right to use the information as appropriate, EnviroCentre Limited retains ownership of the copyright and intellectual content of this report. Any distribution of this report should be managed to avoid compromising the validity of the information or legal responsibilities held by both the Client and EnviroCentre Limited (including those of third party copyright). EnviroCentre Limited does not accept liability to any third party for the contents of this report unless written agreement is secured in advance, stating the intended use of the information.

EnviroCentre Limited accepts no liability for use of the report for purposes other than those for which it was originally provided, or where EnviroCentre Limited has confirmed it is appropriate for the new context.

## 2 METHODOLOGY

### 2.1 The Habitats Regulations Appraisal Process

The HRA is a four-stage process. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required. The stages are summarised in Table 2-1. It is stated within the EU guidelines that “where, without any detailed assessment at the screening stage, it can be assumed (because of the size or scale of the project or the characteristics of the national site network) that significant effects are likely, it will be sufficient to move directly to the appropriate assessment (Stage Two) rather than complete the screening assessments explained below.”

**Table 2-1 Key Stages in the HRA Process**

<b>Stage 1</b>	
<b>Screening for Likely Significant Effect (LSE)</b>	<ul style="list-style-type: none"> <li>- Identify international sites in and around the project area.</li> <li>- Examine conservation objectives of the interest feature(s) (where available).</li> <li>- Review plan policies and proposals and consider potential effects on UK sites (magnitude, duration, location, extent).</li> <li>- Examine other plans and programmes that could contribute to ‘in combination’ effects.</li> </ul>
	<ul style="list-style-type: none"> <li>- If no effects likely – report no likely significant effect.</li> <li>- If effects are judged likely or uncertainty exists – the precautionary principle applies, proceed to Stage 2.</li> <li>- If following screening the project is reviewed and includes integral mitigation which will ensure no likely significant effects, then no further Appropriate Assessment needed.</li> </ul>
<b>Stage 2</b>	
<b>Appropriate Assessment (AA)</b>	<ul style="list-style-type: none"> <li>- Complete additional scoping work including the collation of further information on sites as necessary to evaluate impact in light of conservation objectives.</li> <li>- Consider how the project ‘in combination’ with other projects will interact when implemented (the Appropriate Assessment).</li> <li>- Consider how effects on integrity of the site could be avoided by changes to the project and the consideration of alternatives.</li> <li>- Develop mitigation measures (including timescale and mechanisms).</li> <li>- Report outcomes of AA including mitigation measures.</li> </ul>
	<ul style="list-style-type: none"> <li>- If the project will not adversely affect European site integrity proceed with plan.</li> <li>- If effects or uncertainty remain following the consideration of alternatives and development of mitigation proceed to Stage 3.</li> </ul>
<b>Stage 3</b>	
<b>Alternative Solutions</b>	<ul style="list-style-type: none"> <li>- Consider alternative solutions, delete from project or modify.</li> <li>- Consider if priority species/habitats affected - identify ‘imperative reasons of overriding public interest’ (IROPI), economic, social, environmental, human health, public safety (only applicable in highly exceptional circumstances).</li> </ul>
<b>Stage 4</b>	
<b>Imperative Reasons of Overriding Public Interest (IROPI)</b>	<ul style="list-style-type: none"> <li>- Stage 4 is the main derogation process of Article 6(4) which examines whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project that will have adverse effects on the integrity of a UK site to proceed in cases where it has been established that no less damaging alternative solution exists.</li> <li>- The extra protection measures for Annex I priority habitats come into effect when making the IROPI case. Compensatory measures must be proposed and assessed. The Commission must be informed of the compensatory measures.</li> </ul>

	Compensatory measures must be practical, implementable, likely to succeed, proportionate and enforceable, and they must be approved by the Minister.
--	--

## 2.2 Screening

Screening determines whether or not the project is likely to (or potentially could) have significant effects on the national site network. A list of all SACs, cSACs, SPAs and potential SPAs (pSPAs) that are within proximity to the site, or sites designated for mobile species which have the potential to be affected by the proposed development, was compiled and the qualifying interest features noted. Following this, the key environmental conditions (conservation objectives) needed to support site integrity were detailed for each site.

With reference to the NatureScot guidance<sup>1</sup> the screening stage determines whether Appropriate Assessment is required, by:

- Determining whether a project (or plan) is directly connected with or necessary to the conservation management of any European sites;
- Describing the details of the project (or plan) proposals and other projects that may cumulatively affect any European sites;
- Describing the characteristics of relevant European sites; and
- Appraising likely significant effects of the proposed project on relevant European sites.

The guidance gives the following definition of LSE:

*“The test of significance is where a plan or project could undermine the site’s conservation objectives. The assessment of that risk (of ‘significance’) must be made in the light, amongst other things, of the characteristics and specific environmental conditions of the site concerned.”*

*“A likely effect is one that cannot be ruled out on the basis of objective information. The test is a ‘likelihood’ of effects rather than a ‘certainty’ of effects. Although some dictionary definitions define ‘likely’ as ‘probable’ or ‘well might happen’, in the Waddensee case the European Court of Justice ruled that a project should be subject to Appropriate Assessment **“if it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site, either individually or in combination with other plans and projects”**. Therefore, ‘likely’, in this context, should not simply be interpreted as ‘probable’ or ‘more likely than not’, but rather whether a significant effect can objectively be ruled out.”*

## 2.3 Appropriate Assessment

The Appropriate Assessment establishes whether or not a project’s LSE identified during the screening stage will have an adverse effect on the integrity of the affected site with regard to its conservation objectives. Based on the guidance provided by NatureScot guidance the effects of the proposal on the designated sites’ qualifying features will be determined by:

- Gathering information required to assess impacts (from site documents, scientific literature, EU and UK guidance on impact assessment and impact assessments from similar projects);
- Predicting the type and nature of impacts e.g. direct or indirect, short or long term;
- Assessing whether there will be adverse effects on the integrity of the site as defined by the conservation objectives and the status of the site. The precautionary principle must be applied

<sup>1</sup>NatureScot, formerly SNH guidance available at : <https://www.nature.scot/sites/default/files/2019-07/Habitats%20Regulations%20Appraisal%20of%20Plans%20-%20plan-making%20bodies%20in%20Scotland%20-%20Jan%202015.pdf> (Accessed 20/12/2022)



at this stage. If it cannot be demonstrated with supporting evidence that there will be no adverse effects then adverse effects will be assumed; and

- Ascertaining if it is possible to mitigate adverse effects.

## **2.1 In-Combination Effects**

Under Regulation 43(1)(a) of the Habitats Regulations 1995 (as amended) it is necessary to consider whether a plan or project is likely to have a significant effect on a national site network site “either alone or in combination with other plans or projects.”

These should include:

- Approved but as yet uncompleted plans or projects;
- Plans and projects for which an application has been made and which are currently under consideration but not yet approved by the competent authorities; and
- Permitted ongoing activities such as discharge consents, abstraction licences or consecutive/simultaneous maintenance activities.

## **3 DESCRIPTION OF THE PROPOSED DEVELOPMENT**

### **3.1 Site Location**

The proposed development is located on the eastern shore of the Orkney mainland, approximately 1.9km west of Kirkwall. It is located on the Hatston coastline within the Bay of Kirkwall, 1.7km northwest of the Peerie Sea and 1.8km west of the Bay of Weyland.

### **3.2 Proposed Works**

It is proposed to extend the existing outer quay by 300m (with minimum water depth of -10m Chart Datum (CD)) which would also form a 125m inner berth. This would create substantially more quayside which would be available for both current and future operations. In addition to the above, circa 7.5 hectares of additional land extending from the current shoreline outwards would be made available for harbour-related operations through reclamation. The design includes a ship lift, additional link span and fuel facility.

The development is designed to be built in three phases as noted below. These phases should not be considered consecutively but allow for a degree of flexibility which can be adapted to suit the requirements, budget and programme of OICHA.

#### **Phase 1**

- Reclaim the area by depositing appropriate material to form a platform on the south-eastern side of the current pier causeway and thereby create 3Ha of hard-core surfaced marshalling / storage area along with an HGV trailer park for the ferry service which will be covered by a reinforced concrete slab;
- A sheet pile wall is to be installed to allow a retained interface with the current suspended deck; and
- Place rock armour along the northern and eastern edges of the infill area.

#### **Phase 2**

- Extend the current quay to the west by circa 300m with a 25m return and an inner berth to facilitate the proposed linkspan berth and fixed ramp. The extension will comprise a steel sheet pile wall and will initially interface with the alignment of the existing suspended deck on the north-west inner face before forming the new quay extension;
- Reinforced concrete slabs will form the new main deck areas;
- Reclaim the shoreline by depositing appropriate material to form a platform on the southwestern side of the current pier causeway to create an additional 3.71Ha to be used as a multi-use laydown/work area surfaced with hard-core, as well as establish a separate access road to the new quay extension;
- Place rock armour along the western edge of the infill area; and
- Dredge the approaches to the quay, after quay works complete.

#### **Phase 3**

- Reclaim the shoreline to the south-west of Phase 2 to form a platform on the southwestern side of the current pier causeway to be used as a multi-use laydown/work area as well as create a ship lift;

- The ship lift will extend from the linkspan fixed ramp installed in Phase 2 and will comprise piles and reinforced concrete pads designed for the boatlift wheel-loads;
- The rest of the area will be infilled to provide extra yard / storage; and
- Place rock armour along the western edge of the infill area.

## 4 SCREENING FOR LIKELY SIGNIFICANT EFFECT

### 4.1 Likely Significant Effect

For significant effects to arise, there must be a risk enabled by having a 'source' (e.g. construction works at a proposed development site), a 'receptor' (e.g. a European site or its qualifying interests), and a pathway between the source and the receptor (e.g. mobile marine species travelling between the proposed development site and the designated site). The identification of a pathway does not automatically mean that significant effects will arise. The likelihood for significant effects will depend upon the characteristics of the source (e.g. duration of construction works), the characteristics of the pathway (e.g. what species and the number of individuals travelling between the two sites) and the characteristics of the receptor (e.g. the sensitivities of the European site and its qualifying interests).

NatureScot (2015) guidance states that sites with mobile species should be considered within the screening process where there is a significant ecological link between the designated site and the proposed development site. It also states that for developments which could increase recreational pressures on designated sites, all sites within reasonable travel distance of the development should be considered for screening. It is also necessary to consider sites which are part of the same coastal ecosystem, where the proposed development may affect coastal processes.

### 4.2 Relevant European Sites

The following sites have been scoped in for assessment due to them being within proximity to the site and/ or considered connected to the site via dispersal of designated mobile species:

- North Orkney SPA
- Orkney Mainland Moors SPA
- Scapa Flow SPA
- Loch of Stenness SAC
- Faray and Holm of Faray SAC
- Sanday SAC

The sites are listed in Table 4-1, along with their screening assessment.

#### 4.2.1 In-Combination Effects

Orkney Islands Council (OIC) identified the following projects which should be considered in-combination with the proposed development within the EIA scoping response<sup>2</sup>:

- Proposal to demolish household waste and recycling centre and former abattoir to create an integrated waste facility (Planning application 21/015/SCR).
- Erection of 6 wind turbines, a meteorological mast and substation with associated access tracks and infrastructure (Planning application 20/037/TPPMAJ)
- Extension of Kirkwall pier to provide additional quay infrastructure, reclaim land to create a mixed use development area and reconfigure the and expand marina (20/240/SCR)

---

<sup>2</sup> Planning reference 21/159/SCO

The works in relation to the Scapa Deep Water Quay, also being taken forward as part of the Orkney Harbours Masterplan will also be considered.

**Table 4-1: List of European Designated Sites within proximity to the site along with their Qualifying Features and Screening Assessment for Likely Significant Effects**

Site Name (distance and orientation from works)	Conservation Objectives	Qualifying Features	Likely Significant Effect (LSE)	Screening Assessment
<b>North Orkney SPA</b> (On boundary)	To ensure that the qualifying features of the North Orkney SPA are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status.	Great northern diver ( <i>Gavia immer</i> ),	Pathway for LSE identified.  There is potential for the species to be subject to disturbance during the construction phase of the proposed development via temporary noise from piling, blasting and dredging and vessel and onshore vehicle movements. Additional vessel movements during the operational phase (an increase of up to 460 movements per year) could result in displacement from the habitat and a reduction in overall foraging habitat. This impact could increase in magnitude and/or duration when considered in-combination with other local development developments.	Scoped in
		Slavonian grebe ( <i>Podiceps auritus</i> ),  Velvet scoter ( <i>Melanitta fusca</i> ), non-breeding		
		Red-throated diver ( <i>Gavia stellata</i> ), breeding	Pathway for LSE identified.  It is possible that birds breeding within the SPA could utilise the water within the proposed harbour area for foraging.  During the construction phase of the proposed development foraging Red-throated Divers could be impacted temporarily by noise from piling, blasting and dredging and vessel and onshore vehicle movements. Additional vessel movements during the operational phase (an increase of up to 460 movements per year) could result in displacement from the habitat and a reduction in overall foraging habitat result in displacement from the habitat and a reduction in overall foraging habitat. This impact could increase in magnitude and/or duration when considered in-combination with other local development developments.	Scoped in

Site Name (distance and orientation from works)	Conservation Objectives	Qualifying Features	Likely Significant Effect (LSE)	Screening Assessment
<b>Orkney Mainland Moors SPA</b> (4km south west)	To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained.	Hen harrier ( <i>Circus cyaneus</i> ), breeding	<p>Pathway for LSE identified.</p> <p>Pendlebury <i>et al.</i> (2011) state that the maximum foraging range from nests is 2km for females and males can travel up to 8.5km from a nest site. Hen harriers can utilise coastal areas to predate waders, therefore it is possible that birds breeding within the SPA could utilise the water within the proposed harbour area for foraging.</p> <p>During the construction phase of the proposed development foraging Hen Harriers could be impacted temporarily by noise from piling and blasting. This could result in displacement from the habitat and a reduction in overall foraging habitat. However as Hen harriers favour heather moorland and stream habitat when nesting, and there are plenty of accessible coastal areas outside the working area available, it is unlikely that works associated with the pier will have a significant effect on the foraging success of breeding Hen Harrier. Therefore, no LSE predicted.</p>	Scoped out
		Hen harrier non-breeding	<p>Pathway for LSE identified.</p> <p>It possible that birds within the SPA could utilise the water within the proposed harbour area for foraging.</p> <p>During the construction phase of the proposed development foraging Hen Harriers could be impacted temporarily by noise from piling and blasting. This could result in displacement from the habitat and a reduction in overall foraging habitat. However, as winter foraging Hen Harriers favour open rank habitats for foraging, and there are plenty of accessible coastal areas outside the working area available, it is unlikely that works associated with the pier will have a significant effect on the foraging success of foraging Hen Harrier in the locale. Therefore, no LSE predicted.</p>	

Site Name (distance and orientation from works)	Conservation Objectives	Qualifying Features	Likely Significant Effect (LSE)	Screening Assessment
		Red-throated diver, breeding	<p>Pathway for LSE identified.</p> <p>Pendlebury <i>et al.</i> (2011) state that the maximum foraging range from nests during the breeding season is generally 8km for Red-throated Diver but can be up to 13.5km in the Western Isles. It is possible that birds breeding within the SPA could utilise the water within the proposed harbour area for foraging.</p> <p>During the construction phase of the proposed development foraging Red-throated Divers could be impacted temporarily by noise from piling, dredging and vessel and onshore vehicle movements. This could result in displacement from the habitat and a reduction in overall foraging habitat. However, given the availability of accessible costal habitats in proximity to the SPA, it is considered the likelihood of disturbance to foraging Red- throated Diver breeding within the SPA is negligible.</p>	Scoped in
		Short-eared owl ( <i>Asio flammeus</i> ), breeding	<p>No pathway identified.</p> <p>No potential impacts to breeding Short-eared owl or their habitat within the SPA are predicted due to the distance between the SPA and the proposed development and the species not being associated with coastal habitats.</p> <p>No LSE is predicted.</p>	Scoped out
Scapa Flow SPA (4km south)	To ensure that the qualifying features of the Scapa Flow SPA are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status.	Black-throated diver ( <i>Gavia arctica</i> ), non-breeding	<p>No pathway identified.</p> <p>As there is no works planned across land and given the hydrological distance from the site and Scapa Flow SPA, it is considered unlikely the species will be subject to direct impacts from development activities or indirectly via accidental pollution events.</p> <p>No LSE is predicted.</p>	Scoped out
		Eider ( <i>Somateria mollissima</i> ), non-breeding	<p>No pathway identified.</p> <p>As there is no works planned across land and given the hydrological distance from the site and Scapa Flow SPA, it is considered unlikely the species will be subject to direct impacts from development activities or indirectly via accidental pollution events.</p> <p>No LSE is predicted.</p>	Scoped out



Site Name (distance and orientation from works)	Conservation Objectives	Qualifying Features	Likely Significant Effect (LSE)	Screening Assessment
		Great northern diver, non-breeding	<p>No pathway identified.</p> <p>As there is no works planned across land and given the hydrological distance from the site and Scapa Flow SPA, it is considered unlikely the species will be subject to direct impacts from development activities or indirectly via accidental pollution events.</p> <p>No LSE is predicted.</p>	Scoped out
		Long-tailed duck ( <i>Clangula hyemalis</i> ), non-breeding	<p>No pathway identified.</p> <p>As there is no works planned across land and given the hydrological distance from the site and Scapa Flow SPA, it is considered unlikely the species will be subject to direct impacts from development activities or indirectly via accidental pollution events.</p> <p>No LSE is predicted.</p>	Scoped out
		Red-breasted merganser ( <i>Mergus serrator</i> ), non-breeding	<p>No pathway identified.</p> <p>As there is no works planned across land and given the hydrological distance from the site and Scapa Flow SPA, it is considered unlikely the species will be subject to direct impacts from development activities or indirectly via accidental pollution events.</p> <p>No LSE is predicted.</p>	Scoped out
		Red-throated diver, breeding	<p>No pathway identified.</p> <p>As there is no works planned across land and given the hydrological distance from the site and Scapa Flow SPA, it is considered unlikely the species will be subject to direct impacts from development activities or indirectly via accidental pollution events.</p> <p>No LSE is predicted.</p>	Scoped out

Site Name (distance and orientation from works)	Conservation Objectives	Qualifying Features	Likely Significant Effect (LSE)	Screening Assessment
		Shag ( <i>Phalacrocorax aristotelis</i> ), non-breeding	No pathway identified.  As there is no works planned across land and given the hydrological distance from the site and Scapa Flow SPA, it is considered unlikely the species will be subject to direct impacts from development activities or indirectly via accidental pollution events.  No LSE is predicted.	Scoped out
		Slavonian grebe ( <i>Podiceps auritus</i> ), non-breeding	No pathway identified.  As there is no works planned across land and given the hydrological distance from the site and Scapa Flow SPA, it is considered unlikely the species will be subject to direct impacts from development activities or indirectly via accidental pollution events.  No LSE is predicted.	Scoped out
<b>Loch of Stenness SAC</b> (13km west)	To maintain the condition of the SAC feature	Lagoons	No pathway for LSE identified  The distance between the feature and the works is considered to be too great.	Scoped out

Site Name (distance and orientation from works)	Conservation Objectives	Qualifying Features	Likely Significant Effect (LSE)	Screening Assessment
<b>Faray and Holm of Faray SAC</b> (23km north)	To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and To ensure for the qualifying species that the following are maintained in the long term.	Grey seal ( <i>Halichoerus grypus</i> )	<p>Pathway for LSE identified.</p> <p>There is potential for the species to be subject to disturbance as a result of noise, vibration, human presence and light pollution during construction activities.</p> <p>There is potential for the species to be indirectly impacted by accidental pollution incidents or increased sedimentation and turbidity during works impacting water quality and therefore food availability.</p> <p>Grey seals could be subject to death or injury through underwater noise or collision with vessels during works.</p>	Scoped in
<b>Sanday SAC</b> (30km North east)	To avoid deterioration of the qualifying habitats thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and To ensure for the qualifying habitats are maintained in the long term.	Harbour seal ( <i>Phoca vitulina</i> )	<p>Pathway for LSE identified.</p> <p>There is potential for the species to be subject to disturbance as a result of noise, vibration, human presence and light pollution during construction activities.</p> <p>There is potential for the species to be indirectly impacted by accidental pollution incidents or increased sedimentation and turbidity during works impacting water quality and therefore food availability.</p> <p>Harbour seals could be subject to death or injury through underwater noise or collision with vessels during works.</p>	Scoped in
		Intertidal mudflats and sandflats	No pathway for LSE identified. There will be no impact on habitats from the Proposed Development.	

<b>Site Name</b> (distance and orientation from works)	<b>Conservation Objectives</b>	<b>Qualifying Features</b>	<b>Likely Significant Effect (LSE)</b>	<b>Screening Assessment</b>
		Reefs	No pathway for LSE identified. There will be no impact on habitats from the Proposed Development.	
		Subtidal sandbanks	No pathway for LSE identified. There will be no impact on habitats from the Proposed Development.	

### **4.3 Screening Conclusion**

The outcome of screening for appropriate assessment is to reach one of the following determinations:

- a) A stage 2 AA of the proposed development is required if it is concluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.
- b) A stage two AA of the proposed development is not required if it can be concluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will not have a significant effect on a European site.

Following an examination, analysis and evaluation of the relevant information including, in particular, the nature of the proposed development and the likelihood of significant effects on scoped in designated sites

- North Orkney SPA
- Orkney Mainland Moors SPA (Red-throated Diver)
- Faray and Holm of Faray SAC
- Sanday SAC (Harbour Seal)

## 5 APPROPRIATE ASSESSMENT: NORTH ORKNEY SPA

### 5.1 Site Description

The North Orkney Special Protection Area (SPA) lies to the north of Mainland in the Orkney Islands, extending from Deerness in the east to Eynhallow in the west. The site includes Wide Firth and several large sheltered bays, such as Deer Sound, Inganess Bay and Bay of Firth. North Orkney SPA also encompasses Shapinsay Sound and tidal channels among the islands of Gairsay, Rousay, Egilsay and Wyre, including Rousay Sound and Eynhallow Sound. Water depths are generally less than 20m. Sediments are primarily mixtures of mud, sand and gravel but become coarser in areas where tidal currents are stronger and there are extensive maerl beds in the sounds around Rousay. The varied marine habitats support a rich and varied invertebrate fauna, including polychaete worms, crustaceans and bivalve molluscs, many of which are important prey species for marine birds. These rich sheltered waters support large numbers of waterfowl, particularly in the winter months when frequent storms affect the surrounding North Sea and eastern Atlantic.

### 5.2 Conservation Objectives

1. To ensure that the qualifying features of the North Orkney SPA are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status.

2. To ensure that the integrity of the North Orkney SPA is maintained in the context of environmental changes by meeting objectives 2a, 2b and 2c for each qualifying feature:

2a. The populations of qualifying features are viable components of the site.

2b. The distribution of the qualifying features is maintained throughout the site by avoiding significant disturbance of the species.

2c. The supporting habitats and processes relevant to qualifying features and their prey/food resources are maintained.

### 5.3 Red-throated Diver (*Gavia stellata*), breeding

Red-throated Diver breed on fresh water lochs which can range from small upland lochans in moorland to large lowland lochs. Nests are usually close to the water's edge or on islands within the water body. Adults continue to forage at sea during the breeding season and bring fish (predominantly sand eel) back for the chicks. Foraging habitat at sea during the breeding season typically includes shallow and sheltered bays, sea lochs and sounds (Black *et al.* 2015). The red-throated divers associated with the SPA, feed almost exclusively at sea close to their freshwater breeding sites in the moorlands of Rousay and Orkney Mainland.

During winter the birds are almost exclusively maritime, favouring coastal waters with some shelter and soft substrate. Breeding sites are predominantly in the north and west of Scotland, the east coast of Scotland is favoured in the winter months.

The total estimated UK population is 17,000 individuals (Stroud *et al.* 2016) with an estimated 935 – 1500 breeding pairs in Scotland and approximately 2270 over wintering birds (Forrester *et al.* 2012).

Stroud *et al.* (2016) state that the short term population trend, 1999/2000 – 2010/11, increased by 20%. Up to 47 pairs in 2006 (3.7% of the Great Britain population) were recorded in the SPA.

Red-throated Diver are listed under Schedule 1 of the Wildlife and Countryside Act, which recognises their rarity as a breeding species in the UK and affords them extra protection during the nesting period. They are also an Annex I migratory species under the EU Birds Directive (2009/147/EC).

### 5.3.1 Assessment of Potential Impacts on Conservation Objectives

Breeding Red-throated Diver will use the Bay of Kirkwall as a feeding resource during the breeding season, bringing food back to their nesting lochan.

Red-throated Diver is considered to be highly sensitive to disturbance, particularly from vessel movements. Taking evasive action, particularly flight responses, increases energy budgets of birds which could result in increased mortality rates should they be regularly disturbed.

At Hatston, all material (rock etc) required for the development will be transported via the road network, thus there will not be a significant increase in marine vessel movements during construction.

Piling works and blasting could have the potential to cause disturbance to this species. Blasting is planned prior to pile installation and estimated to be necessary at 1 m intervals along the line of pile installation at the new section of the pier, which is 500m long (i.e. 500 boreholes for blasting). 4-6 holes are planned per day, with blasts staggered in time to avoid simultaneous blast waves. Little is known about the effects of underwater noise on birds. However, it is anticipated that the disturbance distance for birds from these activities would be between 50-150m.

Mitigation, such as a soft start approach and an ECoW monitoring for the presence of this species within 150m of the Proposed Development prior to piling and blasting works (with works to be undertaken once birds are a sufficient distance away), would limit any potential impact.

There is proposed dredging works within the footprint of the Proposed Development. The dredge volume is estimated to be 650m<sup>3</sup>, based on the bathymetry surveys and proposed channel design. As outlined in section 4.5.3, in Volume 1 of the EIAR, the marine deposits within the dredge area comprise of loose to medium dense sands and gravels occasionally with cobbles interspersed with layers of sandy gravelly clay. It is understood that dredged material is to be used as fill within the reclaimed areas.

Given the relatively coarse nature of the dredge budget, small proposed dredge volume, and the weak tidal currents within the vicinity of the proposed dredge pockets, it is considered that any plumes generated as a result of the dredging works and their disposal will be very localised and short term in duration. Overall it is considered that prior to mitigation the magnitude of impact of sediment discharge and dispersion from dredging works will be low within the immediate dredge area, and negligible out with this area, thus maintaining the supporting habitats for Red-throated Diver.

There is the risk of pollution events (oil spills etc) during both the construction and operational phases of the Proposed Development. Adherence to strict Pollution Prevention controls and the use of silt booms during land reclamation works will mitigate against pollution spills which could affect the qualifying interest of the SPA and their prey sources. Therefore, the supporting habitats for Red-throated Diver will be maintained.

During the operational phase, there will be a predicted increase in vessel movements of up to 460 additional vessel movements each year, with the majority (ie increase in cruise liners) taking place outwith the wintering period when the qualifying interests of the SPA are present. This increase to the

existing baseline (between 6.7% and 25% increase), and by using established shipping lanes and adhering to accepted speed limits, is not likely to cause a significant disturbance impact. None of these potential disturbance effects will result in barriers to movement, or reduce access to, preferred foraging and roosting habitats, resulting in a significant energy expenditure and possible reduction in body condition required for survival and subsequent migration.

## **5.4 Slavonian Grebe (*Podiceps auritus*), non-breeding**

(a mean peak annual non-breeding population of 120 birds (10.9% of the Great Britain population) for the years 2007/08-2008/9).

Slavonian Grebes are listed under Schedule 1 of the Wildlife and Countryside Act, which recognises their rarity as a breeding species in the UK and affords them extra protection during the nesting period. They are also an Annex I migratory species under the EU Birds Directive (2009/147/EC).

### **5.4.1 Assessment of Potential Impacts on Conservation Objectives**

During the Vantage Point Surveys at Hatston, a peak count of 7 birds was recorded which represents 6% of the non-breeding population of the North Orkney SPA. All birds were exclusively recorded from sectors 7,8 and 9 close to the mouth of the Bay of Kirkwall and beyond the fish cages within the bay.

No birds were recorded from the southern pier.

Slavonian Grebe was recorded intermittently during the HiDef surveys of 2021/22, with birds only recorded in November 2021 (one bird) and January 2022 (five birds). Records were from across the Bay of Kirkwall, including the inner bay.

Although the Proposed Development footprint provides suitable foraging habitat for Slavonian Grebes, the wider SPA site has the capacity to accommodate these birds..

Slavonian Grebe is considered to be highly sensitive to disturbance, particularly from vessel movements. Taking evasive action, particularly flight responses, increases energy budgets of birds which could result in increased mortality rates should they be regularly disturbed. During the bird/boat interaction observations, there was one instance of a small creel boat (at about 200-300m distance) causing a single Slavonian Grebe to take evasive action (dive and swim away).

At Hatston, all material (rock etc) required for the development will be transported via the road network, thus there will not be a significant increase in marine vessel movements during construction.

Piling works and blasting could have the potential to cause disturbance to this species. Blasting is planned prior to pile installation and estimated to be necessary at 1 m intervals along the line of pile installation at the new section of the pier, which is 500m long (i.e. 500 boreholes for blasting). 4-6 holes are planned per day, with blasts staggered in time to avoid simultaneous blast waves. Little is known about the effects of underwater noise on birds. However, It is anticipated that the disturbance distance for birds from these activities would be between 50-150m.

The survey findings show that the majority of Slavonian Grebe sightings were in the mouth of the Bay of Kirkwall, approximately 1km-2km from Hatston pier. At these distances, piling and blasting noise is unlikely to cause a significant impact to this species. Further mitigation, such as a soft start approach and an ECoW monitoring for the presence of this species within 150m of the Proposed Development



prior to piling and blasting works (with works to be undertaken once birds are a sufficient distance away), would further limit any potential impact.

There is proposed dredging works within the footprint of the Proposed Development. The dredge volume is estimated to be 650m<sup>3</sup>, based on the bathymetry surveys and proposed channel design. As outlined in section 4.5.3, in Volume 1 of the EIAR, the marine deposits within the dredge area comprise of loose to medium dense sands and gravels occasionally with cobbles interspersed with layers of sandy gravelly clay. It is understood that dredged material is to be used as fill within the reclaimed areas.

Given the relatively coarse nature of the dredge budget, small proposed dredge volume, and the weak tidal currents within the vicinity of the proposed dredge pockets, it is considered that any plumes generated as a result of the dredging works and their disposal will be very localised and short term in duration. Overall it is considered that prior to mitigation the magnitude of impact of sediment discharge and dispersion from dredging works will be low within the immediate dredge area, and negligible out with this area, thus maintaining the supporting habitats for Slavonian Grebe.

There is the risk of pollution events (oil spills etc) during both the construction and operational phases of the Proposed Development. Adherence to strict Pollution Prevention controls and the use of silt booms during land reclamation works will mitigate against pollution spills which could affect the qualifying interest of the SPA and their prey sources. Therefore, the supporting habitats for Slavonian Grebe will be maintained.

During the operational phase, there will be a predicted increase in vessel movements of up to 460 additional vessel movements each year, with the majority (ie increase in cruise liners) taking place outwith the wintering period when the qualifying interests of the SPA are present. This increase to the existing baseline (between 6.7% and 25% increase), and by using established shipping lanes and adhering to accepted speed limits, is not likely to cause a significant disturbance impact. None of these potential disturbance effects will result in barriers to movement, or reduce access to, preferred foraging and roosting habitats, resulting in a significant energy expenditure and possible reduction in body condition required for survival and subsequent migration.

## **5.5 Velvet Scoter (*Melanitta fusca*), non-breeding**

(a mean peak annual non-breeding population of 147 birds (5.9% of the Great Britain population) for the years of 2006/07 to 2008/09).

Velvet Scoter are listed under Schedule 1 of the Wildlife and Countryside Act, which recognises their rarity as a breeding species in the UK and affords them extra protection during the nesting period.

### **5.5.1 Assessment of Potential Impacts on Conservation Objectives**

During the Vantage Point Surveys at Hatston, a peak count of 37 birds was recorded which represents 25% of the non-breeding population in North Orkney SPA.

This species was exclusively recorded off the north pier, in the mouth of the Bay of Kirkwall. No Velvet Scoter were recorded in inshore waters.

No Velvet Scoter were recorded within the Bay of Kirkwall during the HiDef surveys over winter 2021/22.

Velvet Scoter is considered to be highly sensitive to disturbance, particularly from vessel movements. Taking evasive action, particularly flight responses, increases energy budgets of birds which could result in increased mortality rates should they be regularly disturbed. During the bird/boat observations, there was a total of ten instances of interaction. Most resulted in a slow swim away, although there were two instances of flight response to a work boat and a creel boat.

At Hatston, all material (rock etc) required for the development will be transported via the road network, thus there will not be a significant increase in marine vessel movements during construction.

Piling works and blasting could have the potential to cause disturbance to this species. Blasting is planned prior to pile installation and estimated to be necessary at 1 m intervals along the line of pile installation at the new section of the pier, which is 500m long (i.e. 500 boreholes for blasting). 4-6 holes are planned per day, with blasts staggered in time to avoid simultaneous blast waves. Little is known about the effects of underwater noise on birds. However, it is anticipated that the disturbance distance for birds from these activities would be between 50-150m.

The survey findings show that all Velvet Scoter sightings were in the mouth of the Bay of Kirkwall, approximately 1km-2km from Hatston pier. At these distances, piling and blasting noise is unlikely to cause a significant impact to this species. Further mitigation, such as a soft start approach and an ECoW monitoring for the presence of this species within 150m of the Proposed Development prior to piling and blasting works (with works to be undertaken once birds are a sufficient distance away), would further limit any potential impact.

There is proposed dredging works within the footprint of the Proposed Development. The dredge volume is estimated to be 650m<sup>3</sup>, based on the bathymetry surveys and proposed channel design. As outlined in section 4.5.3, in Volume 1 of the EIAR, the marine deposits within the dredge area comprise of loose to medium dense sands and gravels occasionally with cobbles interspersed with layers of sandy gravelly clay. It is understood that dredged material is to be used as fill within the reclaimed areas.

Given the relatively coarse nature of the dredge budget, small proposed dredge volume, and the weak tidal currents within the vicinity of the proposed dredge pockets, it is considered that any plumes generated as a result of the dredging works and their disposal will be very localised and short term in duration. Overall it is considered that prior to mitigation the magnitude of impact of sediment discharge and dispersion from dredging works will be low within the immediate dredge area, and negligible out with this area, thus maintaining the supporting habitats for Velvet Scoter.

There is the risk of pollution events (oil spills etc) during both the construction and operational phases of the Proposed Development. Adherence to strict Pollution Prevention controls and the use of silt booms during land reclamation works will mitigate against pollution spills which could affect the qualifying interest of the SPA and their prey sources. Therefore, the supporting habitats for Velvet Scoter will be maintained.

During the operational phase, there will be a predicted increase in vessel movements of up to 460 additional vessel movements each year, with the majority (ie increase in cruise liners) taking place outwith the wintering period when the qualifying interests of the SPA are present. This increase to the existing baseline (between 6.7% and 25% increase), and by using established shipping lanes and adhering to accepted speed limits, is not likely to cause a significant disturbance impact. None of these potential disturbance effects will result in barriers to movement, or reduce access to, preferred foraging and roosting habitats, resulting in a significant energy expenditure and possible reduction in body condition required for survival and subsequent migration.

## 5.6 Great Northern Diver (*Gavia immer*), non-breeding

(a mean peak annual non-breeding population of 308 birds (12.3% of the Great Britain population) for the years 2006/07 to 2008/09)

Great Northern Diver are listed under Schedule 1 of the Wildlife and Countryside Act, which recognises their rarity as a breeding species in the UK and affords them extra protection during the nesting period. They are also an Annex I migratory species under the EU Birds Directive (2009/147/EC).

### 5.6.1 Assessment of Potential Impacts on Conservation Objectives

During the Vantage Point Surveys at Hatston, A peak count of 31 birds were recorded, which represents 10% of the non-breeding population in North Orkney SPA

From the North Pier vantage point, Great Northern Diver was recorded during all months, peaking with 31 on 16th December 2022. The majority of birds were recorded in the mouth of the Bay of Kirkwall. However, a peak count of 9 was also recorded close to the fish cages.

From the southern pier vantage point, small numbers were recorded, with a peak of 8 birds on 16th December 2022. Birds were predominately recorded out towards Iceland Skerry.

Great Northern Diver was also recorded in all months during the HiDef survey over winter 2021/22., with a peak count of 18 birds in January 2022. As with winter 2022/23, the majority of birds were recorded at the mouth of the Bay of Kirkwall.

Great Northern Diver is considered to be highly sensitive to disturbance, particularly from vessel movements. Taking evasive action, particularly flight responses, increases energy budgets of birds which could result in increased mortality rates should they be regularly disturbed. During the bird/boat interaction observations, there was a total of 23 interactions. The majority elicited no response, although eight resulted in a dive or swim away. There was one instance of the Shapinsay ferry potentially causing a flight response.

At Hatston, all material (rock etc) required for the development will be transported via the road network, thus there will not be a significant increase in marine vessel movements during construction.

Piling works and blasting could have the potential to cause disturbance to this species. Blasting is planned prior to pile installation and estimated to be necessary at 1 m intervals along the line of pile installation at the new section of the pier, which is 500m long (i.e. 500 boreholes for blasting). 4-6 holes are planned per day, with blasts staggered in time to avoid simultaneous blast waves. Little is known about the effects of underwater noise on birds. However, It is anticipated that the disturbance distance for birds from these activities would be between 50-150m.

The survey findings show that the majority of Great Northern Diver sightings were in the mouth of the Bay of Kirkwall, approximately 1km-2km from Hatston pier. At these distances, piling and blasting noise is unlikely to cause a significant impact to this species. Further mitigation, such as a soft start approach and an ECoW monitoring for the presence of this species within 150m of the Proposed Development prior to piling and blasting works (with works to be undertaken once birds are a sufficient distance away), would further limit any potential impact.

There is proposed dredging works within the footprint of the Proposed Development. The dredge volume is estimated to be 650m<sup>3</sup>, based on the bathymetry surveys and proposed channel design. As outlined in section 4.5.3, in Volume 1 of the EIAR, the marine deposits within the dredge area comprise of loose to medium dense sands and gravels occasionally with cobbles interspersed with layers of sandy gravelly clay. It is understood that dredged material is to be used as fill within the reclaimed areas.

Given the relatively coarse nature of the dredge budget, small proposed dredge volume, and the weak tidal currents within the vicinity of the proposed dredge pockets, it is considered that any plumes generated as a result of the dredging works and their disposal will be very localised and short term in duration. Overall it is considered that prior to mitigation the magnitude of impact of sediment discharge and dispersion from dredging works will be low within the immediate dredge area, and negligible out with this area, thus maintaining the supporting habitats for Great Northern Diver.

There is the risk of pollution events (oil spills etc) during both the construction and operational phases of the Proposed Development. Adherence to strict Pollution Prevention controls and the use of silt booms during land reclamation works will mitigate against pollution spills which could affect the qualifying interest of the SPA and their prey sources. Therefore, the supporting habitats for Great Northern Diver will be maintained.

During the operational phase, there will be a predicted increase in vessel movements of up to 460 additional vessel movements each year, with the majority (ie increase in cruise liners) taking place outwith the wintering period when the qualifying interests of the SPA are present. This increase to the existing baseline (between 6.7% and 25% increase), and by using established shipping lanes and adhering to accepted speed limits, is not likely to cause a significant disturbance impact. None of these potential disturbance effects will result in barriers to movement, or reduce access to, preferred foraging and roosting habitats, resulting in a significant energy expenditure and possible reduction in body condition required for survival and subsequent migration.

## 6 APPROPRIATE ASSESSMENT: ORKNEY MAINLAND MOORS SPA

Orkney Mainland Moors SPA comprises four areas of moorland on Mainland; at its closest point, it lies within 5km of Hatston Pier. The predominant habitats include extensive areas of blanket bog, heaths and mires, with these upland areas supporting 5.9% of the UK's breeding and 2% of the UK's overwintering Hen Harrier (*Circus cyaneus*) population, 2% of the UK's breeding Short-eared Owl (*Asio flammeus*) population. In both cases one of very few sites to support such dense and significant numbers. The area also supports 2% of the UK's breeding Red-throated Diver (*Gavia stellata*) population. This site's boundaries also correspond to Keelylang Hill and Swartaback Burn Site of Special Scientific Interest (SSSI) which is designated for breeding Hen Harrier.

### 6.1 Assessment of Potential Impacts on Conservation Objectives

Red-throated Diver is the only qualifying species of this SPA that could potentially be impacted by the works at Hatston. Breeding Red-throated Diver will use the Bay of Kirkwall as a feeding resource during the breeding season, bringing food back to their nesting lochan.

Red-throated Diver is considered to be highly sensitive to disturbance, particularly from vessel movements. Taking evasive action, particularly flight responses, increases energy budgets of birds which could result in increased mortality rates should they be regularly disturbed.

At Hatston, all material (rock etc) required for the development will be transported via the road network, thus there will not be a significant increase in marine vessel movements during construction.

Piling works and blasting could have the potential to cause disturbance to this species. Blasting is planned prior to pile installation and estimated to be necessary at 1 m intervals along the line of pile installation at the new section of the pier, which is 500m long (i.e. 500 boreholes for blasting). 4-6 holes are planned per day, with blasts staggered in time to avoid simultaneous blast waves. Little is known about the effects of underwater noise on birds. However, it is anticipated that the disturbance distance for birds from these activities would be between 50-150m.

Mitigation, such as a soft start approach and an ECoW monitoring for the presence of this species within 150m of the Proposed Development prior to piling and blasting works (with works to be undertaken once birds are a sufficient distance away), would limit any potential impact.

There is proposed dredging works within the footprint of the Proposed Development. The dredge volume is estimated to be 650m<sup>3</sup>, based on the bathymetry surveys and proposed channel design. As outlined in section 4.5.3, in Volume 1 of the EIAR, the marine deposits within the dredge area comprise of loose to medium dense sands and gravels occasionally with cobbles interspersed with layers of sandy gravelly clay. It is understood that dredged material is to be used as fill within the reclaimed areas.

Given the relatively coarse nature of the dredge budget, small proposed dredge volume, and the weak tidal currents within the vicinity of the proposed dredge pockets, it is considered that any plumes generated as a result of the dredging works and their disposal will be very localised and short term in duration. Overall it is considered that prior to mitigation the magnitude of impact of sediment discharge and dispersion from dredging works will be low within the immediate dredge area, and negligible out with this area, thus maintaining the supporting habitats for Red-throated Diver.

There is the risk of pollution events (oil spills etc) during both the construction and operational phases of the Proposed Development. Adherence to strict Pollution Prevention controls and the use of silt booms during land reclamation works will mitigate against pollution spills which could affect the qualifying interest of the SPA and their prey sources. Therefore, the supporting habitats for Red-throated Diver will be maintained.

During the operational phase, there will be a predicted increase in vessel movements of up to 460 additional vessel movements each year, with the majority (ie increase in cruise liners) taking place outwith the wintering period when the qualifying interests of the SPA are present. This increase to the existing baseline (between 6.7% and 25% increase), and by using established shipping lanes and adhering to accepted speed limits, is not likely to cause a significant disturbance impact. None of these potential disturbance effects will result in barriers to movement, or reduce access to, preferred foraging and roosting habitats, resulting in a significant energy expenditure and possible reduction in body condition required for survival and subsequent migration.

## **7 APPROPRIATE ASSESSMENT: FARAY AND HOLM OF FARAY SAC**

Faray and Holm of Faray SAC is located approximately 23km north of Hatston, at its closest point, and is designated for its breeding colony of Grey Seal (*Halichoerus grypus*), which produces 9% of UK Grey Seal pups. There are also numerous designated seal haul-outs on Orkney, the closest of which to Hatston are Damsay and Holm of Grimbister on Mainland Orkney approximately 4km around the coast to the west of Hatston, and Helliars Holm North and Elwick, approximately 5.5km north-east of Hatston on Shapinsay.

### **7.1 Assessment of Potential Impacts on Conservation Objectives**

The conservation objectives are to avoid deterioration of the habitats of qualifying species (Grey seal) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained, and the site makes an appropriate contribution to achieving favourable conservation status for the qualifying interest.

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site;
- Distribution of the species within site;
- Distribution and extent of habitats supporting the species;
- Structure, function and supporting processes of habitats supporting the species; and
- No significant disturbance of the species

The distance of the breeding colony (23km) is at a distance whereby the Proposed Development works would not have an impact. Similarly, the nearest haul out site, Damsay and Holm of Grimbister at 4km, is also at a distance whereby the Proposed Development works would not have an impact.

Individual seals which form part of the SAC population could potentially feed and forage within the bay of Kirkwall. They could be at risk of temporary disturbance from underwater noise associated with the blasting. The noise is not predicted to cause long term negative effects on the SAC qualifying interest due to its short duration and adherence to a detailed Marine Mammal Mitigation Plan (MMMP).

Given the mitigation which will be employed and the temporary nature of the works producing underwater noise, the number of individuals affected will be negligible and any disturbance which may occur will not fall under the JNCC (2008) definition of significant disturbance. Therefore, it is considered that the MMMP will be sufficient to prevent short term negative effects.

## **8 APPROPRIATE ASSESSMENT: SANDAY SPECIAL AREA OF CONSERVATION (SAC)**

Sanday is a large, low-lying island situated in the north-east of the Orkney archipelago. The island has a complex coastline characterised by extensive sandy beaches, sheltered inlets and exposed rocky headlands. The coastal waters of Sanday hold the largest colony of common seals at any relatively discrete site in Scotland. Around 1,450 adults haul out on the intertidal reefs to pup, moult and rest. This represents around 17% of the Orkney, 5% of the UK and 2% of the EU populations of the species. During the 1998 breeding survey over 550 pups were observed at the site, accounting for 34% of newborn pups in Orkney. Large breeding colonies are important in maintaining overall population size and are significant as sources of emigration to smaller or newly established groups. The SAC is located 30km north east from Hatston.

### **8.1 Assessment of Potential Impacts on Conservation Objectives**

The conservation objectives are to avoid deterioration of the habitats of qualifying species (common seal ) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained, and the site makes an appropriate contribution to achieving favourable conservation status for the qualifying interest.

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site;
- Distribution of the species within site;
- Distribution and extent of habitats supporting the species;
- Structure, function and supporting processes of habitats supporting the species; and
- No significant disturbance of the species

The distance of the breeding colony (30km) is at a distance whereby the Proposed Development works would not have an impact.

Individual seals which form part of the SAC population could potentially feed and forage within the bay of Kirkwall. They could be at risk of temporary disturbance from underwater noise associated with the blasting. The noise is not predicted to cause long term negative effects on the SAC qualifying interest due to its short duration and adherence to a detailed Marine Mammal Mitigation Plan (MMMP).

Given the mitigation which will be employed and the temporary nature of the works producing underwater noise, the number of individuals affected will be negligible and any disturbance which may occur will not fall under the JNCC (2008) definition of significant disturbance. Therefore, it is considered that the MMMP will be sufficient to prevent short term negative effects.



## **9 IN COMBINATION EFFECTS AND CONCLUSION**

### **9.1 In Combination Effects**

It is a requirement of Appropriate Assessment that the cumulative or in-combination effects of the proposed development together with other plans or projects are assessed. Cumulative impacts can be defined as a project/plan/programme likely to have a significant effect thereon, either individually or in combination with other plans or projects.

In isolation, with mitigation, the Proposed Development will not have an adverse impact on the integrity of the designated sites assessed. Therefore, it is considered highly unlikely that the Proposed Development would contribute cumulatively to adverse effects on the integrity of these designated sites.

## 10 MITIGATION

The following mitigation will be employed to avoid and minimise any impacts occurring both during the construction and operational phases of the proposed development:

- Vessels to use established shipping lanes and adherence to speed limits;
- Deployment of an Ornithologist to monitor for the presence of qualifying species of the North Orkney SPA in the vicinity of the Proposed Development during piling and blasting works. This would involve surveying for North Orkney SPA qualifying species within 150m of the proposed piling/blasting works (the distance where a discernible effect could occur on a species). The Ornithologist will have the authority to stop proposed piling/blasting works should if necessary;
- A soft-start approach to piling works to prevent disturbance;
- Production and adherence to detailed MMPP;
- Production and adherence to a detailed Pollution Prevention Plan; and
- A silt boom to contain fine sediments will be used whilst land reclamation activities are undertaken.