BRITISH TELECOMMUNICATIONS PLC

Scotland - Northern Ireland (Scot-NI) 3 and 4 Replacement Cables

Technical Appendix D: Protected Sites Screening Report

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Technical Appendix D: Protected Sites Screening Report

Author/s

Charlie Cameron

Project Manager	Authoriser
[redacted]	[redacted]
Paula Daglish	Anna Farley

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GLOSSARY

AA
Appropriate Assessment

ASSI
Area of Special Scientific Interest

BT
British Telecommunications

CEMP
Construction Environmental Management Plan

CHSR
The Conservation (Natural Habitats, &c.) Regulations 1994

CNHR
The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended)

DAERA
Department of Agriculture, Environment and Rural Affairs

EU
European Union

GIS
Geographic Information System

HRA
Habitats Regulations Assessment

INIS
Invasive Non-Indigenous Species IROPI
Imperative Reasons of Overriding Public Interest

JNCC
Joint Nature Conservation Committee

LSE
Likely Significant Effect

MCZ
Marine Conservation Zone

MHWS
Mean High Water Springs

MS LOT
Marine Scotland Licensing Operations Team

MU
Management Unit

NCMPA
Nature Conservation Marine Protected Area

NI
Northern Ireland

PCE
Potential Cumulative Effect

pSPA
Proposed Special Protection Area

PTS
Permanent Threshold Shift

SAC
Special Area of Conservation

SOPEP
Shipboard Oil Pollution Emergency Plan

SPA
Special Protection Area

SSSI
Site of Special Scientific Interest

TROV
Tracked Remotely Operated Vehicle

TTS
Temporary Threshold Shift

WeBS
Wetland Bird Survey

1. INTRODUCTION

This report has been prepared for British Telecommunication plc (BT) to support their Marine Licence applications to Marine Scotland Licensing Operations Team (MS LOT) and the Department of Agriculture, Environment and Rural Affairs (DAERA) for the installation of two replacement submarine telecommunication cables between Scotland and Northern Ireland (NI), referred to as Scot-NI 3 and Scot-NI 4.

Global Marine Systems Ltd (hereafter referred to as Global Marine) have been sub-contracted by BT to install the Scot-NI 3 and Scot-NI 4 cables. Intertek Energy and Water Consultancy Services (Intertek) has been appointed by Global Marine to provide permitting services for the installation project and have prepared this Protected Sites Screening Report.

1.1 Project Background

The existing BT telecommunication cables, Scot-NI 1, and Scot-NI 2, crossing the Irish Sea between Scotland and NI are nearing the end of their functionable life and replacement of this critical infrastructure is required to maintain telecommunication services. BT propose to install two replacement fibre optic cables, referred to as Scot-NI 3 and Scot-NI 4 (See Figure 1-1, Drawing P2302-LOC-002-B) to add additional capacity to the existing cables and eventually replace the existing Scot-NI 1 and Scot-NI 2 cables.

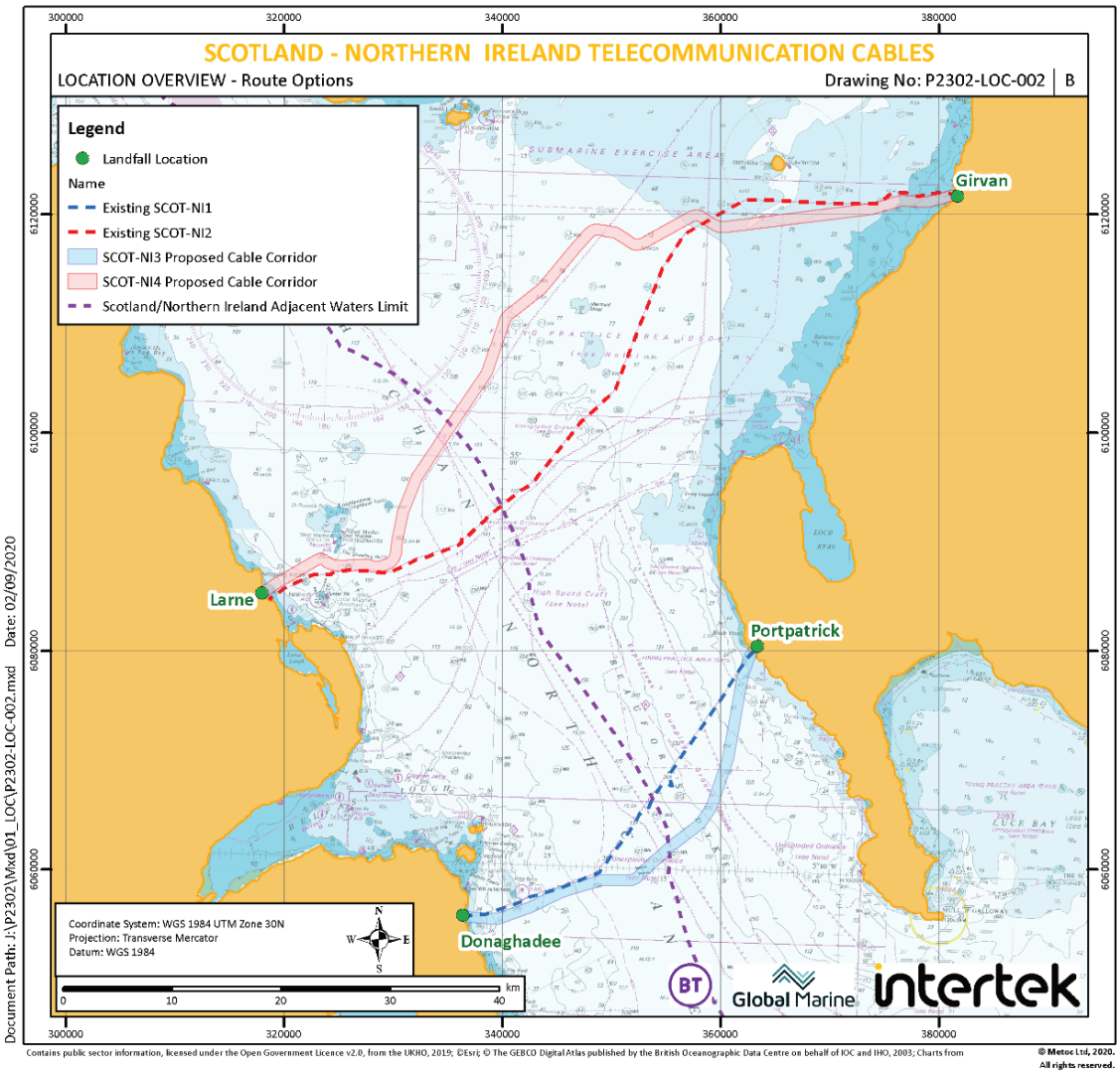
This Protected Sites Screening Report covers the marine components of the Scot-NI 3 and Scot-NI 4 application corridors (hereafter referred to as 'Scot-NI 3 and Scot-NI 4 respectively'). The application corridors are each 500m wide, and are as follows:

- Scot-NI 3 - from mean-high water springs (MHWS) at Portpatrick, Scotland to MHWS at Donaghadee, Northern Ireland;
- Scot-NI 4 - from MHWS at Girvan, Scotland to MHWS at Larne, Northern Ireland.

This is defined as the Project and comprises:

- The installation of two separate marine fibre-optic telecommunication cables; and
- All associated works required to install, test, commission, and complete Scot-NI 3 and 4.

Figure 1-1 Route overview of the Scot-NI 3 & 4 cables (Drawing P2302-LOC-002-B)



1.2 Installation Overview

The installation of the Scot-NI 3 and 4 cables is currently planned to commence in the 3rd quarter 2021 and be complete by the end of the year. Timings may vary due to weather and/or other operational reasons. The exact timing of the landfall works will be dependent upon the offshore works, marine licensing and onshore permits and conditions and notifications will be issued at agreed schedule prior to operations closer to the project commencement.

The cable will be installed by an installation plough, which is expected to proceed at a rate of 600m/hr. Cable crossings will be protected using Uraduct[1] and post-lay buried with a trenching remotely operated vehicle (TROV). Nearshore sections will be protected using articulated pipe and buried using a jet sled. The target burial depth is 1m offshore and 2m in the intertidal area. Where burial is insufficient due to hard ground or rock, the cable will be protected using articulated pipe and surface laid for short sections. No further cable protection measures have been proposed, however

[1] Uraduct® is a protection system to protect subsea cables from abrasion and impact. It is fitted to the cable on board the installation vessel prior to laying and burial of the cable.

contingency external cable protection measures of rock bags, concrete mattressing or rock berm are an option which may be used if required.

Due to the relatively small size of the fibre optic cables (up to 46mm in diameter) and the narrow trench cut by the plough, sediment along the installation route should reconsolidate almost immediately after the cable is laid. Benthic areas consisting of fine sands may take up to 24 hours to consolidate, while areas with thick clays may take longer.

1.3 Purpose and Scope of this Report

When making a marine licensing decision MS LOT and DAERA are required to consider the impacts of the proposed project alone and in combination with other relevant plans or projects on designated sites. To inform this decision-making process the Applicant is required to provide assessment in accordance with specific legislation and guidance.

The purpose of this Protected Sites Screening Report is to inform the 'Screening' stage of these assessments in determining whether the Project, either alone and in combination with other plans or projects, is likely to have a significant effect on any European site, hinder the conservation objectives of any Marine Protected Area and/or effect the integrity of any SSSI/ASSI.

The protected sites included in this report are:

- **European sites** - A collective term for Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites. SACs and SPAs are designated within 12 nautical miles (NM) under Scots law through The Conservation (Natural Habitats, &c.) Regulations 1994 (CHSR) (as amended) and in Northern Ireland through The Conservation (Natural Habitats, etc.) Regulations (CNHR) (Northern Ireland) 1995 (as amended) and sites designated beyond 12NM through the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007. It is the policy of both the governments to apply the same level of protection for proposed Special Protection Areas (pSPA). A pSPA is a site that has been approved for consultation but is not yet classified. UK Government policy (ODPM Circular 06/2005) states that sites designated under the Convention on Wetlands (Ramsar, Iran 1971) known as the "Ramsar Convention"[2] are also included under the definition European sites.
- **Nature Conservation Marine Protected Areas (NCMPA)** - designated within Scotland under the Marine (Scotland) Act 2010.
- **Marine Conservation Zones (MCZ)** - designated within the UK waters (Northern Ireland) under the Marine and Coastal Access Act (2009).
- **Sites of Special Scientific Interest (SSSI)** – designated within Scotland under The Nature Conservation (Scotland) Act 2004 for their species, habitat and/or geological features.
- **Areas of Special Scientific Interest (ASSI)** - designated within Northern Ireland under The Environment (Northern Ireland) Order 2002 for their species, habitat and/or geological features.

The report provides a high-level description of the Project, identifies the protected sites that could be affected by installation of Scot-NI 3 and Scot-NI 4, and identifies the potential pressures that could arise from the planned activities on the protected sites. It then determines if there is any connectivity between the Project and any protected sites and considers the potential for adverse effects on the conservation objectives and qualifying interests within the affected European site(s); potential for hindrance to the conservation objectives of MCZ / NCMPA sites and effects to the integrity of ASSI/SSSI

[2] The Ramsar Convention is an intergovernmental treaty that embodies the commitments of its member countries to maintain the ecological character of their Wetlands of International Importance and to plan for the "wise use", or sustainable use, of all of the wetlands in their territories" (RAMSAR 2011).

sites (Stage 1 AA Screening, and SSSI screening). It concludes in a statement for each European site, MCZ / NCMPA and ASSI/SSSI, as to whether further assessment past Stage 1 Screening is required.

All assessments in this report have been undertaken prior to the implementation of any potential mitigation measures.

This report has been prepared in accordance with the following guidance:

- Managing Natura 2000 sites. The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018).
- The Planning Inspectorate Advice note ten: Habitats Regulations Assessment relevant to nationally significant infrastructure projects (The Planning Inspectorate, 2017).
- Habitats Regulations Appraisal of Plans – Guidance for Plan-Making Bodies (Tyldesley, 2015).
- The European Commission Guidance - Article 6 of the Habitats Directive – "Rulings of the European Court of Justice. Final Draft", September 2014 (EC, 2014).
- EU Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC (EC, 2007).
- Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (EC, 2002).

1.4 Consultation

Table 1-1 summarises the relevant consultation undertaken to date for Scot-NI 3 and Scot-NI 4, received prior to and during preparation of the Screening Assessment which are considered in this report.

Table 1-1 Consultation and scoping responses

Stakeholder	Comment
Department of Agriculture, Environment & Rural Affairs (DAERA)	Consultation with DAERA confirmed the selection of protected sites that should be assessed within NI waters.
Department of Agriculture, Environment & Rural Affairs (DAERA)	Meetings held with DAERA and MS LOT confirmed acceptance that a Protected sites screening assessment should be submitted with the application to include the HRA Screening process, MPA Screening and ASSI assessment. There are no SSSI with sensitive features within the project area.
Marine Scotland (MS)	

2. ASSESSMENT PROCESS

2.1 Habitats Regulations Assessment (HRA) Process

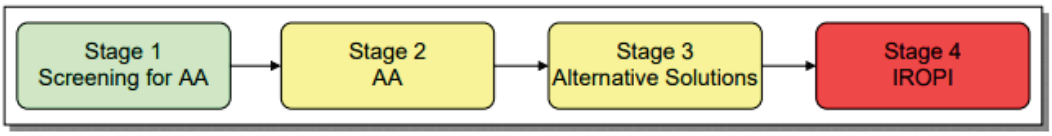
The Conservation (Natural Habitats, &c.) Regulations 1994 (CHSR) (as amended) in Scotland and The Conservation (Natural Habitats, etc.) Regulations (CNHR) (Northern Ireland) 1995 (as amended) in Northern Ireland require that any plan or project which has the potential to adversely affect a European site, no matter how far away from that site, be subject to the Habitats Regulations Assessment (HRA) process in order to determine whether Appropriate Assessment (AA) is required.

Whilst the obligation to undertake the AA is derived from Articles 6(3) and 6(4) of EC Council Directive 92/43/EC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive), it is regulation 48 of the CHSR and regulation 43 of the CNHR (Scotland and NI respectively) that sets out procedural requirements. It is the role of the designated competent authority (in this case Marine Scotland and DAERA) to undertake the HRA process. However, the applicant is required to provide necessary information to inform the process or to enable them to determine whether an AA is required. The competent authority can only agree to the plan or project if, based on the findings of the AA, it has ascertained that it will not have an adverse effect on the integrity of the site concerned. It is important to note that the onus is on demonstrating the absence (rather than the presence) of negative effects.

The Scot-NI 3 application corridor crosses the North Channel SAC and the Outer Ards SPA. The Scot-NI 4 application corridor crosses the Maidens SAC, and both routes cross the East Coast Marine pSPA. As the Project is not directly connected with or necessary to the management of these European sites, it is regarded as necessary that the Project should be subject to the HRA process.

The HRA process involves four stages (as outlined in EC 2002 and shown in Figure 2-1) that need to be applied in sequential order. The outcome at each successive stage determines whether a further stage in the process is required. The results at each stage must be documented so there is transparency of the decisions made.

Figure 2-1 Stages of HRA process



There is no statutory method for undertaking the HRA process, but The Planning Inspectorate (2017) guidance outlines the steps to be taken by the applicant at each Stage.

Stage 1 - Screening for Appropriate Assessment is the process that addresses and records the reasoning and conclusions in relation to the first two tests of regulation 48 of the CHSR and regulation 43 of the CNHR:

- Whether a plan or project is directly connected to or necessary for the management of the site, and
- Whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a European site in view of its conservation objectives.

Where significant effects are likely, uncertain, or unknown at screening stage, the process must proceed to Stage 2 (AA). Screening should be undertaken without the inclusion of mitigation, unless potential effects clearly can be avoided through the modification or redesign of the plan or project, in which case the screening process is repeated on the altered plan. The greatest level of evidence and

justification will be needed in circumstances when the process ends at screening stage on grounds of no effect. Where a potential for significant effect has been identified the assessment must progress to Stage 2.

This Protected Sites Screening Report presents the findings of the applicants Stage 1 Screening.

2.2 MCZ / NCMPA Assessment Process

Under Section 126 of the Marine and Coastal Access Act (MCAA) 2009 an applicant must satisfy the public authority with the function of determining applications (in this case Marine Scotland and DAERA) that there is no significant risk of the proposed act hindering the achievement of the conservation objectives stated for the MCZ/NCMPA. It is therefore related to the published or draft conservation objectives and designated features of any MCZ / NCMPA screened for likely significant effect (LSE).

The process for assessing the effects of a plan/project on an MCZ / NCMPA follows a three-stepped assessment process. Like the HRA process, the outcome at each successive stage determines whether a further stage in the process is required. The stages of the process are Screening, Stage 1 Assessment and Stage 2 Assessment.

All marine licence applications are screened to determine whether Section 126 of the MCAA should apply. It will apply if it is determined that:

- the licensable activity is taking place within or near an area being put forward or already designated as an MPA; and
- the activity is capable of affecting (other than insignificantly) either (i) the protected features of an MPA; or (ii) any ecological or geomorphological process on which the conservation of any protected feature of an MPA is (wholly or in part) dependant.

If during the screening stage it has been determined that Section 126 should apply, it is necessary for the public authority to assess, by proceeding to Stage 1 Assessment, which elements of Section 126 should apply to a marine licence application.

This Protected Sites Screening Report presents the findings of the applicants Screening of Marine Protected Areas.

2.3 SSSI and ASSI Notification

Chapter 1, Section 3 of the Nature Conservation (Scotland) Act 2004 and Part 4, Section 28 of The Environment (Northern Ireland) Order 2002 provides for the notification and confirmation of SSSIs/ASSIs respectively, by the country conservation bodies in Scotland (Scottish Natural Heritage) and NI (DAERA). These sites are identified for their flora, fauna, geological or physiographical features.

The local planning authority, all landowners and occupiers, and the Secretary of State must be notified of any activities or works within or adjacent to SSSI/ASSI. These Acts also contain measures for the protection and management of SSSIs/ASSIs, with attention to the integrity of the site and conservation objectives.

The notified bodies have a specified time-period within which representations and objections may be made. The country conservation bodies must consider these responses and may withdraw or confirm the notification. The assessment of potential effects to SSSI/ASSI in this report will inform the notification process as part of the Marine licence application submission to Marine Scotland/DAERA.

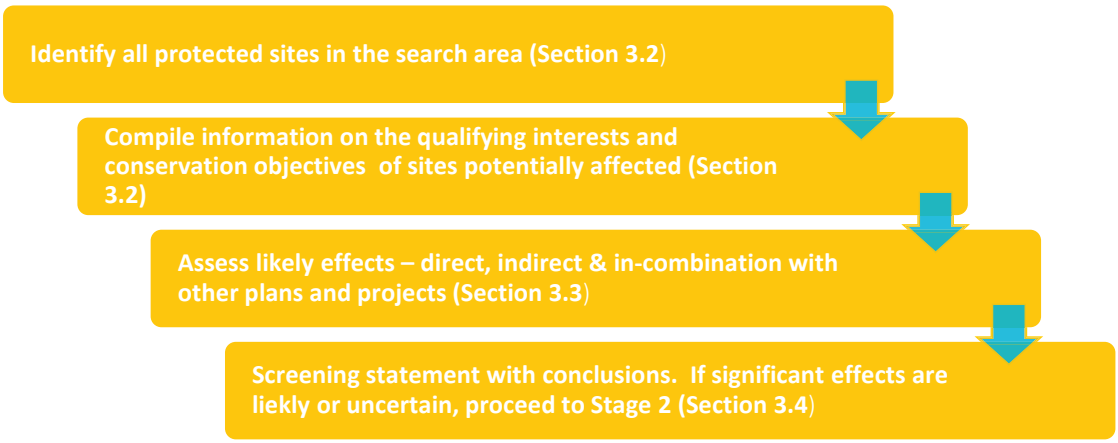
3. SCREENING ASSESSMENT

3.1 Assessment Approach

The screening assessment has been undertaken according to the Guidance listed in Section 1-3 above and following the process illustrated in Figure 3-1. It has considered all recent case law relevant to the Habitats Directive summarised in the EC Guidance (November 2018) and has been undertaken prior to the implementation of any potential mitigation measures.

The structure for the remainder of this Section therefore reflects the key steps in this process, as summarised in Figure 3-1.

Figure 1-1 Screening process



3.2 Identification of Relevant Protected Sites

The potential for a protected site to be significantly affected depends on whether receptors which are designating features of a protected site:

a. Can come into contact with the Project; and

b. Are sensitive to the installation activities to the extent that the activity is likely to have an adverse effect on the conservation objectives for the features.

Identifying relevant protected sites has therefore been achieved by applying the following steps:

1. Identify which receptors could be sensitive to the installation activities (Section 3.2.1);
2. Identify the potential pressures the proposed installation activities could have on these receptors and what the zone of influence for these receptors is, i.e. the spatial extent over which effects could extend (Section 3 of the MEA that accompanies this report);
3. Using the zones of influence as a guide, define a search area within which protected sites are identified to determine if the relevant receptor is a designated feature of the site (Section 3.2.2);
4. Screen European sites, NCMPA, MCZ and SSSI/ASSI within the defined search areas to assess whether interest features of the protected sites could be significantly affected by the Project, or their conservation objectives hindered (Section 3.2.3).

3.2.1 Identification of sensitive receptors

The receptors which could potentially be affected by the Project and could be the designating interest features of protected sites are:

- Intertidal and benthic habitats;
- Fish;
- Birds; and
- Marine mammals (cetacean and pinniped).

A description of the existing baseline for these receptors is provided in the Scot-NI Marine Environmental Report (MEA) (P2302_R4837_MEA) that accompanies this HRA. Pressures have been screened in or out in Section 3 of the MEA.

Otters (*Lutra lutra*) have not been considered in this report. While otter may be present in the areas adjacent to the application corridors, the proposed Scot-NI application corridors are not within 70 km of a SAC designated for otter. Desktop study has not identified any records of otter within 200 m of the proposed cable landfall sites.

3.2.2 Defining a search area (identification of potential pressures and zone of influence)

The OSPAR Intercessional Correspondence Group on Cumulative Effects (ICG-C) pressure list and descriptions (OSPAR Commission 2011) have been used to describe the potential pressures expected from the proposed installation activities. Listed in Table 3-1, these potential pressures may be direct or indirect, temporary, or permanent, beneficial, or harmful to the conservation site, or a combination of these. The zone of influence – spatial extent over which effects may extend – has also been defined.

The zone of influence has been used to establish a search area within which protected sites are screened for the relevant qualifying interest feature. Since mobile species from protected sites further field may travel into the zone of influence, the zone of influence cannot be used alone as a distance to screen in relevant protected sites. Therefore, search areas (distances from the Project) for each receptor group have been applied taking into consideration other information such as marine mammal management units and expert judgement to use for the initial screening of sites. Justification for the spatial extent of the search area is provided in Table 3-1. Table 3-2 identifies the pressures that have been scoped out of the HRA and the reason for the exclusion. These pressures will not be discussed further.

Table 3-1 Potential pressures, zones of influence and conservation site search area

Receptor	Potential Pressure	Phase	Project Activity	Zone of influence	Search Area and Justification
Habitats	Siltation rate changes, including smothering (depth of vertical sediment overburden)	Installation	Cable burial	18m – This is the calculated distance which sand will be dispersed from the centreline of the application corridor by jetting during spring tides.	Application area – Changes to habitat as a result of the installation activities may occur along the entire route of each cable.
	Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion		Seabed preparation, cable burial, cable removal.	Installation Plough (skids + share) 2.6m wide (disturbance) Plough share width 0.5m x 1m deep (penetration)	
			Anchor placement	Immediate area of anchor placement within the application area	
	Change to another seabed type		External cable protection at cable crossings	Scot-NI 3 - 15m wide x 90m long Scot-NI 4 – 15m wide x 72m long (Worst-case contingency external cable protection footprint at power cable crossing with Western Link)	
Birds	Visual (and above water noise) disturbance	Installation	Presence of installation vessel; and Cable burial.	4 km divers and sea ducks (JNCC 2017) 2 km all other seabird species (JNCC 2017)	46.7 km – A list of European sites to be assessed in the screening was agreed with DAERA, with the most distant site being 46.7 km from the Scot-NI 4 application corridor.
	Changes in supporting habitat and prey availability		Cable burial - by ploughing and jetting	Installation Plough (skids + share) 2.6m wide (disturbance)	Application area – Changes to habitat as a result of the installation activities may occur along the entire route of each cable.
Cetacean	Changes in supporting habitat and prey availability	Installation	Cable burial - by ploughing and jetting	Installation Plough (skids + share) 2.6m wide (disturbance)	Application area – Changes to habitat as a result of the installation activities may occur along the entire route of each cable.

Receptor	Potential Pressure	Phase	Project Activity	Zone of influence	Search Area and Justification
Pinniped	Visual (and above water noise) disturbance	Installation	Presence of installation vessel	900 m (Brasseur & Reijnders,1994)	100 km: While the zone of influence for visual disturbance of seals has been found to be 900m, both harbour and grey seals have been found to forage up to 100k m from their haul-out sites (Cunningham *et al.*, 2009; SMRU, 2017).
	Changes in supporting habitat and prey availability	Installation	Cable burial, by ploughing and jetting	Installation Plough (skids + share) 2.6 m wide (disturbance)	Application area – Changes to habitat as a result of the installation activities may occur along the entire route of each cable.

* Most cetaceans are wide-ranging, and individuals encountered within UK waters form part of a much larger biological population whose range extends into adjacent jurisdictions. As a result, MUs have been outlined for seven of the common regularly occurring species following advice from the Sea Mammals Research Unit (DECC 2016) and the International Council for the Exploration of the Sea (ICES). These provide an indication of the spatial scales at which impacts of anthropogenic activities should be taken into consideration.

Table 3-2 Pressures scoped out and reason for exclusion

Pressure screened out	Receptor	Reason for Exclusion
Accidental Hydrocarbon and PAH contamination	All receptors	Unplanned events (accidental oil or chemical spills) have been scoped out of the screening assessment for the following reasons: The likelihood of a large oil spill occurring from a Project vessel is extremely low and the risk is no greater than that for any other vessel in the region. All Project vessels will have control measures and shipboard oil pollution emergency plans (SOPEP) in place and will adhere to MARPOL Annex I requirements.
Water flow (tidal current) changes – local.	Habitat	The footprint of any placed cable protection will be limited to that required to ensure cable stability on the seabed and protection at crossings. No change to water flow (tidal current) expected.
Introduction or spread of invasive non-indigenous species (INIS)	Benthic habitats	The introduction of INIS (e.g. through discharge of ballast water from Project vessels) will be managed under the International Convention for the Control and Management of Ship's Ballast Water and Sediments. The latest guidance from the GB non-native species secretariat (2015) will be followed and a Biosecurity Plan produced pre-installation. This would include factors such as origins of the vessels and ensuring that relevant equipment is cleaned before use.
Visual disturbance	Fish	During cable installation, the presence of the installation vessels and equipment (and associated noise) could result in the visual disturbance of fish within the vicinity of operations, with some displacement of fish within the water column. However, the disturbance from installation operations will be temporary, localised, and given existing background levels of noise and shipping in the Irish Sea fish are likely to be habituated to such disturbance. Therefore, no significant effects are anticipated

Pressure screened out	Receptor	Reason for Exclusion
Siltation rate changes including smothering (depth of vertical sediment overburden)	Fish	There are three pathways for species to be smothered as a result of Project activities: by displaced sediments during trenching; by the re-deposition of suspended sediment; and by external cable protection material being placed on the seabed (which is being considered as a contingency). The effect from displaced sediment will be very localised, only affecting species in the immediate vicinity of cable installation. Suspended sediment settlement levels will be minimal with any material deposited likely to be quickly re-suspended and distributed by natural hydrodynamic processes. Therefore, this pressure on fish and shellfish has been scoped out of the Screening assessment.
Death or injury by collision	Marine mammals	Due to the limited presence of marine mammals within the application corridor, along with the limited spatial and temporal extent of the installation vessels within the Project Area, this pressure has been scoped out of the HRA Screening Assessment.
Underwater noise changes	Fish	Data sources available (Popper et al. 2014 and OSPAR Commission 2012) consider that the potential for likely significant effects to fish from cable installation activities is low. Many species of fish lack the specializations for receiving sound, therefore no effects to these groups of fish are anticipated. Potential effects are limited to fish with hearing specialties as to sustain an injury fish would need to be within close proximity of the vessel for 24 hours, which is extremely unlikely based on the migratory and predatory nature of these specialised species. Therefore, the effect of underwater noise changes to fish has been screened out.
Underwater noise changes	Marine mammals	Shipping and fishing activity are common across the Project Area. Vessels transit the area routinely, generating relatively high levels of noise. As a result, it is likely that marine mammal populations in the development area are habituated to continuous noise of the type generated during cable installation activity. Cable installation does not constitute a change from baseline vessel densities in the area. Therefore, the effect of underwater noise changes from cable installation has been screened out.

3.2.3 Screening of protected sites

A geographic information system (GIS) was used to map the boundaries of protected sites in relation to the proposed installation activities (See Figure 3-2, Drawing P2302-PROT-004-A). All protected sites which are within the search areas outlined in Table 3-1 have been screened for relevant qualifying interest features. Screened European sites for Scot-NI 3 and 4 are included in Table 3-3 and Table 3-4 respectively. Screened NCMPAs/MCZs for Scot-NI 4 are included in Table 3-5. Screened in ASSI's/SSSI's for Scot-NI 3 and 4 are included in Table 3-6 and Table 3-7. It should be noted that no NCMPAs or relevant MCZs were identified within the relevant search areas for Scot-NI 3.

A total of thirteen European sites, one MCZ, one NCMPA and ten ASSI's were screened in this assessment.

For each site it was determined whether there is the potential for an interaction between the Project and the feature of conservation interest i.e. whether there is a pressure-receptor pathway. This is determined by comparing information such as the zone of influence with information regarding the conservation feature e.g. species foraging distances, spatial extent of habitats etc. The interactions were defined as follows:

- **Yes**: A pathway between the project and the qualifying interest feature can be identified that is likely to result in an effect, or a pathway between the activities and the qualifying interests can be identified but it is uncertain whether or not a significant effect is likely; or
- **No**: Either a pathway between the project and the qualifying interest features cannot be identified or a pathway exists but there is no physical overlap of the pressure and the qualifying interest feature, or because any potential effects would be insignificant, being so restricted or remote from the site that they would not undermine the conservation objectives for the conservation site.

For all qualifying interest features where it is determined that there is a possible interaction, the likely significance of the effect is assessed considering the conservation objectives for the site in Section 3.3.

Table 3-3 Screening of relevant European sites for Scot-NI 3

Site Name & Code	Designating features	Distance (km)	Potential Pressure	Likelihood for interaction between installation activities and receptor	Screening conclusion
North Channel SAC (Site code UK0030399)	**Annex II Species (Primary Feature):** ▪ Harbour porpoise (*Phocoena phocoena*)	Within	Changes in supporting habitat and prey availability	**Yes** Harbour porpoise from this SAC are likely to range across the Irish Sea management unit. As such, changes to their supporting habitat and prey availability could occur as a result of the installation activities.	**Screened in**
Strangford Lough SAC (Site code UK0016618)	**Annex I Habitats (Primary reason for selection)** ▪ Mudflats and sandflats not covered by seawater at low tide (1140) ▪ Coastal lagoons (1150) ▪ Large shallow inlets and bays (1160) ▪ Reefs (1170) **Annex I Habitats (Qualifying Features)** ▪ Annual vegetation of drift lines (1210) ▪ Perennial vegetation of stony banks (1220) ▪ Salicornia and other annuals colonising mud and sand (1310) ▪ Atlantic Salt Meadows (*Glauco-Puccinellietalia maritimae*) (1330)	9.7	No pressure-receptor pathway identified	**No** The proposed installation activities will not interact with these features.	**Screened out**
	Annex II Species (Qualifying Feature) ▪ Harbour seal (*Phoca vitulina*)		Changes in supporting habitat and prey availability	**No** As the application corridor for Scot-NI 3 does not route through the Strangford Lough SAC, there is no pathway between this pressure and receptors if this site.	**Screened out**
Murlough SAC (Site code UK0016612)	**Annex I Habitats (Primary reason for selection)** ▪ Fixed coastal dunes with herbaceous vegetation (grey dunes) (2130) ▪ Atlantic decalcified fixed dunes (2150) **Annex I Habitats (Qualifying features)** ▪ Sandbanks which are slightly covered by sea water all the time (1110)	41	No pressure-receptor pathway identified	**No** The proposed installation activities will not interact with these features.	**Screened out**

Site Name & Code	Designating features	Distance (km)	Potential Pressure	Likelihood for interaction between installation activities and receptor	Screening conclusion
	▪ Mudflats and sandflats not covered by seawater at low tide (1140) ▪ Atlantic Salt Meadows (*Glauco-Puccinellietalia maritimae*) (1330) ▪ Embryonic shifting dunes (2110) ▪ Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) (2120) ▪ Dunes with *Salix repens* ssp. *argentea* (*Salicon arenariae*) (2170) **Annex II Species (Primary reason for selection)** ▪ Marsh fritillary butterfly (*Euphydryas (Eurodryas, Hypodryas) aurinia*) (1065)				
	Annex II Species (Qualifying Features) ▪ Harbour seal (*Phoca vitulina*)		Changes in supporting habitat and prey availability	**No** As the application corridor for Scot-NI 3 does not route through the Murlough SAC, there is no pathway between this pressure and receptors if this site.	**Screened out**
East Coast Marine pSPA	**Breeding birds** ▪ Manx Shearwater (*Puffinus puffinus)* ▪ Sandwich Tern (*Thalasseus sandvicensis*) ▪ Common Tern (*Sterna hirundo*) ▪ Arctic Tern (*Sterna paradisaea*) **Wintering birds** ▪ Red-throated Diver (*Gavia stellata*) ▪ Great Crested Grebe (*Podiceps cristatus*) ▪ Eider (*Somateria mollissima*)	Within	Visual (and above water noise) Disturbance	**Yes** The presence of installation vessels in the vicinity of the East Coast Marine pSPA landfall site (and the noise the vessels generate) could disturb any birds in the local vicinity and preclude them from utilising the intertidal area.	**Screened in**
			Changes in supporting habitat and prey availability	**Yes** As the application corridor for both cable routes pass through the East Coast Marine pSPA, changes to supporting habitat and prey availability could occur as a result of installation activities.	**Screened in**
Outer Ards SPA and Ramsar site (Site code UK9020271)	**Breeding birds** ▪ Arctic tern (*Sterna paradisaea*) **Wintering birds**	Within	Visual (and above water noise) Disturbance	**Yes** The presence of installation vessels in the vicinity of the Outer Ards SPA landfall site (and the noise the vessels generate) could disturb any birds in the local vicinity and preclude them from utilising the intertidal area.	**Screened in**

Site Name & Code	Designating features	Distance (km)	Potential Pressure	Likelihood for interaction between installation activities and receptor	Screening conclusion
	▪ Golden plover (*Pluvialis apricaria*) ▪ Light-bellied Brent goose (*Branta bernicla hrota*) ▪ Ringed plover (*Charadrius hiaticula*) ▪ Turnstone (*Arenaria interpres*)		Changes in supporting habitat and prey availability	**Yes** As the application corridor for both cable routes pass through the Outer Ards SPA and Ramsar site, changes to supporting habitat and prey availability could occur as a result of installation activities.	**Screened in**
Copeland Islands SPA (Site code UK9020291)	**Breeding birds** ▪ Manx Shearwater ▪ Arctic Tern	5.5	Visual Disturbance	**Yes** Birds from the Copelands SPA could potentially be found foraging within the application corridor for Scot-NI 3. As such they may be subject to disturbance from the installation vessel and the noise produced from installation activities.	**Screened in**
			Changes in supporting habitat and prey availability	**No** As the application corridor for Scot-NI 3 does not route through the Copelands Islands SPA, there is no pathway between this pressure and receptors if this site.	**Screened out**
Strangford Lough SPA & Ramsar site (Site code UK9020111)	**Breeding birds** ▪ Sandwich tern (*Sterna sandvicensis*) ▪ Common tern (*Sterna hirundo*) ▪ Arctic tern (*Sterna paradisaea)*	9.9	Visual (and above water noise) Disturbance	**Yes** Each of these designated tern species have a maximum reported foraging range of at least 30 km (Woodward *et al.*, 2019). As such there exists the potential for these species to be found foraging within the application corridor.	**Screened in**
	Wintering birds ▪ Light-bellied Brent goose (*Branta bernicla hrota*) ▪ Knot (*Calidris canutus*) ▪ Redshank (*Tringa totanus*) ▪ Wintering waterfowl assemblage		Visual (and above water noise) Disturbance	**No** Due to the geographical separation and overland distance between the Templepatrick landfall site and Strangford Lough SPA, the potential for wintering waterfowl to be found within the landfall and application corridor is minimal.	**Screened out**
			Changes in supporting habitat and prey availability	**No** As the application corridor for Scot-NI 3 does not route through the Strangford Lough SPA & Ramsar site, there is no pathway between this pressure and receptors if this site.	**Screened out**
Belfast Lough SPA and Ramsar site (Site code UK9020101)	**Wintering population** ▪ Redshank **Breeding birds**	14.5	Visual (and above water noise) Disturbance	**Yes**	**Screened in**

Site Name & Code	Designating features	Distance (km)	Potential Pressure	Likelihood for interaction between installation activities and receptor	Screening conclusion
	▪ Common Tern ▪ Arctic tern **Non-breeding birds** ▪ Bar-tailed godwit (*Limosa lapponica*) ▪ Black-tailed godwit (*Limosa limosa*)			Individuals from this site could potentially be found foraging within the application corridor for Scot-NI 3. As such they may be subject to disturbance from the installation vessel and the noise produced from installation activities.	
			Changes in supporting habitat and prey availability	**No** As the application corridor for Scot-NI 3 does not route through the Belfast Lough SPA and Ramsar site, there is no pathway between this pressure and receptors of this site.	**Screened out**
Belfast Lough Open Water SPA	**Wintering population** ▪ Great Crested Grebe	14.5	Visual (and above water noise) Disturbance	**No** Great crested grebe is typically found in lakes and reservoirs as opposed to the marine environment (The Wildlife Trusts, 2020a)). As such, the potential for interaction between the species and installation activities is negligible.	**Screened out**

Table 3-4 Screening of relevant European sites for Scot-NI 4

Site Name	Designating features	Approx. Distance (km)	Potential Pressure	Likelihood for interaction between installation works and receptor	Screening conclusion
The Maidens SAC (Site code UK0030384)	**Annex I Habitats (Primary reason for selection)** ▪ Sandbanks which are slightly covered by sea water all the time (1110)	Within	Siltation rate changes (including smothering) Physical change to seabed type	**No** This feature is located to the south of East Maiden Island and occupies a small-combined area of approximately 2 km² (DAERA, 2012). The application corridor for Scot-NI 4 passes approximately 2.4 km south of this area. As such, there is no pathway between this pressure and this receptor.	**Screened in**
	▪ Reefs (1170)		Siltation rate changes (including smothering) Physical change to seabed type	**Yes** The extent and location of reef habitat within the Maidens SAC was determined with maps provided by DAERA and confirmed with the marine survey data. Subsequently, micro-routing during the Cable Route Desktop Study was undertaken to avoid sensitive conservation features within the protected site as far as practicable. Due to the presence of Annex I reef habitat, articulated pipe will not be used within the Maidens SAC. Even if used, the potential impact from articulated pipe would be very small, as it is fitted as an integral part of the cable. However, the application corridor still runs through one potential Annex I habitat, in the form of bedrock reefs within the Maidens SAC. As such, the possibility that such habitat may be affected by siltation rate changes and/or physical change to seabed type caused by cable installation cannot be ruled out at this stage.	**Screened in**
	Annex II Species (Qualifying Feature) ▪ Grey seal (*Halichoerus grypus*) (1364)		Changes in supporting habitat and prey availability	**Yes** As the application corridor for both cable routes pass through The Maidens SAC, changes to supporting habitat and prey availability could occur as a result of installation activities.	**Screened in**
East Coast Marine pSPA	**Breeding birds** ▪ Manx Shearwater ▪ Sandwich Tern ▪ Common Tern ▪ Arctic Tern **Wintering birds** ▪ Red-throated Diver	Within	Visual (and above water noise) disturbance	**Yes** The presence of installation vessels in the vicinity of the East Coast Marine pSPA landfall site could disturb any birds in the local vicinity and preclude them from utilising the intertidal area.	**Screened in**
			Changes in supporting habitat and prey availability	**Yes**	**Screened in**

Site Name	Designating features	Approx. Distance (km)	Potential Pressure	Likelihood for interaction between installation works and receptor	Screening conclusion
	▪ Great Crested Grebe ▪ Eider			As the application corridor for both cable routes pass through the East Coast Marine pSPA, changes to supporting habitat and prey availability could occur as a result of installation activities.	
Ailsa Craig SPA (Site code UK9003091)	**Breeding birds** ▪ Gannet (*Morus bassanus*) ▪ Guillemot (*Uria aalge*) ▪ Herring gull (*Larus argentatus*) ▪ Black legged kittiwake (*Rissa tridactyla*) ▪ Lesser black-backed gull (*Larus fuscus*) ▪ Breeding seabird assemblage	0.76	Visual (and above water noise) disturbance	**Yes** Should any birds be found foraging within the Ailsa Craig SPA site boundary during installation activities for Scot-NI 4, there exists the potential that such individuals may be visually disturbed by such activities.	**Screened in**
			Changes in supporting habitat and prey availability	**No** As the application corridor for Scot-NI 4 does not route through the Ailsa Craig SPA , there is no pathway between this pressure and receptors if this site.	**Screened out**
Larne Lough SPA and Ramsar site (Site code UK9020042)	**Breeding population** ▪ Sandwich Tern ▪ Roseate Tern ▪ Common Tern ▪ Mediterranean gull (*Ichthyaetus melanocephalus*) **Wintering population** ▪ Light-bellied Brent Goose	4.1	Visual (and above water noise) disturbance	**Yes** Individuals from this site could potentially be found foraging within the application corridor for Scot-NI 4. As such they may be subject to disturbance from the installation vessel and the noise produced from installation activities.	**Screened in**
			Changes in supporting habitat and prey availability	**No** As the application corridor for Scot-NI 4 does not route through the Larne Lough SPA and Ramsar site, there is no pathway between this pressure and receptors if this site.	**Screened out**
Rathlin Island SPA (Site code UK9020011)	**Breeding birds** ▪ Guillemot ▪ Razorbill ▪ Kittiwake ▪ Puffin ▪ Seabird assemblage	46.7	Visual (and above water noise) disturbance	**No** Due to the distance of the Scot-NI 4 application corridor from the Rathlin Islands SPA, the potential for birds from this site to be found loafing or foraging within the vicinity of the application corridor is minimal.	**Screened out**
	▪ Peregrine falcon			**No** Peregrine falcon does not forage in the marine environment. As such there is no pathway for interaction between the species and the proposed installation activities.	

Site Name	Designating features	Approx. Distance (km)	Potential Pressure	Likelihood for interaction between installation works and receptor	Screening conclusion
			Changes in supporting habitat and prey availability	**No** As the application corridor for Scot-NI 4 does not route through Rathlin island SPA, there is no pathway between this pressure and receptors if this site.	**Screened out**

Table 3-5 Screening of relevant NCMPAs/MCZs for Scot-NI 4

Site Name	Designating features	Approx. Distance (km)	Potential Pressure	Likelihood for interaction between installation works and receptor	Screening conclusion
Clyde Sea Sill NCMPA	**Protected features** ▪ Black guillemot (*Cepphus grylle*)	Within	Visual (and above water noise) disturbance	**Yes** Should any black guillemot be found foraging within Clyde Sea Sill NCMPA during installation activities for Scot-NI 4, there exists the potential that such individuals may be visually disturbed by such activities.	**Screened in**
			Changes in supporting habitat and prey availability	**Yes** As the application corridor for both cable routes pass through the Clyde Sea Sill NCMPA, changes to supporting habitat and prey availability could occur as a result of installation activities.	**Screened in**
	▪ Circalittoral and offshore sand and coarse sediment communities ▪ Marine geomorphology of the Scottish shelf seabed – sand banks, sand ribbon fields and sand wave fields		Physical change to another seabed type Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion	**Yes** As cable protection measures are a contingency that might be utilised within the Clyde Sea Sill NCMPA site boundaries, there may be small, localised changes to the physical characteristics of the seabed.	**Screened in**
			Siltation rate changes (including smothering)	**No** Changes in siltation rate will not affect the integrity of the protected habitat (Marine Scotland, 2020).	**Screened out**
	▪ Fronts		No pressure-receptor pathway identified	**No** The proposed installation activities will not interact with this feature.	**Screened out**
Rathlin Island MCZ	**Protected Features** **Habitats** ▪ Deep seabed **Geological/Geomorphological** ▪ Features indicating past changein relative sea level	46.7	No pressure-receptor pathway identified	**No** The proposed installation activities will not interact with this feature.	**Screened out**

Site Name	Designating features	Approx. Distance (km)	Potential Pressure	Likelihood for interaction between installation works and receptor	Screening conclusion
	Species ▪ Black guillemot		Visual (and above water noise) disturbance	**No** Due to the distance of the Scot-NI 4 application corridor from the Rathlin Islands SPA, the potential for birds from this site to be found loafing or foraging within the vicinity of the application corridor is minimal.	**Screened out**

Table 3-6 Screening of relevant ASSI's for Scot-NI 3

Site Name	Designating features	Distance (km)	Potential Pressure	Likelihood for interaction between installation works and receptor	Screening conclusion
Outer Ards ASSI	**Wintering Waterbirds** ▪ Great Cormorant (*Phalacrocorax carbo*) ▪ Curlew (*Numenius arquata*) ▪ Dunlin (*Calidris alpine*) ▪ Eider (*Somateria mollissima*) ▪ Golden Plover (*Pluvialis apricaria*) ▪ Great Crested Grebe (*Podiceps cristatus*) ▪ Lapwing (*Vallenus vallenus*) ▪ Light-bellied Brent Goose (*Branta bernicla hrota*) ▪ Oystercatcher (*Haematopus ostralegus*) ▪ Purple Sandpiper (*Calidris maritima*) ▪ Redshank (*Tringa tetanus*) ▪ Ringed Plover (*Charadrius hiaticula*) ▪ Turnstone (*Arenaria interpres*)	Within	Visual (and above water noise) Disturbance	**Yes** The application corridor transits directly through the Outer Ards ASSI. As such, should any of the designating features of the site be present when installation occurs, there exists the potential for disturbance to occur as a result of the presence of installation vessels/equipment.	**Screened in**
			Changes in supporting habitat and prey availability	**Yes** As the application corridor for both cable routes pass through the Outer Ards ASSI, changes to supporting habitat and prey availability could occur as a result of installation activities.	**Screened in**
	Marine Mammals ▪ Harbour seal (*Phoca vituluna*)		Visual (and above water noise) Disturbance	**Yes** There is a seal haul out located within the 500m application corridor at Kinnegar Rocks Donaghdee landfall (NIEA, 2020). As such seals hauled-out at this site may be disturbed by the presence of the installation vessel and activities in the intertidal area.	**Screened out**
			Changes in supporting habitat and prey availability	**Yes** As the application corridor for both cable routes pass through the Outer Ards ASSI, changes to supporting habitat and prey availability could occur as a result of installation activities.	**Screened in**
	Habitat Features ▪ Lower Palaeozoic sedimentary rocks		No pressure-receptor pathway identified	**No** The proposed installation activities will not interact with these features.	**Screened out**

Site Name	Designating features	Distance (km)	Potential Pressure	Likelihood for interaction between installation works and receptor	Screening conclusion
	▪ Dune and maritime grassland ▪ Maritime heath ▪ Cliff ledge vegetation ▪ Saltmarshes				
Copeland Islands ASSI	**Features of interest:** **Breeding birds** ▪ Manx shearwater ▪ Arctic tern ▪ Common gull ▪ Eider duck ▪ Mediterranean Gull ▪ Black guillemot ▪ Black-headed gull	5.5	Visual (and above water noise) Disturbance	**Yes** Marine birds from the Copelands SPA could potentially be found foraging within the application corridor for Scot-NI 3. As such they may be subject to disturbance from the installation vessel and the noise produced from installation activities.	**Screened in**
			Changes in supporting habitat and prey availability	**No** As the application corridor for Scot-NI 3 does not route through the Copelands Islands SPA, there is no pathway between this pressure and receptors if this site.	**Screened out**
	Breeding birds ▪ Water rail ▪ Ringed plover ▪ Lapwing ▪ Snipe ▪ Redshank ▪ Oystercatcher ▪ Stock dove ▪ Sedge warbler ▪ Reed bunting **Non-breeding** ▪ Hen harrier ▪ Sparrowhawk ▪ Buzzard ▪ Kestrel ▪ Merlin		Visual (and above water noise) Disturbance	**No** These listed birds are either intertidal wading species or terrestrial species that will not interact with the Scot-NI 3 application corridor.	**Screened out**

Site Name	Designating features	Distance (km)	Potential Pressure	Likelihood for interaction between installation works and receptor	Screening conclusion
	▪ Peregrine falcon				
	Pinnipeds ▪ Grey seal ▪ Harbour seal		Visual (and above water noise) Disturbance	**No** Due to the distance from this site, installation activities within the application corridor will not interact with any haul-out sites at this location.	**Screened out**
The Gobbins ASSI	**Features of interest:** ▪ Sea cliffs ▪ Red Fescue (*Festuca rubra*) ▪ Bracken (*Pteridium aquilinum)* ▪ Thrift (*Armeria maritima)* ▪ Common Bird's-foot-trefoil (*Lotus corniculatus)* ▪ Sea Campion (*Silene uniflora)* ▪ Kidney Vetch (*Anthyllis vulneraria)*	8.6	No pressure-receptor pathway identified	**No** The proposed installation activities will not interact with these features.	**Screened out**
	▪ Kittiwake ▪ Razorbill ▪ Atlantic puffin ▪ Fulmar ▪ Cormorant ▪ Shag ▪ Common guillemot		Visual Disturbance	**Yes** The application corridor transits in close proximity to the Gobbins ASSI. As such, should any of the marine birds the site is designated for be present when installation occurs, there exists the potential for disturbance to occur as a result of the presence of installation vessels/equipment.	**Screened in**
	▪ Peregrine falcon			**No** Peregrine falcon does not forage in the marine environment. As such there is no pathway for interaction between the species and the proposed installation activities.	**Screened out**

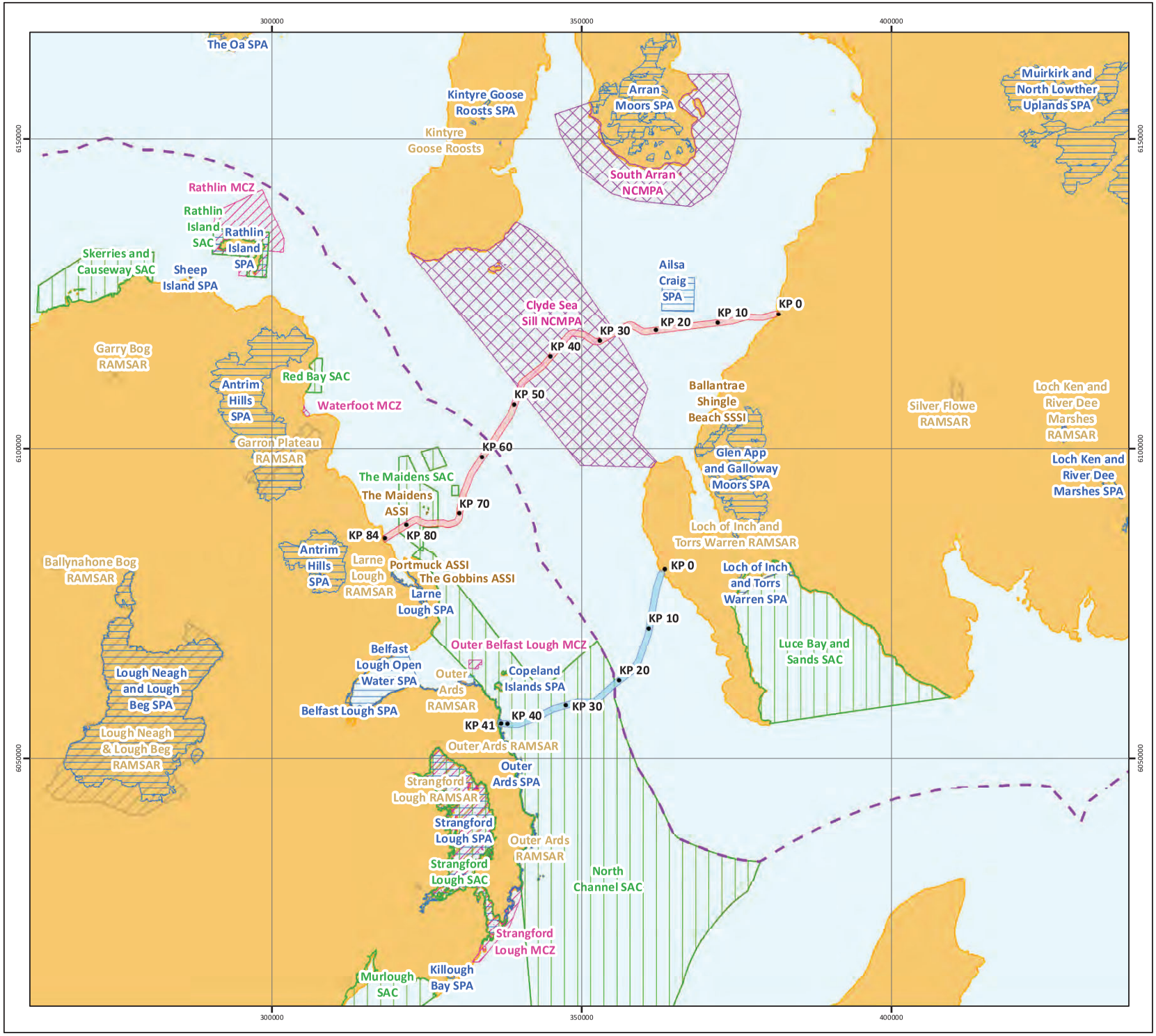
Site Name	Designating features	Distance (km)	Potential Pressure	Likelihood for interaction between installation works and receptor	Screening conclusion
Strangford Lough ASSI Part 1, 2 and 3	**Features of interest** **Breeding birds** ▪ Roseate tern ▪ Arctic tern ▪ Common tern ▪ Sandwich tern ▪ Cormorant	9.9	Visual (and above water noise) Disturbance	**Yes** Each of the designated tern species, and cormorant, have a maximum reported foraging range of at least 30 km (Woodward *et al.*, 2019). As such there exists the potential for these species to be found foraging within the application corridor.	**Screened in**
	Wintering birds ▪ Wigeon ▪ Shelduck ▪ Pale-bellied Brent goose ▪ Oystercatcher ▪ Lapwing ▪ Golden plover ▪ Curlew ▪ Redshank ▪ Dunlin ▪ Knot		Visual (and above water noise) Disturbance	**No** Due to the geographical separation and overland distance between the landfall site and Strangford Lough ASSI, the potential for wintering waterfowl to be found within the landfall and application corridor is minimal.	**Screened out**
			Changes in supporting habitat and prey availability	**No** As the application corridor for Scot-NI 3 does not route through the Strangford Lough ASSI, there is no pathway between this pressure and receptors if this site.	**Screened out**
	Pinnipeds ▪ Grey seal ▪ Harbour seal		Changes in supporting habitat and prey availability	**No** As the application corridor for Scot-NI 3 does not route through the Strangford Lough ASSI, there is no pathway between this pressure and receptors if this site.	**Screened out**
Belfast Lough Outer ASSI	**Wintering birds** ▪ Great crested grebe ▪ Oystercatcher	14.3	Visual (and above water noise) Disturbance	**No** Due to the geographical separation and overland distance between the landfall site and Belfast Lough Outer ASSI , the potential for wintering waterfowl to be found within the landfall and application corridor is minimal.	

Site Name	Designating features	Distance (km)	Potential Pressure	Likelihood for interaction between installation works and receptor	Screening conclusion
	▪ Redshank ▪ Ringed plover ▪ Turnstone ▪ Purple sandpiper ▪ Eider duck		Changes in supporting habitat and prey availability	**No** As the application corridor for Scot-NI 3 does not route through the Belfast Lough Outer ASSI, there is no pathway between this pressure and receptors if this site.	**Screened out**
	Pinnipeds ▪ Grey seal ▪ Harbour seal		Changes in supporting habitat and prey availability	**No** As the application corridor for Scot-NI 3 does not route through the Belfast Lough Outer ASSI, there is no pathway between this pressure and receptors if this site.	**Screened out**

Table 3-7 Screening of relevant ASSI's for Scot-NI 4

Site Name	Designating features	Approx. Distance (km)	Potential Pressure	Likelihood for interaction between installation works and receptor	Screening conclusion
The Maidens ASSI	**Features of interest** ▪ European shag (*Phalacrocorax aristotelis*)	2.15	Visual disturbance	**Yes** If European shag are in the vicinity during operations, there exists the potential that such individuals may be visually disturbed by such activities.	**Screened in**
	▪ Harbour seal (*Phoca vitulina*) ▪ Grey seal (*Halichoerus grypus*)		Visual disturbance	**No** There are no harbour or grey seal haul-out sites located within 900m (distance at which flushing from a haul-out site may occur) of the Scot-NI 4 application corridor. As such, no disturbance to seals at their haul-out sites within The Maidens ASSI is expected.	**Screened out**
	▪ Intertidal rock communities		No pressure-receptor pathway identified	**No** The proposed installation activities will not interact with these features.	**Screened out**
Larne Lough ASSI	**Features of interest** **Breeding birds** ▪ Roseate tern ▪ Arctic tern ▪ Common tern ▪ Sandwich tern ▪ Mediterranean gull	4.1	Visual (and above water noise) disturbance	**Yes** Individuals from this site could potentially be found foraging within the application corridor for Scot-NI 4. As such they may be subject to disturbance from the installation vessel and the noise produced from installation activities.	**Screened in**
	Wintering birds ▪ Light-belied Brent goose ▪ Goldeneye ▪ Great crested grebe ▪ Red-breasted merganser ▪ Shelduck ▪ Greenshank ▪ Redshank		Visual (and above water noise) disturbance	**No** Due to the geographical separation and overland distance between the landfall site and Larne Lough ASSI , the potential for wintering waterfowl to be found within the landfall and application corridor is minimal.	
			Changes in supporting habitat and prey availability	**No** As the application corridor for Scot-NI 4 does not route through the Larne Lough SPA and Ramsar site, there is no pathway between this pressure and receptors if this site.	**Screened out**

Site Name	Designating features	Approx. Distance (km)	Potential Pressure	Likelihood for interaction between installation works and receptor	Screening conclusion
Portmuck ASSI	**Features of interest:** ▪ Hibernian Greensands Formation ▪ Coastal cliffs ▪ Lias Waterloo Mudstone Formation	6.5	No pressure-receptor pathway identified	**No** The proposed installation activities will not interact with these features.	**Screened out**
	▪ Razorbill ▪ Guillemot ▪ Puffin ▪ Kittiwake ▪ Fulmar ▪ Black guillemot		Visual Disturbance	**Yes** The application corridor crosses in close proximity to the Portmuck ASSI. As such, should any of the designating features of the site be present when installation occurs, there exists the potential for disturbance to occur as a result of the presence of installation vessels/equipment.	**Screened in**



SCOTLAND - NORTHERN IRELAND TELECOMMUNICATION CABLES

ENVIRONMENTAL DESIGNATIONS
Protected Sites

Drawing No: P2302-PROT-004 | **A**

Legend

- KP
- SCOT-NI3 Proposed Cable Corridor
- SCOT-NI4 Proposed Cable Corridor
- Scotland/Northern Ireland Adjacent Waters Limit
- SAC
- SPA
- MCZ
- RAMSAR
- NCMPA
- SSSI/ASSI

N, W, E, S

NOTE: Not to be used for Navigation

Date	09 October 2020
Coordinate System	WGS 1984 UTM Zone 30N
Projection	Transverse Mercator
Datum	WGS 1984
Data Source	UKHO; JNCC; SNH; DAERA; ESRI; GEBCO; NIEA;
File Reference	J:\P2302\Mxd\05_PROT\ P2302-PROT-004.mxd
Created By	Chris Dawe
Reviewed By	Emma Storey
Approved By	Paula Daglish

BT Global Marine intertek

0 5 10 15 20 km

3.3 Assessment of Likely Significant Effects

3.3.1 Introduction

A likely effect is defined as one that cannot be ruled out based on objective information. The test is a 'likelihood' of effects rather than a 'certainty' of effects. Where the Project is likely to undermine the site's conservation objectives, it must be considered likely to have a significant effect on the site. The assessment of that risk must be made in the light, amongst other things, of the characteristics and specific environmental conditions of the site concerned. Where a possible interaction between the proposed installation activities and the conservation site has been identified (Table 3-8 and 3-9), the potential for a likely significant effect on the conservation objectives has been considered in the sections below.

Table 3-8 and 3-9 provide a summary of the likely pathway for effects from the potential pressures identified during the initial screening in Section 3.2 above.

Table 3-8 Summary of sites to be assessed for pathway for effects (LSE) for Scot-NI 3

Site Name	Distance to Site	Designating Feature to be assessed for LSE	Potential Pressure to be assessed for LSE
North Channel SAC	Within	Harbour porpoise	Changes in supporting habitat and prey availability
Outer Ards SPA and Ramsar	Within	Breeding and wintering birds	Visual (and above water noise) disturbance Changes in supporting habitat and prey availability
East Coast Marine pSPA	Within	Breeding and wintering birds	Visual (and above water noise) disturbance Changes in supporting habitat and prey availability
Copeland Islands SPA	5.5 km	Breeding birds	Visual (and above water noise) disturbance
Strangford Lough SPA and Ramsar	9.9 km	Breeding birds	Visual (and above water noise) disturbance
Belfast Lough SPA and Ramsar	14.5 km	Wintering birds	Visual (and above water noise) disturbance
Outer Ards ASSI	Within	Wintering waterbirds Harbour seal	Visual (and above water noise) disturbance Changes in supporting habitat and prey availability
Copeland Islands ASSI	5.5 km	Breeding birds	Visual (and above water noise) disturbance
The Gobbins ASSI	8.6 km	Bird populations	Visual (and above water noise) disturbance
Strangford Lough ASSI Part 1, 2 and 3	9.9 km	Breeding birds	Visual (and above water noise) disturbance

Table 3-9 Summary of sites to be assessed for pathway for effects (LSE) for Scot-NI 4

Site Name	Distance to Site	Designating Feature to be assessed for LSE	Potential Pressure to be assessed for LSE
The Maidens SAC	Within	Reefs	Siltation rate changes (including smothering) Physical change (to another seabed type)
		Grey seal	Changes in supporting habitat and prey availability
East Coast Marine pSPA	Within	Breeding and wintering birds	Visual (and above water noise) disturbance Changes in supporting habitat and prey availability
Ailsa Craig SPA	0.76 km	Breeding birds	Visual (and above water noise) disturbance
Larne Lough SPA and Ramsar	4.1 km	Breeding birds and wintering birds	Visual (and above water noise) disturbance
Clyde Sea Sill NCMPA	Within	Black guillemot	Visual (and above water noise) disturbance Changes in supporting habitat and prey availability
		Circalittoral and offshore sand and coarse sediment communities Marine geomorphology of the Scottish shelf seabed – sand banks, sand ribbon fields and sand wave fields	Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion Physical change to another seabed type
The Maidens ASSI	2.15 km	European shag	Visual (and above water noise) disturbance
Larne Lough ASSI	4.1 km	Breeding birds	Visual (and above water noise) disturbance
Portmuck ASSI	6.5 km	Bird populations	Visual (and above water noise) disturbance

Table 3-8 identifies that there are two potential pressures from the proposed installation activities that could affect the Special Conservation Interests/Qualifying Interests of the sites that the Scot-NI 3 application corridor passes through. These are:

- Visual (and above water noise) disturbance; and
- Changes in supporting habitat and prey availability

Table 3-9 identifies that there are five potential pressures from the proposed installation activities that could impact the Special Conservation Interests/Qualifying Interests for sites that the Scot-NI 4 application corridor passes through. These are:

- Visual (and above water noise) disturbance;
- Changes in supporting habitat and prey availability;
- Physical change (to another seabed type);

- Siltation rate changes (Including smothering); and
- Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion

This section describes these pressures and their potential effects and assesses the potential for likely significant effects of the proposed installation activities on the conservation objectives of the conservation site(s) both alone and in-combination with other plans or projects.

3.3.2 Visual (and above water noise) disturbance

The protected sites identified during the screening process as having qualifying interests which may be sensitive to visual (and above water noise) disturbance from the proposed activities are:

- Outer Ards SPA, Ramsar and ASSI (Scot-NI 3)
- East Coast Marine pSPA (Scot-NI 3 & 4)
- Copeland Islands SPA and ASSI (Scot-NI 3)
- The Gobbins ASSI (Scot-NI 3)
- Strangford Lough SPA, Ramsar and ASSI Part 1, 2 and 3 (Scot-NI 3)
- Belfast Lough SPA and Ramsar (Scot-NI 3)
- Ailsa Craig SPA (Scot-NI 4)
- Larne Lough SPA, Ramsar and ASSI (Scot-NI 4)
- Portmuck ASSI (Scot-NI 4)
- Clyde Sea Sill NCMPA (Scot-NI 4)

These sites have been identified for the potential for birds to be visually disturbed. The most vulnerable birds to disturbance are those within the zone of influence of the installation operations. Disturbance is predicted to be limited to that initiated by the movement of vessels. Birds may take evasive action, but a single disturbance event does not have any immediate effect on the survival or productivity of an individual bird. Repeated disturbance, or disturbance over an extended period, can affect survival and productivity (Valente and Fischer, 2011).

The extent to which a seabird responds to disturbance is dependent upon factors including period of breeding cycle during which disturbance occurs; duration, type and intensity of the disturbance; presence of opportunistic predators; and the degree of habituation with the disturbance (Showler *et al.*, 2010). Some seabirds are more resilient to disturbance than others.

Prolonged disturbance at the nest site could result in impaired breeding, disruption to incubation, increased nest failures due to predation and nest abandonment (Valente and Fischer, 2011). These factors could affect the demographic characteristics of the population. Repeated or prolonged disturbance within breeding bird foraging zones may result in reduced opportunities for catching prey items nesting success and chick production.

3.3.2.1 Sites in the vicinity of Scot-NI 3

Outer Ards SPA, Ramsar and ASSI
Conservation objectives (Enlander and Wright, 2015a)

- To maintain or enhance the population of the qualifying species;
- Fledging success sufficient to maintain or enhance population;
- To maintain or enhance the range of habitats utilised by the qualifying species;

- To ensure that the integrity of the site is maintained;
- To ensure there is no significant disturbance of the species; and
- To ensure 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

(Note: Outer Ards ASSI objectives are the same as the listed Outer Ards SPA objectives)

Assessment against conservation objectives

The application corridor for Scot-NI 3 crosses through the Outer Ards SPA and ASSI for approximately 0.26 km. The site primarily covers a large extent of intertidal coastline, extending from Grey Point on the north Down coast to Ballyquintin Point further south (DAERA, 2015a). The SPA is designated for breeding Arctic tern (209 breeding pairs) and wintering populations of light-bellied brent goose (209 individuals), golden plover (2109 individuals), turnstone (1210 individuals) and ringed plover (516 individuals) (DAERA, 2015a). In addition, the ASSI designates the site for great cormorant (221 individuals), curlew (917 individuals), dunlin (2239 individuals), eider (475 individuals), great crested grebe (82 individuals), lapwing (5379 individuals), oystercatcher (1623 individuals), purple sandpiper (78 individuals), and redshank (904 individuals) (DAERA, 2015a). The landfall site is located within Sector 15 of the larger 'Outer Ards Shoreline' defined by the Wetland Bird Survey (WeBS). WeBS data indicates that of the designated species, the most common within the landfall site are black-headed gull, lapwing, oystercatcher, redshank, and common gull, with most birds being present between November and January. Further information on the numbers of birds within WeBS Sector 15 is detailed in Appendix B of this report.

There exists the potential for installation activities to temporarily disturb wintering or breeding birds within the application corridor that may be utilising the intertidal area at the Donaghadee landfall for feeding purposes. This landfall however is located close to the town of Donaghadee itself and its associated harbour. As such, birds at this site will be habituated to an existing level of human disturbance both on land and offshore from vessels transiting to and from Donaghadee harbour (approximately 2 km). The temporary presence of additional vessels during the one-off cable installation will not represent a significant change in the underlying baseline levels of anthropogenic activity in the area. As the cable will be making landfall at this location, the speed of the vessels will be minimal, with vessels appearing stationary to any nearby birds.

Installation activities, comprising construction workers and beach equipment, will be a temporary and small-scale activity, taking place within the Outer Ards SPA/ASSI for 3-5 days in the intertidal area and occupying only approximately 0.005% of the overall site. As such, there exists a wide extent of alternative habitat for birds within this site to utilise during the temporary cable installation activities. The beach profile will be restored after the cable burial has been completed, ensuring that the existing habitat will be returned to its original state. The distribution and extent of habitat, and its structure, function and supporting processes, utilised by the qualifying bird species will not be affected by the proposed activities.

There is a seal haul out located at Kinnegar Rocks, which is found within approximately 50m of the Donaghdee landfall site (NIEA, 2020). Seals found hauled-out are more susceptible from anthropogenic disturbance than when in the water, flushing out into the water when a vessel passes within 300m-500m of the site (Wilson, 2005). This behaviour is typically observed from vessels in motion, however. While installation activities (presence of construction workers and beach equipment) at the Donaghadee landfall site will occur over approximately 3 days, the actual landing

itself (floating in of cable) is likely to be completed within one day. The Main Lay Vessel (MLV) will be standing off at around the 13m depth contour during this period, approximately 450m from the haul-out site. As such, there will be no rapid movements occurring close to the haul-out site that may disturb any seals hauled-out.

Vessel density around the haul out site indicates that 201-300 vessels pass through the area each year (NIMM 2020). The addition of the MLV vessel and shore support vessel will not significantly increase the vessel traffic in the area. Therefore, seals are likely to be somewhat habituated to vessel activity in the area.

During the shore end installation at Donaghdee, the installation vessel will stand off in a stationary position at the 13m water depth contour while the cable is landed and buried within the intertidal area. The 13m depth contour is approximately 450m from the seal haul out location. There may be a low-level of disturbance when the MLV first arrives at the landfall site however, the intertidal installation activities themselves will not cause significant disturbance to the population at this location. Works in the intertidal area will take up to 3-5 days. The works will not create a barrier to the seals entering the water or searching for prey items. The stationary vessel is likely to be present for only one day and is unlikely to cause significant disturbance to the seal haul out.

The proposed installation activities will not lead to a loss in foraging habitat for the bird features of the site, with alternative areas for feeding being unaffected by the Project. The distribution of the qualifying features within the site will not be affected. As such, there will be no significant effects to the qualifying features and the conservation objectives of the Outer Ards SPA/ASSI will not be adversely affected.

Screening Conclusion: No potential for LSE/AA not required.

Strangford Lough SPA, Ramsar and ASSI Part 1, 2 and 3
Conservation objectives (Enlander and Wright, 2015b)

- To maintain or enhance the population of the qualifying species;
- Fledging success sufficient to maintain or enhance population;
- To maintain or enhance the range of habitats utilised by the qualifying species;
- To ensure that the integrity of the site is maintained;
- To ensure there is no significant disturbance of the species; and
- To ensure 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

Assessment against conservation objectives
The proposed installation activities for Scot-NI 3 are located approximately 9.9 km from Strangford Lough SPA and ASSI Part 1, 2 and 3. Strangford Lough is a large shallow sea lough located on the east coast of NI. The shoreline of the lough is indented and features a wide range of marine and intertidal habitats, including extensive areas of mudflats along with areas of sandflats, saltmarsh, and rocky coastline. The SPA is designated for breeding Arctic tern, sandwich tern and common tern (DAERA, 2015b). The same species are features of interest for the three ASSI's, alongside roseate tern and cormorant (screened in in Section 3.2.3).

Installation activities are located outside of the mean foraging distance for each of the designating features of the SPA and ASSIs (Woodward *et al.*, 2019). As such, these species will not be found in significant numbers within the application corridor. As such, in conjunction with the slow moving and temporary nature of the installation activities, the Arctic, common, sandwich and roseate tern and cormorant will not be significantly disturbed, and their population will be maintained in the long-term. The proposed installation activities will not affect the habitat of Strangford Lough SPA and ASSI Part 1, 2 and 3, ensuring the habitat utilised by the qualifying species is maintained.

Screening Conclusion: No potential for LSE/AA not required.

Copeland Islands SPA and ASSI
Conservation objectives

- To maintain or enhance the population of the qualifying species.
- Fledging success sufficient to maintain or enhance population.
- To maintain or enhance the range of habitats utilised by the qualifying species
- To ensure that the integrity of the site is maintained
- To ensure there is no significant disturbance of the species and
- To ensure that the following are maintained in the long term

Assessment against conservation objectives
The proposed installation activities for Scot-NI 3 are located approximately 5.5 km from Copeland Islands SPA and ASSI. Copeland Islands are a collection of islands off the East coast of NI. The site comprises of rocky shores, together with limited areas of sand/mud and cobbler/boulder beaches, with salt and freshwater marshes and maritime grasslands. The principal interests of the SPA are the breeding colonies of Manx shearwater and Arctic tern (DAERA, 2009). The ASSI is designated for these species alongside common gull, eider duck, Mediterranean gull, black guillemot, and black-headed gull.

Eider duck and black guillemot have a mean foraging distance of 3.2 km and 4.97 km (mean max.) respectively, and as such are unlikely to be found foraging in significant numbers within the application corridor (Woodward *et al.*, 2019; Owen, 2015). Manx shearwater, Arctic tern, common gull, Mediterranean gull and black-headed gull have a mean foraging distance of 6.1 km, 25 km, 11.5 km and 7 km respectively and so may potentially be found foraging with the application corridor (Woodward *et al.*, 2019). Manx shearwater, Arctic tern, common gull, Mediterranean gull and black-headed gull are however considered to have a low sensitivity to visual disturbance from vessel movements (NatureScot, 2017; JNCC, 2017). As such, in conjunction with the slow moving and temporary nature of the installation activities, the designating features will not be significantly disturbed, and their population will be maintained in the long-term. The proposed installation activities will not affect the habitat of Copeland Islands SPA and ASSI, ensuring the habitat utilised by the qualifying species is maintained.

Screening Conclusion: No potential for LSE/AA not required.

Belfast Lough SPA and Ramsar
Conservation objectives

- To maintain or enhance the population of the qualifying species
- To maintain or enhance the range of habitats utilised by the qualifying species
- To ensure that the integrity of the site is maintained
- To ensure there is no significant disturbance of the species

- To ensure that the following are maintained in the long term

Assessment against conservation objectives

The application corridor for Scot-NI 3 and 4 are located approximately 14.5 km and 18.3 km from Belfast Lough SPA, respectively. Belfast Lough is a large intertidal sea lough situated at the mouth of the River Lagan on the east coast of Northern Ireland. The inner part of the lough comprises a series of mudflats and lagoons. The outer lough is restricted to mainly rocky shores with some small sandy bays. The site is designated for regularly supporting an internationally important overwintering population of redshank, breeding populations of common and Arctic tern and non-breeding populations of black-tailed godwit and bar-tailed godwit. The Belfast Lough SPA also regularly supports nationally important populations of shelduck, oystercatcher, purple sandpiper, dunlin, curlew and turnstone. The area is also used by a variety of waterfowl species such as great crested grebe, scaup, eider, goldeneye, and red-breasted merganser (DAERA, 2019).

The qualifying species of redshank, black-tailed godwit and bar-tailed godwit are wading species that typically feed in the intertidal area (The Wildlife Trusts, 2020)). As such, these wading species will not be found within the application corridor. Due to the distance from which this site is located from the proposed application corridors, the potential for individuals from this site to be found feeding within the path of the installation activities is minimal. As such there will be no significant disturbance of the species from this site, and their population will continue to be maintained. The proposed installation activities will not affect the habitat of Belfast Lough SPA, ensuring the habitat utilised by the qualifying species is maintained.

Screening Conclusion: Screening Conclusion: No potential for LSE/AA not required.

The Gobbins ASSI

Assessment of protected features

The application corridors for Scot-NI 3 and Scot-NI 4 pass the Gobbins ASSI at distance of approximately 8.6 km and 21.1 km, respectively. The Gobbins cliffs are of significant geological importance, with notable maritime plant and seabird species. The basalt cliffs at the Gobbins reach up to 60m in height.

During the Seabird 2000 survey, the Gobbins held 1.6% and 1.1% respectively of all of Ireland's population if black legged kittiwake and razorbill. Furthermore, the Gobbins hold the only nesting Atlantic puffin in NI, as well as significant populations of Northern fulmar, common shag, common cormorant and common guillemot. Peregrine falcon has also been found to breed in the area.

The birds classified as features of interest within the Gobbins ASSI have widely varying foraging distances, with fulmar foraging the furthest at an average of 69 km (Natural England, 2012). Although five of the bird species' foraging distances overlap both application corridors, all have a relatively low susceptibility to disturbance, except for cormorant. Although cormorant may be more susceptible to disturbance, cable installation will be a temporary activity with vessels travelling at a slow speed of 600 metres per hour. At this speed the vessel will appear stationary to nearby birds and thus will not lead to significant disturbance of any individuals nearby (Hill *et al.*, 1997; Natural England and Suffolk Coast and Heaths, 2012). As such, any disturbance events will be temporary in nature and not lead to a significant effect on the features of the Gobbins ASSI. The proposed installation activities will not affect the habitat of The Gobbins ASSI, ensuring the habitat utilised by the qualifying species is maintained.

Screening Conclusion: The proposed activities will not negatively impact the integrity of The Gobbins ASSI.

3.3.2.2 Sites in the vicinity of Scot-NI 3 and Scot-NI 4

East Coast Marine pSPA
Conservation objectives

- To maintain or enhance the population of the qualifying species
- To maintain or enhance the range of habitats utilised by the qualifying species
- To ensure that the integrity of the site is maintained
- To ensure there is no significant disturbance of the species
- To ensure that the following are maintained in the long term

Assessment against conservation objectives

The application corridor for Scot-NI 3 and 4 are located within the East Coast Marine pSPA. This area has been selected as a SPA due to its significant populations of sandwich, common and Arctic tern that feed there during the breeding season. Furthermore, the East Coast Marine pSPA is important for breeding Manx Shearwater populations, as the species often use the area for rafting in the evenings, due to its proximity to the Copeland Islands SPA. The other principal interests of the site are the non-breeding populations of red-throated diver and great crested grebe.

Arctic, sandwich and common tern are considered to have low sensitivity to disturbance from vessel presence (NatureScot, 2017; Fliessbach *et al.*, 2019), displaying only slight avoidance behaviours at short-range (Furness *et al.*, 2012). As such they will not be significantly disturbed by installation activities through the pSPA. The Manx shearwater population within the site is the population found at the Copeland Island SPA. As described in the assessment of the site above, the potential for individuals from this colony to be found foraging or rafting within the application corridor is minimal. The species also has a very low susceptibility to disturbance (JNCC, 2017), so should any individuals be found within the application corridor they will not be significantly disturbed.

Both red-throated diver and great crested grebe are highly susceptible to visual disturbance (JNCC, 2017). The populations of both species in the East Coast Marine pSPA are located within the Belfast Lough SPA (DAERA, 2016a). As the proposed installation routes of both Scot-NI 3 and 4 are found a large distance from this site (14.5 km and 18.3 km around the coast respectively), there is no direct pathway for disturbance between installation activities and these populations. Additionally, the small spatial and temporal impact of the installation activities means that the timeframe for any disturbance event to occur within the site is minimal. As such, red-throated diver and great crested grebe will not be significantly disturbed by the installation activities of either Scot-NI 3 or Scot-NI 4. The proposed installation activities will not reduce the range of habitat available within the East Coast Marine pSPA for its qualifying species, ensuring its extent is maintained.

Screening Conclusion: Screening Conclusion: No potential for LSE/AA not required.

3.3.2.3 Sites in the vicinity of Scot-NI 4

Ailsa Craig SPA
Conservation objectives

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.

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
- No significant disturbance of the species

Assessment against conservation objectives

The application corridor for Scot-NI 4 is located approximately 0.76 km south of the Ailsa Craig SPA. Ailsa Craig SPA, located within the Firth of Clyde, encompasses the island of Ailsa Craig and its surrounding waters, out to approximately 2 km. The island itself rises to 338 m above sea level and provides habitat for a variety of bird species. The site is home to internationally important breeding colonies of northern gannet (23,000 pairs, 8.7% of the global population) and lesser black-backed gull (1,800 pairs, 1.4% of the global population) (SNH, 2009). Also present on the island are nationally important populations of common guillemot (3,350 pairs), black-legged kittiwake (3,100 pairs) and herring gull (2,250 pairs).

The Scot-NI 4 application corridor installation passes approximately 2.61 km from the island of Ailsa Craig itself. As non-diving birds typically display a visual disturbance response from pressures up to 2 km away (JNCC, 2017), cable installation activities will not disturb the birds within their breeding colonies. However, due to the proximity to the SPA, installation activities could lead to disturbance when birds are foraging at sea. Of the qualifying interest features the site is designated for, common guillemot and northern gannet are the most susceptible to disturbance, with the other species typically being more resilient to disturbance events (JNCC, 2017).

Installation activities which will be within 2 km of the SPA boundary will be temporary, leading to no further disturbance events. Additionally, the presence of slow-moving installation vessels will not represent a significant increase in vessel traffic in relation to the baseline levels present. As such, it is likely that birds from Ailsa Craig are habituated to the current levels of vessel activity in the area. As , the speed of the installation vessel will be minimal (approximately 600 m/hour), it will appear stationary to any nearby birds (Hill *et al.*, 1997; Natural England and Suffolk Coast and Heaths, 2012).

The proposed installation activities will not lead to a loss in foraging habitat for the bird features of the site, with alternative areas for feeding being unaffected by the Project. The population distribution of the features will not be affected. As such, there will be no significant effects to the sites' bird features and the conservation objectives of Ailsa Craig SPA will not be adversely affected.

Screening Conclusion: No potential for LSE/AA not required.

Larne Lough SPA, Ramsar and ASSI
Conservation objectives (Enlander and Wright, 2015b)

- To maintain each feature in favourable condition.
- To maintain or enhance the population of the qualifying species
- Fledging success sufficient to maintain or enhance population
- To maintain or enhance the range of habitats utilised by the qualifying species
- To ensure that the integrity of the site is maintained
- To ensure there is no significant disturbance of the species and
- To ensure 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.

Assessment against conservation objectives

The application corridor for Scot-NI 4 is located approximately 4.1 km from Larne Lough SPA and ASSI. Larne Lough is a large shallow sea lough located on the east coast of NI. The shoreline of the lough is indented and features a wide range of marine and intertidal habitats, including extensive areas of mudflats along with areas of sandflats, saltmarsh, and rocky coastline. The site is designated for breeding populations of sandwich tern, roseate tern, common tern, and Mediterranean gull, along with the wintering population of light-bellied Brent goose (DAERA, 2015b). Larne Lough ASSI is designated for these features alongside Arctic tern (screened in Section 3.2.3 previously).

The proposed application corridor for Scot-NI 4 does not route through or in the vicinity of Larne Lough SPA itself. As such the installation activities will not disturb any individuals within the site itself, with the only potential pathway for disturbance being that of birds foraging in the path of the installation vessel. Light-bellied Brent goose typically feed onshore and inland from the SPA's in which they are designated for (Rowell and Robinson, 2004). As such the potential for this species to be found foraging within the application corridor is minimal.

Each of the designated tern species' foraging ranges also overlap with the application corridor, so may be found foraging within/in the vicinity of the installation vessel. Each of these species are considered to have a low sensitivity to vessel traffic (Fliessbach *et al.*, 2019; Furness *et al.*, 2012), at most displaying slight avoidance behaviour at short range. As such, in conjunction with the slow moving and temporary nature of the installation activities, the populations of sandwich tern, roseate tern, common tern, Arctic tern and light-bellied Brent goose will not be significantly disturbed, and their population will be maintained in the long-term. The proposed installation activities will not affect the habitat of Larne Lough SPA and ASSI, ensuring the habitat utilised by the qualifying species is maintained.

Screening Conclusion: No potential for LSE/AA not required.

Clyde Sea Sill NCMPA
Conservation objectives

Conserve the protected features of the Clyde Sea Sill NCMPA.

Assessment against conservation objectives

The application corridor for Scot-NI 4 crosses through the Clyde Sea Sill NCMPA for approximately 22 km. The identified protected feature of this site which has the potential to be visually disturbed by cable installation activities is the breeding colony of black guillemot. This colony is found in the north-west of the site, with individuals from the colony utilising the rich feeding grounds around Sanda, Sheep Island and Glunimore Island (SNH, 2014). Unlike other Auk species that typically feed offshore, black guillemot typically feed close to their breeding grounds and rarely travel long distances from such locations (SNH, 2014). Due to their tendency to feed close to their breeding grounds, black guillemot has been found to be vulnerable to disturbance from transiting vessels, with a 2002 study recommending that a set-back distance of 600m from any foraging seabirds, at a speed of 25 km/h, would reduce flushing probability to 10% the majority of the time (Ronconi and Clair, 2002).

The Scot-NI 4 application corridor crosses through the southern section of the NCMPA site, approximately 15 km from Sanda, Sheep Island and Glunimore Island, respectively. As such, the likelihood of black guillemot feeding within the application corridor is low given the long distance from their breeding grounds and the productive feeding grounds that surround the islands. Additionally, installation activities within the NCMPA will be temporary in nature, with activities taking approximately 37 hours to complete within the site's boundaries.

The proposed installation activities will not lead to a loss in foraging habitat for black guillemot, with alternative areas for feeding being unaffected by the Project. The population distribution of the species will not be affected. As such, there will be no significant effects to black guillemot and the conservation objectives of the Clyde Sea Sill NCMPA will not be adversely affected.

Screening Conclusion: The proposed activities will not negatively impact the integrity of Clyde Sea Sill NCMPA.

The Maidens ASSI
Assessment of protected features

The application corridor for Scot-NI 4 passes The Maidens ASSI at approximately 2.15 km. The site consists of two low lying islands and a series of rock platforms, which together are utilised by a resident breeding European shag colony.

European shag have a mean foraging range of 9.2 km, and so may potentially be found foraging within the Scot-NI 4 application corridor (Woodward *et al.*, 2019). European shag are considered to be moderately sensitive to vessel traffic (JNCC, 2017). Installation activities will be a temporary activity occurring over a 24-hour basis, and so will transit through any feeding areas utilised by European shag in a short period of time. In addition, the installation vessel will be travelling at speeds of approximately 600m/hour, and so will appear effectively stationary to nearby birds, reducing its disturbance effect (Hill *et al.*, 1997; Natural England and Suffolk Coast and Heaths, 2012). As such, while individual birds may be temporarily disturbed by the installation activities, they will be able to quickly return to any utilised feeding areas. The populations of European shag will not be significantly disturbed and will remain viable components of The Maidens ASSI. The proposed installation activities will not affect the habitat of The Maidens ASSI, ensuring the habitat utilised by the qualifying species is maintained.

Screening Conclusion: The proposed activities will not negatively impact the integrity of Portmuck ASSI.

Portmuck ASSI
Assessment of protected features

The application corridor for Scot-NI 4 passes the Portmuck ASSI at distance of approximately 6.5 km. Breeding colonies of razorbill, common guillemot, Atlantic puffin, black legged kittiwake, and northern fulmar are present within the site. These species breed on the on the Isle of Muck, located approximately 0.18 km from the mainland.

Each of the designating features for Portmuck ASSI have a mean foraging range that overlaps with the application corridor (Woodward *et al.*, 2019). Black legged kittiwake and northern fulmar are considered to have a low sensitivity to vessel traffic (JNCC, 2017) so will not be significantly disturbed by the installation activities. Atlantic puffin, razorbill and common guillemot however are considered to be moderately disturbed by vessel traffic (JNCC, 2017), with these species seeing moderate to high proportions of observed disturbance behaviours in response to vessel traffic in a 2019 study (Fliessbach *et al.*, 2019). Installation activities will be a temporary activity occurring over a 24-hour basis, and so will transit through any feeding areas utilised by these species in a short period of time. As such, while individual birds may be temporarily disturbed by the installation activities, they will be able to quickly return to any utilised feeding areas. The populations of Atlantic puffin, razorbill and common guillemot will not be significantly disturbed and will remain viable components of Portmuck ASSI. The proposed installation activities will not affect the habitat of Portmuck ASSI, ensuring the habitat utilised by the qualifying species is maintained.

Screening Conclusion: The proposed activities will not negatively impact the integrity of Portmuck ASSI.

3.3.3 Changes in supporting habitat and prey availability

The protected sites identified during the screening process as having qualifying interests which may be sensitive to changes in supporting habitat and prey availability from the proposed activities are:

- North Channel SAC (Scot-NI 3)
- Outer Ards SPA and ASSI (Scot-NI 3)
- East Coast Marine pSPA (Scot-NI 3 and 4)
- The Maidens SAC (Scot-NI 4)
- Clyde Sea Sill NCMPA (Scot-NI 4)

3.3.3.1 Sites in the vicinity of Scot-NI 3

North Channel SAC
Conservation objectives

- To ensure that the integrity of the site is maintained and that it makes an appropriate contribution to maintaining Favourable Conservation Status (FCS) for harbour porpoise in UK waters.

Assessment against conservation objectives
North Channel SAC is designated for the protection of the resident harbour porpoise population, with the area being an important winter habitat for the species, supporting an estimated 1.2% of the overall UK Celtic and Irish Seas Management Unit (MU) population (JNCC, 2020). The site spans an area of 1,604 km².

The application corridor for Scot-NI 3 routes through the North Channel SAC for approximately 20.7 km. With installation activities occupying a maximum width of 0.5m on the seabed along this route, the application corridor will temporarily disturb an area of approximately 0.01 km². Although sediment will be dispersed to either side of the cable trench, it will have a limited extent (less than 10m either side) (Gooding et al. 2012) and deposition thicknesses will be negligible (<5cm in the immediate area and less than 1mm further from the corridor). This is in addition to the crossing of the Western HVDC Link cable which occurs within the SAC, which in the worst-case contingency scenario[3] may require 0.001957 km² of rock placement for additional protection. Therefore, the total area occupied by installation activities will be 0.011957 km². This represents 0.0007% of the total area of the North Channel SAC. As such, the change in supporting habitat will be negligible and prey availability will not be affected. The integrity of North Channel SAC will be maintained, and the FCS of harbour porpoise in UK waters will be maintained.

Screening conclusion: No potential for LSE/AA not required.

Outer Ards SPA and ASSI
Conservation objectives (Enlander and Wright, 2015a)

- To maintain or enhance the population of the qualifying species;
- Fledging success sufficient to maintain or enhance population;
- To maintain or enhance the range of habitats utilised by the qualifying species;
- To ensure that the integrity of the site is maintained;

[3] The proposed installation measures as well as contingency external cable protection measures are discussed in the MEA report, Section 2 Project Description. High Density Polyethylene (HDPE) Protection, Uraduct ®, is currently the only planned integral cable protection method for all of the Scot-NI 3 and Scot-NI 4 cable crossings. Whilst additional external protection such as rock bags are not expected or planned, a number have been included as a 'worst case' contingency.

- To ensure there is no significant disturbance of the species; and
- To ensure 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

(Note: Outer Ards ASSI objectives are the same as the listed Outer Ards SPA objectives)

Assessment Against Conservation Objectives

The Outer Ards SPA and ASSI covers an area of approximately 14.1041 km². The application corridor for Scot-NI 3 routes through the site for approximately 260m, with a maximum width of 0.5m. As such, the application corridor will temporarily disturb an area of 0.00013 km², accounting for approximately 0.0009% of the overall area of the site. Therefore, the change in supporting habitat will be negligible and prey availability will not be affected. The distribution and extent of the existing habitat of the site will be maintained, and the integrity of the Outer Ards SPA and ASSI will be maintained.

Screening conclusion: No potential for LSE/AA not required.

3.3.3.2 Sites in the vicinity of Scot-NI 3 and Scot-NI 4

East Coast Marine pSPA
Conservation objectives

- To maintain or enhance the population of the qualifying species
- To maintain or enhance the range of habitats utilised by the qualifying species
- To ensure that the integrity of the site is maintained
- To ensure there is no significant disturbance of the species
- To ensure that the following are maintained in the long term

Assessment against conservation objectives

The East Coast Marine pSPA, in its current form, is proposed to be approximately 966.7 km² in extent. The pSPA, if approved, would subsume the existing Larne Lough SPA, Belfast Lough SPA, Outer Ards SPA, Copeland Islands SPA and Strangford Lough SPA. Given that the application corridors have been shown in this report to occupy a negligible area within the existing sites they route through, they would temporarily disturb an imperceptible area of seabed in comparison to the full extent of this pSPA. Therefore, the change in supporting habitat will be negligible and prey availability will not be affected. The distribution and extent of the existing habitat of the site will be maintained, and the integrity of the East Coast Marine pSPA will be maintained.

Screening conclusion: No potential for LSE/AA not required.

3.3.3.3 Sites in the vicinity of Scot-NI 4

The Maidens SAC
Conservation objectives

- Maintain and enhance, as appropriate the extent of the reefs.
- Allow the natural processes which determine the development, structure, function, and distribution of the habitats associated with the reefs, to operate appropriately.

- Maintain and enhance, as appropriate, the viability, distribution, and diversity of typical species within this habitat.

Assessment against conservation objectives

The Maidens SAC is designated for a large area of Annex I reef habitat, primarily bedrock reef. Bedrock reef has a high sensitivity to physical change. The Scot-NI 4 application corridor transits through the Maidens SAC for approximately 6.9 km. Within The Maidens SAC, Annex 1 Reef habitat is estimated to cover 43.1 km² of the entire site, accounting for 58% of its total area (DAERA, 2012). Due to the presence of Annex I reef habitat, articulated pipe will not be used within the Maidens SAC. The magnitude of this physical change will therefore be negligible, owing to the minor extent of habitat that would be crossed relative to the wider extent of the surrounding habitat. Therefore, the change in supporting habitat will be negligible and prey availability will not be affected. The distribution and extent of the existing habitat of the site will be maintained, and the integrity of the Maidens SAC will be maintained.

Screening conclusion: No potential for LSE/AA not required.

Clyde Sea Sill NCMPA
Conservation objectives

Conserve the protected features of the Clyde Sea Sill NCMPA.

Assessment against conservation objectives

The Clyde Sea Sill NCMPA covers a total area of 711.86 km², of which approximately 390 km² is occupied by the circalittoral and offshore sand and coarse sediment communities designating feature. The Scot-NI 4 application corridor routes through the site for approximately 20.2 km. This route is proposed to cross the Western HVDC Link cable, which is found within the NCMPA, which in the worst-case contingency scenario[4] require 0.0016875 km² of rock placement for additional protection. Therefore, the total area occupied by installation activities will be 0.011788 km². This equates to 0.002% of the total area of the Clyde Sea Sill NCMPA, or 0.003% of the total area of the dominant circalittoral and offshore sand and coarse sediment communities habitat, should the route exclusively pass through this community. As such, the change in supporting habitat will be negligible and prey availability will not be affected. The distribution and extent of the existing habitat of the site will be maintained, and the integrity of the Clyde Sea Sill NCMPA will be maintained.

Screening Conclusion: The proposed activities will not negatively impact the integrity of Clyde Sea Sill NCMPA.

3.3.4 Siltation rate changes (including smothering)

3.3.4.1 The Maidens SAC

Conservation objectives

- Maintain and enhance, as appropriate the extent of the reefs.
- Allow the natural processes which determine the development, structure, function, and distribution of the habitats associated with the reefs, to operate appropriately.
- Maintain and enhance, as appropriate, the viability, distribution, and diversity of typical species within this habitat.

[4] The proposed installation measures as well as contingency external cable protection measures are discussed in the MEA report, Section 2 Project Description. High Density Polyethylene (HDPE) Protection, Uraduct ®, is currently the only planned cable protection method for all of the Scot-NI 3 and Scot-NI 4 cable crossings. Whilst additional external protection such as rock bags are not expected or planned, a number have been included as a 'worst case' contingency.

Assessment against conservation objectives

The primary designating feature of the Maidens SAC are the large areas of Annex I reef habitat present within its boundaries. The majority of the reef area is classified as Bedrock Reef, with a smaller proportion of stony reef also being present (DAERA, 2017). This reef is itself classified as 'A' grade, being an example of a 'Site holding outstanding examples of the habitat in a European context' (DAERA, 2017).

The application corridor for Scot-NI 4 crosses directly through The Maidens SAC, towards the southern edge of the site boundary. It is currently unknown the extent, if any, of Annex I reef habitat that the application corridor crosses within the site. Sand and gravel, suspended by the installation process, will settle out of suspension within proximity of the cable route, (within less than 10m either side) (Gooding et al. 2012) and deposition thicknesses will be negligible (<5cm in the immediate area). Silt and finer particles will be dispersed further and can travel many kilometres before settling, but settling depths are imperceptible (<1mm) to existing inhabitants of the reef and will not lead to any adverse effects on the reef. The thickness of sand and gravel deposition will depend on the particle size distribution of the sediments. Where the cable is installed across Bedrock or Stony Reef it is unlikely to be buried, instead being surface laid. The surface laying of cable will generate negligible levels of suspended sediment. While the reef habitat sensitivity to siltation rate changes is high, the magnitude of the effect will be negligible give minimal spatial and temporal nature of the disturbance, ensuring the natural process of the site will continue to operate as normal. The extent of the reef, and the viability, distribution, and diversity of typical species within the site, will continue to be maintained.

Screening Conclusion: No significant effects to the conservation objectives of this site are expected.

3.3.5 Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion

Clyde Sea Sill NCMPA

Conservation objectives

Conserve the protected features of the Clyde Sea Sill NCMPA.

Assessment against conservation objectives

The Clyde Sea Sill NCMPA covers a total area of 711.86 km², of which approximately 390 km² is occupied by the circalittoral and offshore sand and coarse sediment communities designating feature. The Scot-NI 4 application corridor routes through the site for approximately 20.2km. This route is proposed to cross the Western HVDC Link cable, which is found within the NCMPA, which in the worst-case scenario[5] may require 0.0016875 km² of rock placement for additional protection. Therefore, the total area occupied by installation activities will be 0.011788 km². This equates to 0.002% of the total area of the Clyde Sea Sill NCMPA, or 0.003% of the total area of the dominant circalittoral and offshore sand and coarse sediment community's habitat, should the route exclusively pass through this community. As such, there will be no likely significant effect on the seabed habitat within Clyde Sea Sill NCMPA from penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion. The distribution and extent of the existing habitat of the site will be maintained, and the integrity of the Clyde Sea Sill NCMPA will be maintained.

Screening Conclusion: The proposed activities will not negatively impact the integrity of Clyde Sea Sill NCMPA.

[5] The proposed installation measures as well as contingency external cable protection measures are discussed in the MEA report, Section 2 Project Description. High Density Polyethylene (HDPE) Protection, Uraduct ®, is currently the only planned cable protection method for all of the Scot-NI 3 and Scot-NI 4 cable crossings. Whilst additional external protection such as rock bags are not expected or planned, a number have been included as a 'worst case' contingency.

3.3.6 Physical change (to another seabed type)

3.3.6.1 The Maidens SAC

Conservation objectives

- Maintain and enhance, as appropriate the extent of the reefs.
- Allow the natural processes which determine the development, structure, function, and distribution of the habitats associated with the reefs, to operate appropriately.
- Maintain and enhance, as appropriate, the viability, distribution, and diversity of typical species within this habitat.

Assessment against conservation objectives

The Maidens SAC is designated for a large area of Annex I reef habitat, primarily bedrock reef. Bedrock reef has a high sensitivity to physical change. The Scot-NI 4 application corridor transits through the Maidens SAC for approximately 6.9 km. In the worst-case scenario where surface laying is required across the entirety of the route within The Maidens SAC, the cable would occupy an area of 0.001 km². Within The Maidens SAC, Annex 1 Reef habitat is estimated to cover 43.1 km² of the entire site, accounting for 58% of its total area (DAERA, 2012). As such, in a worst-case scenario the cable would occupy 0.0023% of the total area of estimated reef present. The magnitude of this physical change will therefore be negligible, owing to the minor extent of habitat that would be crossed relative to the wider extent of the surrounding habitat. As such, the natural processes of the habitat will continue to operate appropriately, with the viability, distribution, and diversity of typical species in the site being unaffected. The extent of the reef will be maintained, and the sites conservation objectives will not be affected.

Screening Conclusion: No significant effects to the conservation objectives of this site are expected.

3.3.6.2 Clyde Sea Sill NCMPA

Conservation objectives

Conserve the protected features of the Clyde Sea Sill NCMPA.

Assessment against conservation objectives

The Clyde Sea Sill NCMPA covers a total area of 711.86 km², of which approximately 390 km² is occupied by the circalittoral and offshore sand and coarse sediment communities designating feature. This route is proposed to cross the Western HVDC Link cable, which is found within the NCMPA, which in the worst-case scenario[6] may require 0.0016875 km² of rock placement for additional protection. This equates to 0.0002% of the total area of the site, or 0.0004% of the total area of the dominant circalittoral and offshore sand and coarse sediment communities habitat, should the crossing occur within this habitat feature. As such, the any physical change to the seabed will be negligible in the context of the overall area of the site. The protected features of the Clyde Sea Sill NCMPA will continue to be conserved.

Screening Conclusion: The proposed activities will not negatively impact the integrity of Clyde Sea Sill NCMPA.

[6] The proposed installation measures as well as contingency external cable protection measures are discussed in the MEA report, Section 2 Project Description. High Density Polyethylene (HDPE) Protection, Uraduct ®, is currently the only planned cable protection method for all of the Scot-NI 3 and Scot-NI 4 cable crossings. Whilst additional external protection such as rock bags are not expected or planned, a number have been included as a 'worst case' contingency.

3.3.7 In-combination assessment

The HRA process and MPA Assessment process requires that plans or projects are assessed in-combination with other plans or projects. Only plans or projects that would increase the likelihood of significant effects should be considered. Protected sites within the vicinity of the application corridor that may be affected by Potential Cumulative Effects (PCE) include the North Channel SAC, Outer Ards SPA, East Coast Marine pSPA, The Maidens SAC and Clyde Sill NCMPA.

The nature of a linear telecommunications cable project means that in most cases the effects that result from the potential pressures will be short term and localised. In the case of the proposed installation activities, all effects will be restricted to the zones of influence either side of the proposed installation activities. An initial area of search of 10 km been applied either side of the installation area to identify plans and projects for inclusion within this assessment.

For there to be a PCE between the proposed installation activities and another project, plan, or licensed activity there must be a common pressure-receptor pathway. A screening exercise was undertaken, presented below, to determine if any of the projects, plans and activities identified have:

- A common-pressure receptor pathway with the Project;
- Activities, the effects of which overlap spatially with the Project; and
- Activities, the effects of which overlap temporally with the Project.

To identify the potential for cumulative effects of the Scot-NI cables project the following information sources have been reviewed and plotted on to GIS (Figure 3-4, Drawing P2302-CUMU-001-A):

- SEAFISH Kingfisher Bulletin
- UKDEAL: Oil and gas industry information;
- Oil and Gas Authority: Oil and gas industry information;
- KIS-ORCA: Marine cables information; and
- The Crown Estate Website: Offshore wind farm and marine aggregate digital data.

In addition, a review of the Marine Scotland Marine Licence Applications Public Register and DAERA Marine Licensing Public Register, the Marine Scotland NMPi, and the Northern Ireland Marine Mapviewer was undertaken in October 2020 to identify projects to be included in the assessment. A review of the Scottish sources did not identify any projects that should be considered by the assessment as either the projects were outside the search area or did not induce a similar pressure to the Project. Two marine renewable resource zones were in proximity to Scot-NI 3 and Scot-NI 4 application corridors were identified on the Northern Ireland Marine Mapviewer:

- Offshore Renewable Energy Strategic Action Plan Tidal Resource Zone 4 – located 1 km north of Scot-NI 3.
- Offshore Renewable Energy Strategic Action Plan Tidal Resource Zone 3 – located 1.8 km north of Scot-NI 4.

Both renewable resources zones are located outside the assessment search area and the pressures resulting from Scot-NI 3 and Scot-NI 4 do not overlap with those pressures induced by tidal power. Therefore, there is limited potential for PCEs with Scot-NI 3 and Scot-NI 4 and these renewable energy zones are not considered further.

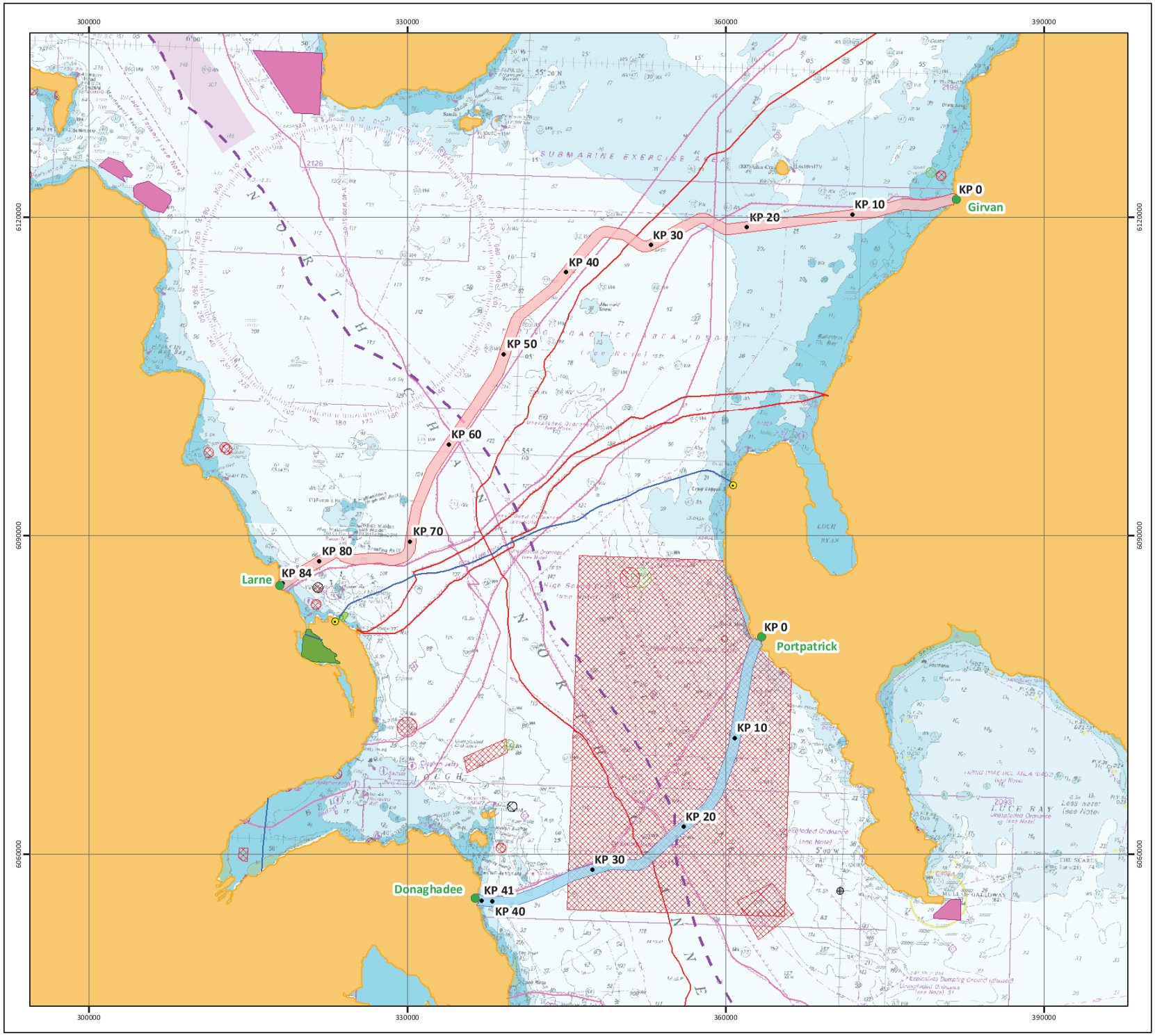
Commercial fisheries, shipping interests and recreational use has been scoped out of the list of projects as they are considered to represent baseline conditions, and are not considered as projects, plans or licensed activities. Any nearby infrastructure such as cables, pipelines and marine renewables are all in active operation and may undergo maintenance operations in the future. The timing of any

potential works is unknown and therefore no PCEs with these operations can be established at the time of writing.

There are currently no infrastructure activities relating to windfarms within the vicinity of either Scot-NI 3 or Scot-NI 4 within the North Channel, which the cables will cross. All offshore wind farms in the region are currently operational, with the closest wind farm to the application corridor being the 18 km distant. As such, there exists no common pressure-receptor pathway between cable installation activities and operational wind farms (Kingfisher, 2020).

Scot-NI 4 comes in proximity with the Scotland to Northern Ireland pipeline. The Scotland to Northern Ireland pipeline is an active 24" diameter pipeline operated by Mutual Energy, carrying natural gas (Oil & Gas Authority, 2020). As the pipeline has been completed and active for some time, no PCE's will occur.

The proposed routing for Scot-NI 3 passes by 5 disposal sites, the closest being a chemical munitions encounter, situated 3.5 km east of Scot-NI 3. Scot-NI 3 also runs through the Beauforts Dyke disposal area, off the coast of Scotland. The proposed route for Scot-NI 4 passes four disposal sites that are situated within 10 km of the cable. The closest of these four disposal sites is located approximately 1.75 km south of the cable. Furthermore, Scot-NI 4 is situated 4.9 km north of a Lease Gas Storage site at Larne Lough. As sand from the installation of Scot-NI 3 & 4 will be dispersed approximately 18m, there is no potential for a spatial overlap, and therefore no common pressure-receptor pathway, to occur as a result of this Project and the use of any disposal sites.



SCOTLAND - NORTHERN IRELAND TELECOMMUNICATION CABLES

CUMULATIVE EFFECTS
Other Marine Users & 5km ZOI

Drawing No: P2302-CUMU-001 | **B**

Legend

- Landfall Location
- KP
- SCOT-NI3 Proposed Cable Corridor
- SCOT-NI4 Proposed Cable Corridor
- Scotland/Northern Ireland Adjacent Waters Limit

Oil and Gas Infrastructure

- Well
- Terminal

Pipelines

- Active

Cables

- Power
- Telecom

Energy Infrastructure

- Tidal Lease
- Natural Gas Storage
- Natural Gas Pipeline

Disposal Sites

- Open
- Closed
- Disused

NOTE: Not to be used for Navigation

Date	17 November 2020
Coordinate System	WGS 1984 UTM Zone 30N
Projection	Transverse Mercator
Datum	WGS 1984
Data Source	UKHO; KISCA; OGA; CEFAS; TCE; CES; GEBCO; ESRI
File Reference	J:\P2302\Mxd\10_CUMU\ P2302-CUMU-001.mxd
Created By	Chris Dawe
Reviewed By	Emma Storey
Approved By	Paula Daglish

BT Global Marine intertek

0 5 10 15 20 km

3.4 Screening Statement and Conclusion

To determine whether the Project is likely to have a significant effect on any European sites, ASSIs or NCMPAs, either individually or in-combination with other plans or projects, Stage 1 Screening was carried out.

A review of the Project identified five pressures that could be exerted on Qualifying Features during installation operations. These were:

- Visual (and above water noise) disturbance;
- Changes in supporting habitat and prey availability;
- Physical change (to another seabed type);
- Siltation rate changes (Including smothering); and
- Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion

Sites were assessed to determine if there was a potential pressure-receptor pathway between the Project and the Qualifying Feature(s).

Initial screening concluded that it was considered possible that there exists a pressure-receptor pathway between the Project and the Qualifying features of the protected sites. Further analysis of the LSEs taking into consideration the sites conservation objectives concluded that there is no potential for an LSE on any European site assessed. As such, AA is not required. In addition, the Project will not hinder the conservation objectives of the NCMPAs, MCZs or ASSIs assessed and Stage 1 Assessment or Notification is not required.

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Appendix A

Bird foraging distances

Table A-1 Foraging distances of bird species from protected sites near Scot-NI 3

Species	Seabird foraging range (km)		Likely to be present	Protected site	Distance to Scot-NI 3 application corridor (km)
	Mean	Max			
Wintering birds					
Common eider *(Somateria mollissima)*	3.2	22	All year, Peak Oct - Dec	East Coast Marine pSPA	Within
				Outer Ards ASSI	Within
				Copeland Islands ASSI	5.5
				Belfast Lough Outer ASSI	14.3
Great Crested Grebe *(Podiceps cristatus)*	N/A	N/A	Winter	East Coast Marine pSPA	Within
				Outer Ards ASSI	Within
				Belfast Lough Outer ASSI	14.3
				Belfast Lough Open Water SPA	14.5
Great Cormorant *(Phalacrocorax carbo)*	7.1	35	May - Feb	Outer Ards ASSI	Within
Golden plover *(Pluvialis apricaria)*	N/A	N/A	Winter	Outer Ards SPA and Ramsar	Within
				Outer Ards ASSI	Within
				Strangford Lough ASSI	9.9
Knot *(Calidris canutus)*	N/A	N/A	Unlikely to be present in the Project Area.	Strangford Lough SPA and Ramsar	9.9
				Strangford Lough ASSI	9.9
Northern lapwing *(Vallenus vallenus)*	N/A	N/A	Winter	Outer Ards ASSI	Within
				Copeland Islands ASSI	5.5
				Strangford Lough ASSI	9.9
Light-bellied Brent goose *(Branta bernicla hrota)*	N/A	N/A	Winter	Outer Ards SPA and Ramsar	Within
				Outer Ards ASSI	Within
				Strangford Lough SPA and Ramsar	9.9
				Strangford Lough ASSI	9.9
Oystercatcher *(Haematopus ostralegus)*	N/A	N/A	Winter	Outer Ards ASSI	Within
				Copeland Islands ASSI	5.5
				Strangford Lough ASSI	9.9

Species	Seabird foraging range (km)		Likely to be present	Protected site	Distance to Scot-NI 3 application corridor (km)
	Mean	Max			
				Belfast Lough Outer ASSI	14.3
Purple Sandpiper *(Calidris maritima)*	N/A	N/A	Winter	Outer Ards ASSI	Within
				Belfast Lough Outer ASSI	14.3
Redshank *(Tringa totanus)*	N/A	N/A	Winter	Outer Ards ASSI	Within
				Copeland Islands ASSI	5.5
				Strangford Lough SPA and Ramsar	9.9
				Belfast Lough Outer ASSI	14.3
				Belfast Lough SPA and Ramsar	14.5
Red-throated Diver *(Gavia stellata)*	3.2	9	Dec - May	East Coast Marine pSPA	Within
Reed bunting *(Emberiza schoeniclus)*	N/A	N/A	Unlikely to be present in the Project Area.	Copeland Islands ASSI	5.5
Ringed plover *(Charadrius hiaticula)*	N/A	N/A	Winter	Outer Ards SPA and Ramsar	Within
				Outer Ards ASSI	Within
				Copeland Islands ASSI	5.5
				Belfast Lough Outer ASSI	14.3
Sedge warbler *(Acrocephalus schoenobaenus)*	N/A	N/A	Unlikely to be present in the Project Area.	Copeland Islands ASSI	5.5
Shelduck *(Tadorna tadorna)*	N/A	N/A	Unlikely to be present in the Project Area.	Strangford Lough SPA and Ramsar	9.9
Common snipe *(Gallinago gallinago)*	N/A	N/A	Unlikely to be present in the Project Area.	Copeland Islands ASSI	5.5
Stock dove *(Columba oenas)*	N/A	N/A	Unlikely to be present in the Project Area.	Copeland Islands ASSI	5.5
Turnstone *(Arenaria interpres)*	N/A	N/A	Winter	Outer Ards SPA and Ramsar	Within
				Outer Ards ASSI	Within
				Belfast Lough Outer ASSI	14.3
Water rail *(Rallus aquaticus)*	N/A	N/A	Unlikely to be present in the Project Area.	Copeland Islands ASSI	5.5

Species	Seabird foraging range (km)		Likely to be present	Protected site	Distance to Scot-NI 3 application corridor (km)
	Mean	Max			
Eurasian wigeon *(Mareca penelope)*	N/A	N/A	Unlikely to be present in the Project Area.	Strangford Lough SPA and Ramsar	9.9
Breeding birds					
Arctic tern (*Sterna paradisaea)*	6.1	46	May - August	East Coast Marine pSPA	Within
				Outer Ards SPA and Ramsar	Within
				Copeland Islands SPA	5.5
				Copeland Islands ASSI	5.5
				Strangford Lough SPA and Ramsar	9.9
				Strangford Lough ASSI	9.9
				Belfast Lough SPA and Ramsar	14.5
Common tern (*Sterna hirundo)*	6.4	30	Apr - Jun	East Coast Marine pSPA	Within
				Strangford Lough SPA and Ramsar	9.9
				Strangford Lough ASSI	9.9
				Belfast Lough SPA and Ramsar	14.5
Sandwich tern (*Thalasseus sandvicensis)*	9	80	May - Aug	East Coast Marine pSPA	Within
				Strangford Lough SPA and Ramsar	9.9
				Strangford Lough ASSI	9.9
Roseate tern *(Sterna dougallii)*	4.1	24	May, Aug - Sep	Strangford Lough ASSI	9.9
Great cormorant *(Phalacrocorax carbo)*	9.2	46	May - Feb	The Gobbins ASSI	8.6
				Strangford Lough ASSI	9.9
European shag *(Phalacrocorax aristotelis)*	7.1	35	All year, Peak Sep - Oct	The Gobbins ASSI	8.6
Common guillemot *(Uria aalge)*	33.1	338	All year, Peak May - Jul	The Gobbins ASSI	8.6
Black guillemot *(Cepphus grylle)*	4.9	8	All year	Copeland Islands ASSI	5.5

Species	Seabird foraging range (km)		Likely to be present	Protected site	Distance to Scot-NI 3 application corridor (km)
	Mean	Max			
Razorbill *(Alca torda)*	61.3	313	All year, Peak Apr - Jun	The Gobbins ASSI	8.6
Atlantic Puffin *(Fratercula arctica)*	62.4	383	All year	The Gobbins ASSI	8.6
Northern fulmar *(Fulmarus glacialis)*	134.6	2736	All year	The Gobbins ASSI	8.6
Manx Shearwater *(Puffinus puffinus)*	136.1	2890	Mar - Oct, Peak May - Aug	East Coast Marine pSPA	Within
				Copeland Islands SPA	5.5
				Copeland Islands ASSI	5.5
Black-headed gull *(Chroicocephalus ridibundus)*	7	18.5	Oct - Jun	Copeland Islands ASSI	5.5
Common gull *(Larus canus)*	N/A	50	All year, Peak Mar - Apr	Copeland Islands ASSI	5.5
Mediterranean gull *(Ichthyaetus melanocephalus)*	11.5	50	Summer	Copeland Islands ASSI	5.5
Black-legged kittiwake *(Rissa tridactyla)*	54.7	770	All year, Peak Jun - Jul	The Gobbins ASSI	8.6
Non-breeding birds					
Bar-tailed godwit *(Limosa lapponica)*	N/A	N/A	Unlikely to be present in the Project Area.	Belfast Lough SPA and Ramsar	14.5
Black-tailed godwit *(Limosa limosa)*	N/A	N/A	Unlikely to be present in the Project Area.	Belfast Lough SPA and Ramsar	14.5
Common buzzard *(Buteo buteo)*	N/A	N/A	Unlikely to be present in the Project Area.	Copeland Islands ASSI	5.5
Hen harrier *(Circus cyaneus)*	N/A	N/A	Unlikely to be present in the Project Area.	Copeland Islands ASSI	5.5
Kestrel *(Falco tinnunculus)*	N/A	N/A	Unlikely to be present in the Project Area.	Copeland Islands ASSI	5.5
Merlin *(Falco columbarius)*	N/A	N/A	Unlikely to be present in the Project Area.	Copeland Islands ASSI	5.5
Peregrine falcon *(Falco peregrinus)*	N/A	N/A	Unlikely to be present in the Project Area.	Copeland Islands ASSI	5.5
				The Gobbins ASSI	8.6

Species	Seabird foraging range (km)		Likely to be present	Protected site	Distance to Scot-NI 3 application corridor (km)
	Mean	Max			
Sparrowhawk *(Accipiter nisus)*	N/A	N/A	Unlikely to be present in the Project Area.	Copeland Islands ASSI	5.5

Table A-2 Foraging distances of bird species from protected sites near Scot-NI 4

Species	Seabird foraging range (km)		Likely to be present	Protected site	Distance to Scot-NI 4 application corridor (km)
	Mean	Max			
Wintering birds					
Common eider *(Somateria mollissima)*	3.2	22	All year, Peak Oct - Dec	East Coast Marine pSPA	Within
Great Crested Grebe *(Podiceps cristatus)*	N/A	N/A	Winter	East Coast Marine pSPA	Within
				Larne Lough ASSI	4.1
Greenshank *(Tringa nebularia)*	N/A	N/A	Unlikely to be present in the Project Area.	Larne Lough ASSI	4.1
Goldeneye *(Bucephala clangula)*	N/A	N/A	Unlikely to be present in the Project Area.	Larne Lough ASSI	4.1
Light-bellied Brent goose *(Branta bernicla hrota)*	N/A	N/A	Winter	Larne Lough SPA and Ramsar	4.1
				Larne Lough ASSI	4.1
Redshank *(Tringa totanus)*	N/A	N/A	Winter	Larne Lough ASSI	4.1
Red-breasted merganser *(Mergus serrator)*	N/A	N/A	Nov - Apr	Larne Lough ASSI	4.1
Red-throated Diver *(Gavia stellata)*	3.2	9	Dec - May	East Coast Marine pSPA	Within
Shelduck *(Tadorna tadorna)*	N/A	N/A	Unlikely to be present in the Project Area.	Larne Lough ASSI	4.1
Breeding birds					
Arctic tern (*Sterna paradisaea)*	6.1	46	May - August	East Coast Marine pSPA	Within
				Larne Lough ASSI	4.1
Common tern (*Sterna hirundo)*	6.4	30	Apr - Jun	East Coast Marine pSPA	Within
				Larne Lough SPA and Ramsar	4.1
				Larne Lough ASSI	4.1
Sandwich tern (*Thalasseus sandvicensis)*	9	80	May - Aug	East Coast Marine pSPA	Within

Species	Seabird foraging range (km)		Likely to be present	Protected site	Distance to Scot-NI 4 application corridor (km)
	Mean	Max			
				Larne Lough SPA and Ramsar	4.1
				Larne Lough ASSI	4.1
Roseate tern *(Sterna dougallii)*	4.1	24	May, Aug - Sep	Larne Lough SPA and Ramsar	4.1
				Larne Lough ASSI	4.1
European shag *(Phalacrocorax aristotelis)*	7.1	35	All year, Peak Sep - Oct	The Maidens ASSI	2.15
Common guillemot *(Uria aalge)*	33.1	338	All year, Peak May - Jul	Ailsa Craig SPA	0.76
				Portmuck ASSI	6.5
				Rathlin Island SPA	46.7
Black guillemot *(Cepphus grylle)*	4.9	8	All year	Clyde Sea Sill NCMPA	Within
				Portmuck ASSI	6.5
				Rathlin Island MCZ	46.7
Razorbill *(Alca torda)*	61.3	313	All year, Peak Apr - Jun	Portmuck ASSI	6.5
				Rathlin Island SPA	46.7
Atlantic Puffin *(Fratercula arctica)*	62.4	383	All year	Portmuck ASSI	6.5
				Rathlin Island SPA	46.7
Northern fulmar *(Fulmarus glacialis)*	134.6	2736	All year	Portmuck ASSI	6.5
Manx Shearwater *(Puffinus puffinus)*	136.1	2890	Mar - Oct, Peak May - Aug	East Coast Marine pSPA	Within
Northern gannet *(Morus bassanus)*	120	709	All year, Peak May - Aug	Ailsa Craig SPA	0.76
Lesser black-backed gull *(Larus fuscus)*	43.3	533	Nov - Aug	Ailsa Craig SPA	0.76
European herring gull *(Larus argentatus)*	14.9	92	All year, Peak Mar - Apr	Ailsa Craig SPA	0.76
Mediterranean gull *(Ichthyaetus melanocephalus)*	11.5	50	Summer	Larne Lough SPA and Ramsar	4.1
				Larne Lough ASSI	4.1
Black-legged kittiwake *(Rissa tridactyla)*	54.7	770	All year, Peak Jun - Jul	Ailsa Craig SPA	0.76
				Portmuck ASSI	6.5
				Rathlin Island SPA	46.7

Species	Seabird foraging range (km)		Likely to be present	Protected site	Distance to Scot-NI 4 application corridor (km)
	Mean	Max			
Non-breeding birds					
Peregrine falcon *(Falco peregrinus)*	N/A	N/A	Unlikely to be present in the Project Area.	Rathlin Island SPA	46.7

Appendix B

WeBS Data Analysis

B.1.1 Introduction

This Appendix provides a summary analysis of the Wetland Bird Survey (WeBS) Core Counts data, obtained to inform the Habitat Regulations Assessment (HRA) and the Marine Environmental Assessment (MEA) report for the Scot-NI telecommunication cables replacement project. The aim of this analysis is to identify which and how many waterbirds are likely to be present in the vicinity of the proposed Scot-NI 3 landfall at Donaghadee. It also provides insights on the relative regional, national, and international importance of the populations present in the study area.

B.1.2 Survey data

The WeBS Core Counts are the coordinated monthly counts of non-breeding waterbirds (wildfowl and waders) on around 2,500 inland and coastal wetlands throughout the UK.

Large sites that require more than one counter to cover the site in a reasonable time (3-4 hours) are divided into smaller counting areas or sectors. This allows a team of counters to make a synchronous count of all sectors. The Northern Irish landfall of Scot-NI 3 at Donaghadee is located within the WeBS site called 'Outer Ards Shoreline'. This site stretches along the coastline from Bangor to Ballyquintin Point and is subdivided into 37 sectors. The landfall is located within sector 15 of the 'Outer Ards Shoreline'. This area is referred to as 'the study area'.

The WeBS counting year runs from July to June (so year 14/15 includes data from July 2014 to June 2015 inclusive). The year is divided into three functional counting seasons: Autumn (July to October inclusive to describe autumn passage); Winter (November to March inclusive to describe the wintering population) and Spring (April to June inclusive to describe spring passage). Counts are generally done by volunteers and some count year-round while others concentrate on the winter months. In the area of interest, counts are only available over the winter period for the months: January, February, March, and November in any of the years. This makes it difficult to draw any conclusions regarding seasonality, but changes in relative abundance within the winter season can still be observed.

WeBS Core Counts are usually provided in the format of tabulated five-year synopses that present the average count from five consecutive years for each species in each month. The average monthly count can be used to provide information which bird species are frequenting the site as well as the relative importance of the months in which counting took place.

Also given are the winter peaks for each species, the mean peak counts, and the proportion of national/international populations present. Traditionally, the "five-year peak mean", the mean of the annual peaks over five consecutive winters, has been used to support inclusion of individual species as qualifying features on protected sites. WeBS publishes this value annually for all individual species on all monitored WeBS sites in addition to the equivalent for the waterbird assemblage on each site (Austin, 2015).

The most recent data currently available are for the year 2018/2019. The data obtained for this assessment includes the five-year period between July 2014 and June 2019.

B.1.3 Results

B.1.3.1 Outer Ards Sector 15

Figure B-1 presents the five-year (from July 2014 to June 2019) average monthly counts for each species. Figure B-1 indicates that based on average counts, the top five most important species within Outer Ards sector 15 are Black-headed gull, Lapwing, Oystercatcher, Redshank and Common gull. Whilst Figure B-1 reflects that counts were only available for the months November, January, February, and March, it gives a good idea of the relative importance of those months for each species. Figure B-2 provides the totals of the average monthly counts for all species combined and provides an indication of the relative importance of each month for the entire waterbird population. Figure B-2

shows that within Outer Ards sector 15, most birds are present in November and January (no counts are available for December). From Figure B-1 the same can be seen for some individual species such as the black-headed gull and the lapwing, but not for others like for example the redshank or the light-bellied Brent goose.

Figure B-1 Five-year (July 2014 – June 2019) average monthly counts of each species within Outer Ards sector 15

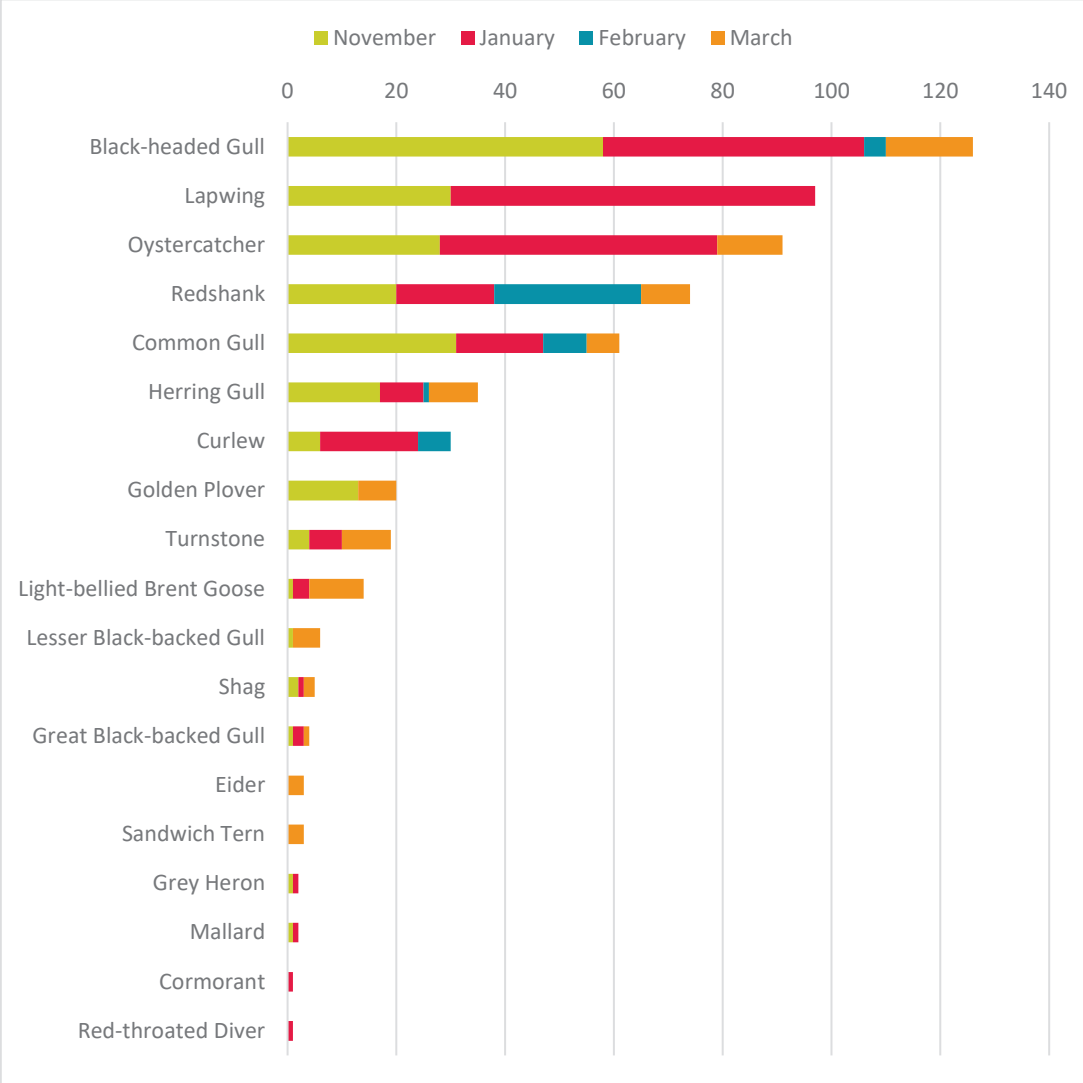

Figure B-2 Total of five-year average counts of all species combined for each month

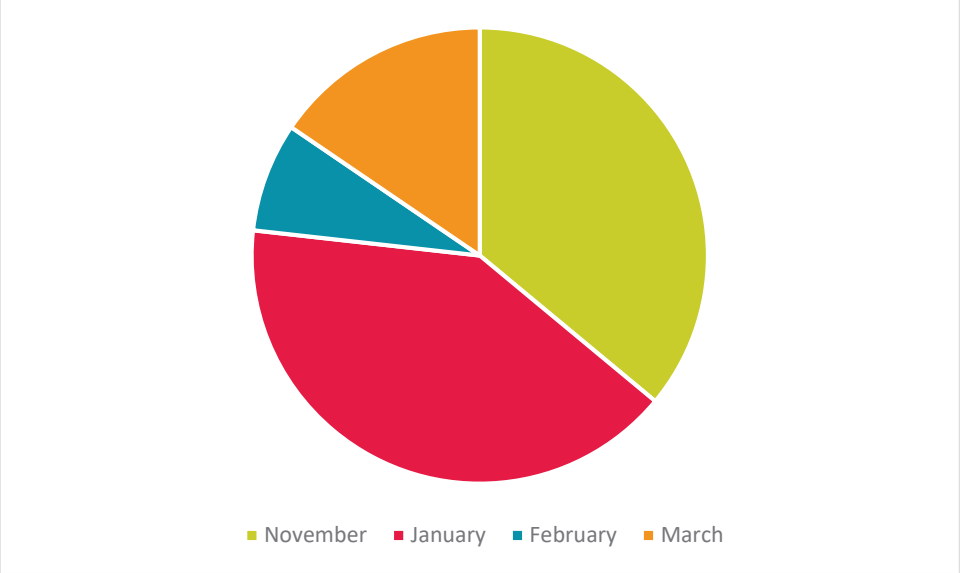

Figure B-3 presents the five-year mean peak count for each species within Outer Ards section 15. In terms of the most frequently occurring birds, Figure B-3 provides a similar picture as Figure B-3, with the main difference being the position switch between the common gull and redshank.

Figure B-3 Five-year mean peak count of each species within Outer Ards section 15