



EGL1 Offshore Cable Marine Conservation Zone

Assessment of Seabed Disturbance Impacts from Unexploded Ordnance Clearance

EGL1

31 October 2025



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Document history

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Issue	Date	Revision Details
A	07/08/2025	First Draft
B	14/09/2025	Second Issue
C	16/10/2025	Updated following client review
D	31/10/2025	Finalised for MMO & MD-LOT submission

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Abbreviations

ADD	Acoustic Deterrent Device
AEZ	Archaeological Exclusion Zones
ALARP	As Low As Reasonably Practicable
COLREG	Convention on the International Regulations for Preventing Collisions at Sea
cUXO	confirmed Unexploded Ordnance
EAR	Environmental Appraisal Report
ENG	Ecological Network Guidance
EPS RA	European Protected Species Risk Assessment
GMA	General Management Approach
GW	Giga Watts
HSE	Health, Safety and Environment
HVDC	High Voltage Direct Current
IMO	International Maritime Organisation
INNS	Invasive Non-Native Species
JNCC	Joint Nature Conservation Committee
LAT	Lowest Astronomical Tide
MARPOL	Regulations for the Prevention of Pollution from Ships
MCAA	Marine and Coastal Access Act
MCZ	Marine Conservation Zone
MMMP	Marine Mammal Mitigation Plan
MMO	Marine Management Organisation
MPA	Marine Protected Area
NA	Not Assessed
NAS	Noise Abatement System
NEQ	Net Explosive Quantity
NS	Not Sensitive
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PAD	Protocol for Archaeological Discoveries
PPL	Prismian Powerlink
RIAA	Report to Inform Appropriate Assessment
ROV	Remotely Operated Vehicle
SEI	Supporting Environmental Information
SOLAS	International Convention for the Safety of Life at Sea

SSC	SSC Suspended Sediment Concentration
TI	Target Inspection
UK	UK United Kingdom
UXO	UXO Unexploded Ordnance

1. Introduction

Prysmian Powerlink (PPL) has contracted Natural Power Consultants Ltd. (Natural Power) to provide a Marine Conservation Zone (MCZ) Assessment as part of the supporting documentation required for the submission of a Marine Licence Application (MLA) regarding the removal and/or disposal of Unexploded Ordnance (UXO) preceding installation of the Eastern Green Link 1 (EGL1) Marine Scheme.

The MLA is accompanied with Supporting Environmental Information (SEI) which collates and presents relevant information for the proposed UXO clearance works in relation to the Marine (Scotland) Act 2010, and the Marine and Coastal Access Act 2009.

An MCZ Assessment is provided as part of the package of SEI provided to the MMO specifically, given proximity of relevant MCZs; the assessment is intentionally not inclusive of Scottish Marine Protected Areas (MPAs) given the intervening distance between the EGL1 Marine Scheme and the Firth of Forth Banks Complex MPA. The Marine Scheme does not directly pass through any MPAs and no MPAs were identified within 10 km of the Marine Scheme in Scottish Waters. Therefore, MPAs are not considered further in this assessment. This is consistent with the original MCZ/MPA Assessment for the Marine Scheme – please refer to Volume 3, Appendix 8.1 of the original Environmental Appraisal Report for further details and justification (AECOM, 2022).

The objective of the MCZ Assessment is to determine whether the UXO clearance works are capable of affecting (other than insignificantly):

- Protected features of an MPA / MCZ; and / or
- Any ecological or geomorphological process on which the conservation of any protected features of an MPA / MCZ is (wholly or in part) dependant.

The approach is consistent with that taken for other similar projects and considers potential for significant effects both alone and cumulatively with other relevant plans, projects and activities.

This MCZ Assessment (1397056) document has been prepared by Natural Power on behalf of PPL, to support the MLA for the clearance of UXO along the marine installation corridor within United Kingdom (UK) waters and will be submitted alongside a suite of supporting documents including:

- Supporting Environmental Information (SEI) (1396955);
- Report to Inform Appropriate Assessment (RIAA) (1369784);
- European Protected Species Risk Assessment (EPS RA) (1400131); and
- Marine Mammal Mitigation Plan (MMMP) (1369788).

The approach to the MCZ Assessment has been informed by both the previous original MCZ Assessment for the Marine Scheme, and also post-consent discussions between EGL1, PPL and the MMO.

1.1. Background

The Eastern Green Link 1 (EGL1; hereafter referred to as the 'Marine Scheme') High Voltage Direct Current (HVDC) link (Figure 1-1) is being developed to connect electricity grid infrastructure between Torness in East Lothian (Scotland) and Hawthorn Pit in County Durham (England) by National Grid Electricity Transmission (NGET) and Scottish Power Transmission (SPT) jointly (together, known as the Applicant). The Marine Scheme is a major reinforcement of the electricity transmission system which will provide additional north-south transmission capacity between southern Scotland and northern England.

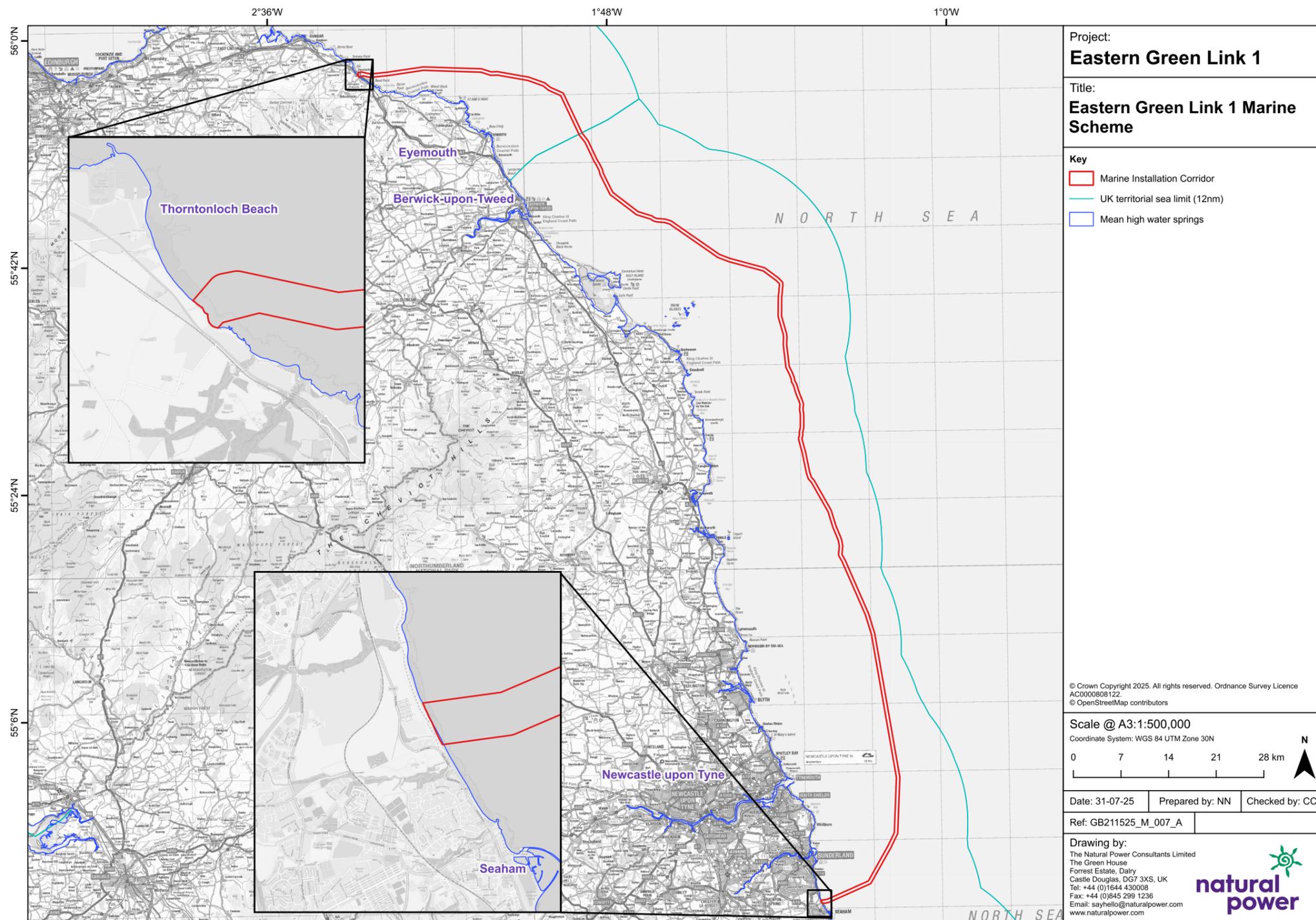
PPL has been selected as Principal Contractor for the engineering, procurement, construction and installation of the onshore and offshore cables.

Prior to the commencement of cable installation, further surveys have been undertaken in 2024 and 2025 to confirm that no new obstructions have appeared on the seabed since the original marine surveys were undertaken (in 2020), and to re-confirm the viability of the corridor and exact cable route in relation to seabed conditions, bathymetry and other seabed features. Following these surveys, a number of magnetic targets have been identified as potential UXOs (pUXO) and require further analysis. The Marine Scheme did not require a full Environmental Impact Assessment (EIA) but was subject to a detailed Environmental Appraisal (EA) (AECOM, 2022).

The Marine Scheme is described below:

Commencing at Mean High Water Springs (MHWS) at Thorntonloch Beach, East Lothian, approximately 176 km of subsea HVDC cable, comprising 37.5 km in Scottish waters and 138.5 km in English waters, will extend to MHWS at Seaham, County Durham.

Marine Licences have been granted by the Marine Directorate Licensing and Operations Team (MD-LOT) for Scottish waters and the Marine Management Organisation (MMO) for English waters, licence reference numbers MS-00009880 and L/2023/00212/2, respectively.



Project:
Eastern Green Link 1

Title:
Eastern Green Link 1 Marine Scheme

Key

- ▬ Marine Installation Corridor
- ▬ UK territorial sea limit (12nm)
- ▬ Mean high water springs

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Coordinate System: WGS 84 UTM Zone 30N

0 7 14 21 28 km

Date: 31-07-25 Prepared by: NN Checked by: CC

Ref: GB211525_M_007_A

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Figure 1-1: The Eastern Green Link 1 Marine Scheme Location

1.2. Scope of this Document

The Applicant requires an additional Marine Licence application for the UXO clearance activities, should they be determined to be required, for the entire EGL1 Marine Scheme.

A hierarchical approach to addressing confirmed UXO (cUXO) will be applied. This will be (in order of preference), avoidance, relocation, or clearance (deflagration or detonation). Should avoidance or relocation of UXO prove to be unfeasible following a cable micro-siting exercise, then clearance will be required.

UXO clearance was not assessed within the Environmental Assessment as part of the original application (which is consistent with pre-application guidance from the Regulator, and subsequent guidance since that point) and there is potential for UXOs to be present along the Marine Scheme length.

Under the Marine and Coastal Access Act 2009, a Marine Licence is required for UXO clearance activities.

This document has been produced to provide the supporting information to inform the Marine Licence application, and contains the following:

- Description of the UXO clearance activities (Section 2);
- Overview of the MCZ assessment process (section 3);
- Activities and worst case scenario parameters (Section 4);
- MCZ screening assessment (Section 5);
- Stage 1 MCZ Assessment (Section 6);
- Summary and Conclusion (Section 7); and
- References (Section 8).

The following sections of this report provide the information used to inform the MCZ Assessment process. The methodology for the MCZ assessment follows the approach set out in the Marine Management Organisation (MMO, 2013) Marine Conservation Zones and Marine Licencing Guidance. The assessment considers whether the proposed UXO clearance activities have the potential to hinder the conservation objectives of any MCZs and, where relevant, identifies appropriate mitigation measures.

1.3. Legislation

MCZs in England, Wales and Northern Irish territorial and offshore waters are designated under the Marine and Coastal Access Act (MCAA) (2009) to protect a range of important marine habitats, species and geological formations. As the proposed works will be conducted within the vicinity of three MCZs, the impact of disturbance on these MCZs needs to be assessed before a Marine Licence for UXO works can be issued. This is required to meet the obligations of Section 126 of the Marine and Coastal Access Act (MCAA) (2009). Section 126 applies where:

- *A public authority has the function of determining an application (whenever made) for authorisation of the doing of an act; and*
- *The act is capable of affecting (other than insignificantly):*
 - *The protected features of an MCZ; and*
 - *Any ecological or geomorphological process on which the conservation of any protected feature of an MCZ is (wholly or part) dependent.*

The Joint Nature Conservation Committee (JNCC) is responsible for identifying and recommending MCZs in the offshore marine area and sets the Conservation Objectives and General Management Approach (GMA) for MCZs.

2. Description of the UXO Clearance Activities

In order to undertake installation activities, a number of route preparation activities will be required to ensure that cable installation activities are performed safely without risk to personnel or equipment, including pre-installation surveys, route clearance, boulder clearance and UXO clearance. This application considers the need for clearance of UXO, should they be present in the area affected by planned installation work.

2.1. Outline Programme

The EGL1 UXO clearance work is anticipated to take up to one month between Q2 and Q3 2026, following target inspection operations. The duration will depend on the exact number of UXO to be cleared but it is estimated a maximum of 60 days, including weather downtime. No more than one UXO detonation is expected to occur in a 24-hour period.

2.2. Outline Method Statement

In June 2025, offshore high-resolution geophysical surveys were undertaken in order to identify pUXOs based on bathymetry, seabed data and magnetometry. After the survey was performed, a list of pUXOs was defined. Based on this initial list, engineering works were performed to avoid these pUXOs whenever possible. Where avoidance of pUXOs is not possible, a target inspection will be performed by experts to determine if the target is a cUXO.

UXO target inspection ('UXO TIs') was assessed and considered as part of the original 'main' EGL1 MLA (MLA/2022/00231), and UXO TIs are included within the consented EGL1 Marine Licence (L/2023/00212/2). As has been discussed and agreed with the MMO via regular post-consent / pre-construction engagement in 2024/2025, it is the intention of the Applicant and PPL alike to draw upon the existing Marine Licence for UXO TIs. Pursuant to this and as agreed with the MMO, a brief UXO TI method statement will be supplied to the MMO, alongside other minor / admin condition responses, in order to discharge this activity on the Marine Licence and 'unlock' use. A similar approach will be followed with MD-LOT to draw upon the existing Marine Licence (MS-00009880) for UXO TIs in Scotland.

Following on from identification, the cUXO clearance options are provided below.

Considering the timeline required for the submission of the licence, the final number (including location, size, type and exact methodology for clearance) of cUXO to be cleared is not known at this stage but it is based on the initial list of pUXOs and first re-routing. The approach of supplying the best-available information which can be practicably obtained and provided at the time of the MLA is aligned with the updated Defra joint UXO position statement (Defra, 2025).

2.3. pUXO Targets

The below table presents numbers regarding the UXO process (Table 2-1). Numbers identified by a (*) are those which are estimated to be confirmed following target inspection operations.

The targets are located between 7 and 88.6m LAT (Lowest Astronomical Tide).

Table 2-1: Number and locations of pUXO targets and number of cUXO required to be cleared

Location	Total pUXO targets	pUXO targets to be inspected	Estimated UXO targets	UXO to be cleared
	Identified from UXO survey – full corridor		Identified after Target Inspection	Which remain after micro-siting exercise
Full route	554	70*	55*	40*
Scotland	144	20*	15*	10*
England	410	50*	40*	30*

2.4. UXO Clearance

A variety of options for managing UXOs on site are available and will be considered on a case-by-case basis:

- Micro-siting i.e., avoidance of UXO;
- Relocation ('lift and shift') of UXO (where deemed safe to do so); and
- The primary method for clearance is low order and high order will only be used following attempts to undertake low order clearance;
 - Low order (deflagration) – Low order technique causes UXO to burn out without full detonation (i.e., avoiding the intended explosive and destructive function and purpose of the ordnance). A small charge is fired at the explosive fill of the UXO, causing the explosive content to ignite and burn out. The casing of the munition typically cracks open, but if successful, it should not detonate. Low order clearance methods will be utilised in the first instance.
 - High order (detonation) – An ordnance detonation that results in an explosive ordnance producing the designed/intended explosive yield. This is typically achieved by sympathetic detonation caused by a place donor charge.

It is anticipated that 90% of UXO targets will be cleared using low order clearance methods whilst up to 10% of UXO (maximum four UXOs) may require high order clearance methods (i.e., a maximum of 36 low order clearances and 4 high order clearances). It is likely that different types of UXO will be present (with a moderate likelihood to encounter HE bombs, sea mines and projectiles originating from WWI and WWII), many of which are likely to have been subject to degradation or burying over time. The largest UXO modelled for the worst-cast scenario has a Net Explosive Quantity (NEQ) of 722 kg (See Appendix A of the accompanying SEI document).

Low order clearance is preferable to high order clearance as it avoids the high pressures associated with an explosion by using a small initiation explosive to 'burn away' the target explosive material within the UXO. Different sized initiation explosives may be required for different sized UXOs.

The EGL1 UXO clearance work is anticipated to take up to one month within Q2 and Q3, 2026 (over a maximum of 60 days, including weather downtime, with no more than one UXO detonation is expected to occur in a 24-hour period. A detonation event is defined as a planned clearance through high order methods of a single UXO or of multiple UXO where they are suited together such that a single detonation can be used for clearance.

PPL is currently in the process of appointing a UXO Contractor to provide Explosive Ordnance Disposal (EOD) Trained Personnel to carry out close approach and initial identification of UXO, including UXO clearance / disposal as required. This could include use of divers. The UXO Contractor will provide onboard UXO personnel to oversee and sign-off each target only, as such is required to provide their own qualified EOD personnel (UK: Minimum

advanced level EOD qualification received from a recognised Military establishment focused on marine EOD operations).

UXO identification and clearance solutions (including vessels, equipment and personnel) are required to agitate and remove localised sediment on the seabed, visually identify and relocate, where applicable, all cUXO targets within nearshore (0 m – 10 m LAT) and offshore (>10 m LAT) areas within the marine installation corridor and landfall. Details of positioning, relocation, detection, dredging and all other equipment to work in all 'dry' areas are to be provided by the UXO Contractor. As detailed above, UXO TIs are already included in the 'main' Marine Scheme Marine Licence and are not discussed at-length within this document.

2.5. Vessels and Equipment

It has not yet been confirmed which vessels will be used for the UXO clearance work. It is anticipated that a maximum of four vessels will be required:

- An 'ROV (Remotely Operated Vehicle) support vessel' from which any charges will be set and on which the mitigation personnel will be based;
- A 'dive support' vessel from which divers can be deployed;
- A 'guard vessel' which will undertake preparation and implementation of the detonations and from which the Acoustic Deterrent Device (ADD) will be deployed, where required; and
- A mitigation vessel for the deployment of a Noise Abatement System (NAS), if required.

Up to four vessels will be on site for a limited duration (anticipated a maximum of 60 days including weather downtime), with no more than one UXO detonation expected to occur in a 24-hour period. The potential for impact on the designated sites from the use of vessels will mainly be related to indirect disturbance both in terms of noise and physical presence. Vessels will undertake 24/7 working and the UXO clearance strategy will be planned to minimise vessel transit lengths between targets.

Notably, it is important to recognise that the presence of a multitude of vessels during the installation process has already been fully assessed and considered within the previous EA, supplied to the MMO in support of the original 'main' MLA (MLA/2022/00231) (AECOM, 2022). The MMO provided a favourable determination and deemed the limited vessel noise associated with the Marine Scheme to be acceptable.

2.6. Embedded Mitigation

There are a number of embedded mitigation measures which will be implemented to reduce the potential for certain impacts:

- A hierarchical approach to addressing cUXO will be applied. This will be (in order of preference), avoidance, relocation, or clearance (deflagration or detonation) to ensure the chances of high order detonation are reduced as low as possible;
- Compliance with IMO (International Maritime Organisation) conventions including COLREGs (Convention on the International Regulations for Preventing Collisions at Sea) and SOLAS (International Convention for the Safety of Life at Sea) to ensure standard levels of navigation and vessel safety are adhered to;
- Issue of Notice to Mariners (NtM) notifying of the type and location of the UXO clearance;
- Implementation of appropriate safety distances during UXO investigation;
- Waste management on board vessels is covered the Merchant Shipping (Prevention of Pollution by Sewage and Garbage from Ships) Regulations 2008. These regulations implement revised Annex IV of MARPOL 73/78 (Regulations for the Prevention of Pollution by Sewage from Ships), and Annex V of MARPOL 73/78 (including amendments) (Regulations for the Prevention of Pollution by Garbage from Ships);

- Appropriate biosecurity, aimed at preventing Invasive Non-Native Species (INNS); and
- Any work to be undertaken will avoid all designated Archaeological Exclusion Zones (AEZs) specified for the Development. A Protocol for Archaeological Discoveries (PAD) has been prepared, in line with current consents for the installation works which will be provided to contractors. Specific mitigation includes:
 - Adherence to known AEZs;
 - Analysis of the survey data; and
 - Implementation of the agreed Written Scheme of Investigation (WSI)/PAD.

2.7. Licensable Marine Activities

The activities associated with the UXO clearance are considered to be licensable under the Marine (Scotland) Act 2010 (Category C Application) and the Marine and Coastal Access Act (2009) for the deposit of any substance or object and use of explosives.

The application for UXO clearance to the MMO, to which this MCZ Assessment principally relates, is being made for the following 'licensable marine activities':

Section 66, Part 1

[...] 'To deposit any substance or object within the UK marine licensing area, either in the sea or on or under the sea bed, from—

- (a) any vehicle, vessel, aircraft or marine structure,*
- (b) any container floating in the sea, or*
- (c) any structure on land constructed or adapted wholly or mainly for the purpose of depositing solids in the sea [...].*

Section 66, Part 8:

[...] To use a vehicle, vessel, aircraft, marine structure or floating container to remove any substance or object from the sea bed within the UK marine licensing area [...].

Section 66, Part 10:

[...] To deposit or use any explosive substance or article within the UK marine licensing area either in the sea or on or under the sea bed [...].

These licensable marine activities are considered by the Applicant to most-appropriately capture the UXO clearance process – the exact and final content of the UXO Marine Licence shall be agreed with the MMO.

Disturbance to European Protected Species is assessed within the accompanying European Protected Species Risk Assessment (EPS RA) (1400131) and the Marine Mammal Mitigation Plan (MMMP) (1369788).

3. MCZ Assessment Process

To meet the requirements of Section 126, the MMO has implemented an MCZ assessment process ('Marine conservation zones and marine licensing' (MMO, 2013)) which will be integrated into Marine Licence decision making procedures (Figure 3-1). The MCZ assessment is split into three stages, these are:

1. Screening

Marine licence application is screened to determine whether section 126 should apply. It will apply if (i) the licensable activity is taking place within or near an area being put forward or already designated as an MCZ; or (ii) the activity is capable of affecting (other than insignificantly) either the protected features of an MCZ or any ecological or geomorphological process on which the conservation of any protected feature of an MCZ is (wholly or in part) dependent.

2. Stage 1 Assessment (if required)

Stage 1 assessment will consider whether the conditions in section 126(6) can be met. The assessment will determine whether (i) there is no significant risk of the activity hindering the achievement of the Conservation Objectives for the MCZ; or (ii) can the MMO exercise its functions to further the Conservation Objectives stated for the MCZ.

3. Stage 2 Assessment (if required)

Stage 2 assessment will consider whether the conditions in section 126(7)(b) and (c) can be met. The assessment will determine whether (i) the benefit to the public of proceeding with the act will outweigh the risk of damage to the environment that will be created; and if so, (ii) whether the applicant can satisfy the MMO that they will undertake measures of equivalent environmental benefit to the damage the act will, or is likely to have, on the MCZ.

N.B. This process will be integrated into the marine licensing process

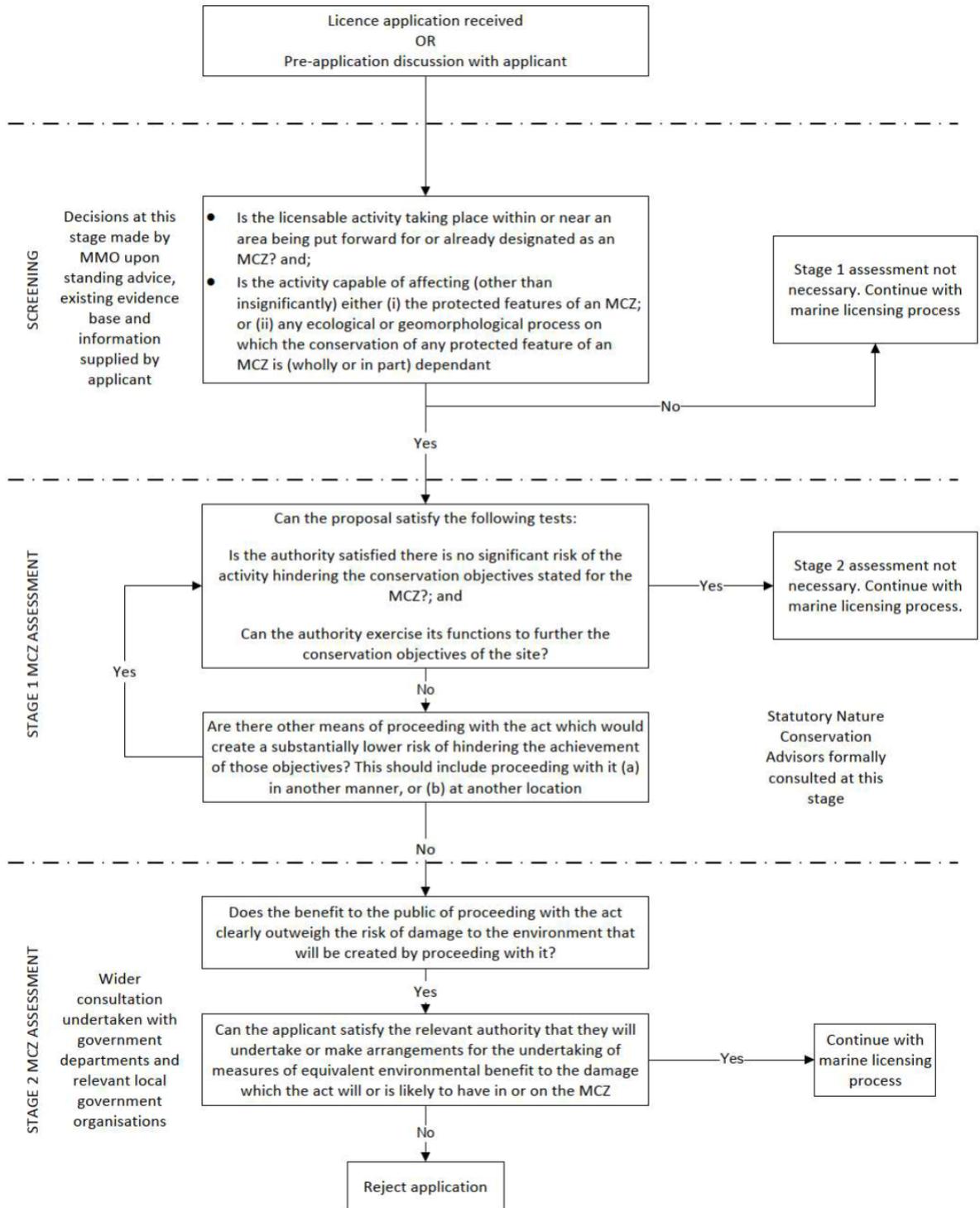


Figure 3-1: MCZ Assessment Process Flow Chart

4. Activities and Worst Case Scenario Parameters

To determine whether the UXO clearance works are capable of affecting, other than insignificantly, the features of a given MCZ, the following activities and worst case scenario (WCS) parameters associated with UXO clearance works are used within the assessment:

- **Vessel presence:** The presence of an anticipated up to four additional vessels within the marine environment associated with UXO clearance activities has the potential to result in disturbance which may displace and/or otherwise disturb birds present in the marine environment;
- **Underwater noise and vibration due to detonation works.** Following summer 2025 geophysical surveys, a total of 40 cUXOs have been identified, 10 along the Scottish section of the marine installation corridor, and 30 along the English section. It is anticipated that 10% of the 30 cUXO along the English section of the marine installation corridor will require high order detonation, totalling three individual detonation events. However, at the time of writing, it cannot be confirmed and therefore, adopting a precautionary approach, the WCS, it is assumed a maximum of 3 cUXO targets may require high order detonation within the MCZ i.e., assuming all cUXO are within the MCZ. These detonations will preferably be of low order, with high order only adopted at location where low order is not feasible. Each detonation event will be discrete within the duration of the campaign (not expected to occur more than once in a 24-hour period and the campaign should be completed within 60 days (including weather downtime)); and
- **Seabed disturbance (including temporary increase in SSC and changes to water quality)** associated with detonations will vary based on a multitude of factors such as UXO type and size, status and integrity, residual explosive potential as well as sediment characteristics. A number of studies have been undertaken exploring this topic globally. Noting the factors above, any 'cratering' created by HOD events are anticipated to be typically 1-2 m in maximum depth (some highly limited disturbance may extend marginally beyond this zone, based on fragmented material etc. during the HOD process). The radius of any 'cratering' is expected to be no greater than approximately 6 m. These findings are supported by real-world in-situ analysis of HOD and LOD clearance operations (Lepper et al, 2024). Importantly, these findings are also supported by independent analysis commissioned by JNCC, finding that no HOD disposal events analysed exceeded 5.5 m (radius) or 2.5 m (depth) (JNCC, 2025). Nonetheless, to ensure a precautionary approach to assessment, a radius of 10.5 m has been used in this assessment, based on the maximum calculated crater size noted in the East Anglia THREE UXO ML supporting documentation (MLA/2023/00532). Research findings also tend to indicate that where seabed conditions are partially mud-comprised, the dimensions of any 'cratering' are reduced by ~50% (JNCC, 2025). Given the principal habitat found within the Marine Scheme is A5.45 (Deep circalittoral mixed sediments, i.e., circalittoral habitats with slightly muddy mixed gravelly sand and stones or shell) this is a potentially relevant and favourable consideration. Low order inspection and clearance will result in a negligibly small area of sediment disturbance, which would be imperceptible against natural processes.

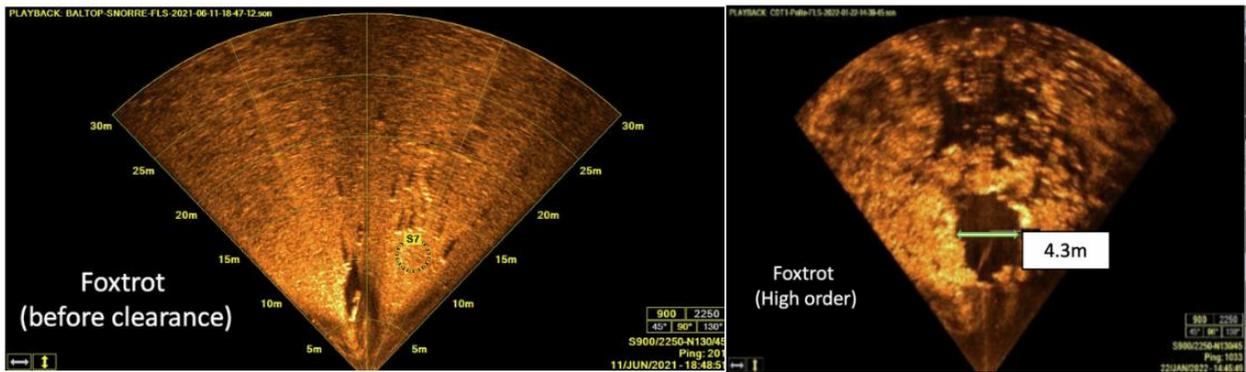


Plate 1 Comparison of as-found and as-cleared (Lepper, et al (2024))

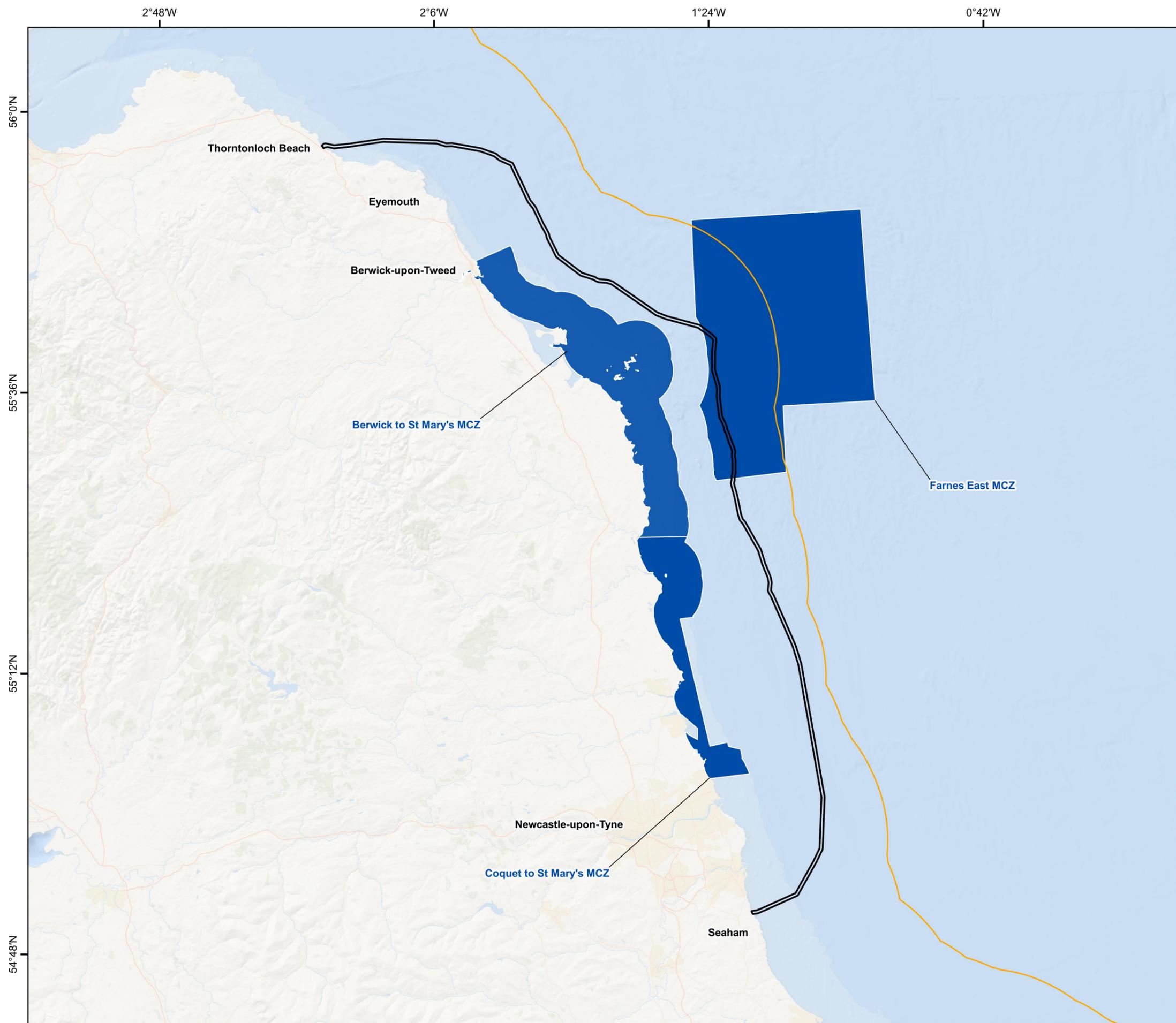
- There is also potential for increased Suspended Sediment Concentrations (SSCs) and associated redistribution and sedimentation, which has potential to expose or smother ecological receptors, including seabird prey species.

Note that it is expected that the majority of cUXO which cannot be relocated or micro-routed around, will require low order deflagration. This process is minimally invasive, potentially requiring some excavation around the cUXO, however this will result in imperceptible effects within the wider environment. The resulting material will be picked up and brought aboard for disposal onshore.

Study areas are dependent on the receptor and the impact assessed and are defined within the relevant sections in the assessment (Section 6).

5. MCZ Screening Assessment

The planned works are in proximity to three MCZs (**Figure 5-1**) which are considered in the screening stage. These are the Farnes East MCZ, Berwick to St Mary's MCZ and Coquet to St Mary's MCZ. Screening has been undertaken to identify possible pressure / feature interactions from the UXO clearance activities outlined in Section 2. The screening approach follows the MMO MCZ assessment guidance.



Project:
Eastern Green Link 1

Title:
Figure 5.1: MCZs along the Eastern Green Link 1 Marine Scheme

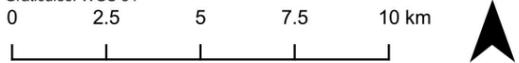
Key

-  EGL1 Marine Installation Corridor
-  Marine Conservation Zone (MCZ)
-  12 nautical mile (NM) UK limit



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5.1. Farnes East MCZ

The marine installation corridor passes through the Farnes East MCZ for approximately 26 km. The MCZ is situated in the north-east of England and was designated in January 2016. It stretches across inshore and offshore waters and lies approximately 11 km from the Northumberland coast, covering 945 km² with has a depth range between 30m and 100m. The site is designated for seven protected features summarised in Table 5.1 with the current GMA for each feature provided. The GMAs are set by JNCC and provide a view as to whether a feature needs to be maintained or brought into favourable condition, based on current knowledge about its condition.

Table 5.1: Protected Features and GMAs of the Farnes East MCZ

Protected Feature	Feature Type	General Management Approach
Moderate energy circalittoral rock	Broad-scale habitat	Maintain favourable condition
Subtidal coarse sediment	Broad-scale habitat	Maintain favourable condition
Subtidal mixed sediment	Broad-scale habitat	Maintain favourable condition
Subtidal sand	Broad-scale habitat	Maintain favourable condition
Subtidal mud	Broad-scale habitat	Recover to favourable condition
Sea-pen and burrowing megafauna communities	Habitat feature of conservation importance	Recover to favourable condition
Ocean quahog (<i>Arctica islandica</i>)	Species of conservation importance	Recover to favourable condition

Source: JNCC, (2024) Farnes East MPA. [Online] Available from - <https://jncc.gov.uk/our-work/farnes-east-mpa/#monitoring-and-evidence> [Accessed: 03/09/2025]

The following biological attributes of protected features are relevant to temporary habitat loss and physical disturbance from UXO clearance:

- Distribution - presence and spatial distribution of biological communities;
- Structure and function - presence and abundance of key structural and influential species; and
- Structure - species composition of component communities.

Temporary habitat loss and physical disturbance from UXO clearance would result in localised mortality of macrofauna and localised reductions in species richness and biomass in discrete locations.

The benthic habitats of the MCZ support a variety of species including two species of seapen, slender seapen (*Virgularia mirabilis*) and phosphorescent seapen (*Pennatula phosphorea*), which live in the mud habitat of the MCZ, along with the burrowing Norway lobster (*Nephrops norvegicus*). The sedimentary habitats also support ocean quahog (*Arctica islandica*), a bivalve mollusc that is slow growing and can live for over 100 years. The ocean quahog is both an OSPAR (Convention for the Protection of the Marine Environment of the North-East Atlantic) Threatened and/or Declining species and a species Feature of Conservation Importance (FoCI) ¹. The baseline investigations found that the subtidal benthic habitats identified around the marine installation corridor were generally dominated by areas of mud, sand, and coarse sediments and rock as well as a number of sensitive seabed habitats such as subtidal sands and gravels and mud habitats in deep water. The biotope 'seapens and burrowing megafauna' was not identified within the marine installation corridor and there were no observations of seapens, *Nephrops* or *Nephrops* burrows (Chapter 8: Benthic Ecology EGL1 EA (AECOM, 2022)).

UXO clearance works have the potential to cause seabed disturbance which can indirectly lead to temporary increases in Suspended Sediment Concentration (SSCs) and smothering. All benthic habitats and fauna are naturally sensitive to a degree of seabed disturbance. It was determined in the MCZ assessment conducted for the

¹ <https://www.marlin.ac.uk/species/foci>

Environmental Appraisal Report (EAR) for the Marine Scheme (Appendix 8.1 – MPA and MCZ Assessment) that the Farnes East MCZ falls within the zone of influence for temporary physical disturbance to benthic habitats and species. However, this is not universal and seapens and *Nephrops* are considered not sensitive to increases in SSC and smothering (Hill *et al.*, 2023). *Nephrops* burrow to 20-30cm and both *P. phosphorea* and *V. mirabilis* can burrow and move in and out of their burrows. Ocean quahogs are also considered not sensitive to increases in siltation rate and smothering (Tyler-Walters and Sabatini, 2017) and have previously been found largely unaffected by experimental smothering in field and laboratory settings with individuals capable of burrowing through 41 cm of sediment (Powilleit *et al.*, 2006). Any impact of increased SSC from UXO clearance works will be temporary, localised and reversible.

Underwater noise and vibration will be produced by both increased vessel presence in the MCZ and during UXO detonation if required. Noise and vibration changes are considered not relevant to ‘seapen and burrowing megafauna’ biotopes (Hill *et al.*, 2023). Seapens may respond to noise and vibration changes and withdraw into sediment however feeding will continue when the disturbance ends (Hill *et al.*, 2023). Ocean quahog have been found to retract siphons in response to vibrations, however there is no evidence to suggest this have a significant effect, therefore underwater noise is considered not relevant to this species (Tyler-Walters and Sabatini, 2017; Morton, 2011). The protected broad-scale rock, sediment, sand and mud habitats are not sensitive to underwater noise and therefore are screened out of any further assessment.

UXO clearance will increase vessel presence within the MCZ, produce underwater noise and has the potential to alter water quality from accidental leaks and spills from vessels. Benthic species are sensitive to this pressure.

Table 5.2: Farnes East MCZ – Summary of Screening of Pressure and Feature Interactions. S = Sensitive, NS = Not Sensitive and NA – Not Assessed (Precautionary Approach Taken)

Protected Features	Key Pressures			
	Seabed disturbance	Increase in SCC	Underwater noise and vibration	Changes to water quality
Moderate energy circalittoral rock	S	NS	NS	NA
Subtidal coarse sediment	S	NS	NS	NA
Subtidal mixed sediment	S	NS	NS	NA
Subtidal sand	S	NS	NS	NA
Subtidal mud	S	NS	NS	NA
Sea-pen and burrowing megafauna communities	S	NS	NS	S
Ocean quahog (<i>Arctica islandica</i>)	S	NS	NS	S

The screening of pressure and feature interactions are summarised in Table 5.2. All the protected features of the MCZ are not sensitive to increases in SCC and underwater noise and vibration pressures. However, seabed disturbance and changes to water quality are deemed capable of affecting (other than insignificantly) the protected features of the MCZ. Therefore, the Farnes East MCZ is screened in for Stage 1 assessment for the following pressures for all protected features:

- Seabed disturbance;
- Changes to water quality.

5.2. Berwick to St Mary's MCZ

A 5 km section of the proposed cable runs parallel, at a distance of ~1.4 km away, from the MCZ at the closest point. The Berwick to St Mary's MCZ was designated in 2019 and is an inshore site located along the Northumberland Coast. The MCZ has one protected feature, the common eider (*Somateria mollissima*), for which the GMA is 'recover to a favourable condition' (DEFRA, 2019). Common eider feed on molluscs and small crustaceans and dive from the surface to the seabed to catch prey. The area includes the Farnes Island and Coquet Island core breeding site and holds nationally important numbers of breeding common eider.

However, as discussed in Chapter 11: Ornithology of the EAR, the marine installation corridor does not represent key foraging areas for common eider. Common eider usually feed within water depths up to a maximum of 15 m, whereas the marine installation corridor covers much greater water depths. Additionally, as the marine installation corridor is not within proximity to known nesting locations, it is unlikely disturbance from vessel noise or underwater noise will lead to disturbance and/or displacement. Therefore, this MCZ has been screened out and does not require any further (Stage 1) assessment as there is no connectivity to the planned works and as such, the UXO clearance activities are not capable of affecting (other than insignificantly) the protected features of the MCZ.

5.3. Coquet to St Mary's MCZ

The Coquet to St Mary's MCZ is 8.7 km from the Marine Scheme at the closest point. The MCZ is an inshore site, covering 192 km², situated along the Northumberland Coast from Alnwick to Whitley Bay. It includes areas around St Mary's Island and Coquet Island. The MCZ is designated to protect several different types of rock and sediment habitat on the shore and the seabed that support mobile species such as starfish, sea urchins, crabs and lobsters (DEFRA, 2016).

This site is designated to protect only benthic habitats that are not sensitive to noise and vibration, and since the Marine Scheme does not pass through the site therefore there will be no direct disturbance to benthic habitats within the MCZ during UXO clearance works. Therefore, this MCZ has been screened out and does not require any further (Stage 1) assessment as there is no connectivity to the planned works and as such, the UXO clearance activities are not capable of affecting (other than insignificantly) the protected features of the MCZ.

5.4. Screening Conclusion

Of the three MCZs screened for the potential to be affected, other than insignificantly, by the UXO clearance activities, only the Farnes East MCZ will be carried forward to the Stage 1 Assessment. The marine installation corridor runs directly through this site for approximately 26 km, and there is the potential for direct disturbance to protected benthic habitats and fauna during UXO clearance works carried out along the corridor.

Both seabed disturbance and changes to water quality will therefore be assessed in Stage 1 to determine whether the UXO clearance activities could significantly hinder the Conservation Objectives of the site.

The Berwick to St Mary's MCZ and Coquet to St Mary's MCZ have no connectivity to the planned works therefore these sites have been screened out.

6. Stage 1 MCZ Assessment

Screening revealed the UXO clearance activities have the potential to affect (other than insignificantly) the features of the Farnes East MCZ.

6.1. Farnes East MCZ

6.1.1. Conservation Objectives

The Conservation Objectives, as set by JNCC, for the protected features of the Farnes East MCZ are:

'Subject to natural change, the moderate energy circalittoral rock, subtidal coarse sediment, subtidal sand, subtidal mud, subtidal mixed sediments and sea-pen and burrowing megafauna communities' features are to remain in or be brought into favourable condition, such that their:

- *Extent is stable or increasing; and*
- *Structures and functions, quality, and the composition of their characteristic biological communities are such as to ensure that they are in a condition which is healthy and not deteriorating.*

Subject to natural change, the ocean quahog feature is to remain in or be brought into favourable condition, such that:

- *The quality and extent of its habitat is stable or increasing; and*
- *The population structure allows numbers to be maintained or increased.'*

6.1.2. Baseline Conditions

Approximately 99% of the marine installation corridor comprised sediment-based habitat types and the two main habitats most likely to be encountered are subtidal mixed sediment and subtidal coarse sediment habitats (Chapter 8: Benthic Ecology EGL1 EA (AECOM, 2022)). Along the marine installation corridor there are also some areas of moderate energy circalittoral rock. The baseline conditions along the marine installation corridor for the protected features of the Farnes East MCZ are summarised below, with habitat distributions as described for the EA represented in Figure 6.1.

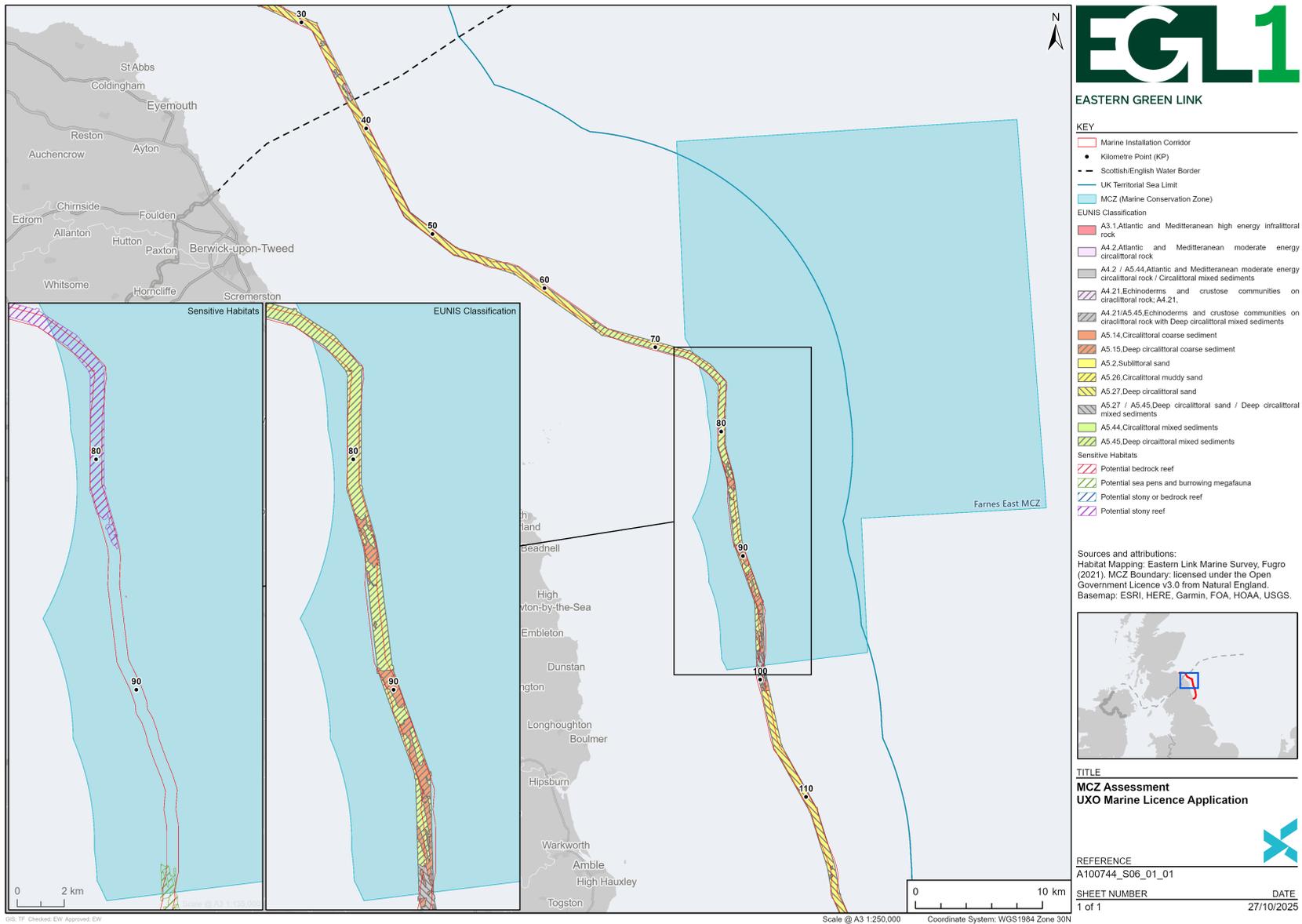


Figure 6.1: Farnes East MCZ Habitat Distributions Along EGL1 Marine Installation Corridor

Moderate Energy Circalittoral Rock

Within the Farnes East MCZ, small patches of moderate energy circalittoral rock ('medium reefiness' bedrock reef) were identified during the baseline benthic survey (approximately KP 84.2 (Chapter 8: Benthic Ecology of the EGL1 EA (AECOM, 2022))).

Subtidal Coarse and Mixed Sediment

Within the section of the marine installation corridors within the Farnes East MCZ, deep circalittoral mixed sediment (A5.45) is the dominant habitat. Deep circalittoral mixed sediment (A5.45) was identified at all eight of the transects conducted along the marine installation corridor within the MCZ, and three of the five stations during the baseline benthic survey (Chapter 8: Benthic Ecology EGL1 EA (AECOM, 2022))). Deep circalittoral coarse sediment (A5.15) was the second most observed habitat, confirmed at two transects and one station.

Subtidal Sand

Of the confirmed subtidal sand and gravel habitats along the marine installation corridor, one habitat is confirmed within the Farnes East MCZ, deep circalittoral sand (A5.27), confirmed at one station within the Farnes East MCZ during the baseline benthic survey.

Subtidal Mud

Subtidal mud habitats were not observed along transects or at stations along the marine installation corridor within the Farnes East MCZ. However, previous survey data within the Farnes East MCZ have recorded limited observations of this habitat in the area of the marine installation corridor and it is predominantly located in patches of subtidal mud in the southeast of the Farnes East MCZ, i.e., away from the marine installation corridor.

Sea-pen and Burrowing Megafauna Communities

There were no observations of sea-pen and burrowing megafauna biotope along the marine installation corridor, including within the MCZ area of overlap. Individuals of the seapens *Pennatula phosphorea* and *Virgularia* sp. and characteristic *Nephrops norvegicus*, were observed at numerous locations along the marine installation corridor, however there were no observations of these species at any stations or transects taken within the Farnes East MCZ during the baseline benthic survey (Chapter 8: Benthic Ecology EGL1 EA (AECOM, 2022))).

Ocean Quahog (*Arctica islandica*)

No evidence of the presence of the ocean quahog was recorded along the marine installation corridor during the benthic baseline survey (Chapter 8: Benthic Ecology EGL1 EA (AECOM, 2022))). However, historically, juvenile ocean quahog have been found within the Farnes East MCZ, predominantly within the east but are also present in the southwest of the site (Cefas, 2015), where the marine installation corridor passes through the Farnes East MCZ.

6.1.3. Assessment of Pressures on MCZ Features

There is the potential for the requirement of UXO clearance by detonation where avoidance by micro-routing and relocation options are not possible, or where low order deflagration methods have proved unsuccessful.

The identified pressures (Section 5.1) assessed against the MCZ protected features are presented below.

6.1.3.1. Seabed Disturbance

The high order UXO clearance activities along the EGL1 marine installation corridor are considered a much smaller activity in terms of resulting seabed disturbance compared to the installation of the cable therefore the potential likelihood for hindering the achievement of the Conservation Objectives is reduced compared to the MCZ assessment undertaken for cable installation. Crucially, it is also important to note that the inherent potential need

for clearance of cUXO means they are unavoidably located within or directly adjacent to the intended route position list (RPL) for the Marine Scheme. Therefore, whilst clearance and potential impact (albeit limited) would occur before the installation of the Marine Scheme, it would be within (encompassed by) the swathe associated with the installation process (i.e. the loss is considered essentially no greater than that which is associated with wider installation activity – already consented – and the addition is ecologically inconsequential).

High order detonation of three UXOs (10% of the total 30 UXOs along the English section of the marine installation corridor) is considered the maximum anticipated (although cannot be confirmed at this stage) which would equate to 0.0010 km² ⁴ (0.000541%⁵) of the MCZ.

In addition to disturbance from UXO clearance, there is also potential for the seabed to be temporarily disturbed during the investigation of UXOs where a ROV may be required to excavate the around the potential UXO. Excavation at depths greater than 10 m typically involves excavating with a ROV a small area of the seabed 2 m in diameter and 1 m in depth. Both the MCZ assessment for the Marine Scheme (EAR Appendix 8.1 – MPA and MCZ Assessment) and the MMO Assessment concludes the conservation features of the Farnes East MCZ will not be hindered by temporary physical disturbance during cable laying activities. It is expected that UXO excavation will not lead to more disturbance to benthic habitats and fauna than activities undertaken during cable installation, therefore the risk to protected features is low.

Broad Scale Habitat Features

The broadscale features considered in the assessment include the following four features:

- Moderate Energy Circalittoral Rock
- Subtidal Coarse and Mixed Sediment
- Subtidal Sand
- Subtidal Mud

The majority (89%) of the overlapping benthic habitat within the Farnes East MCZ, along marine installation with the corridor was established to be circalittoral mixed sediment with small, localised patches of bedrock reef (Chapter 8: Benthic Ecology of the EGL1 EA (AECOM, 2022)). The UXO clearance activities will cause highly localised and small scale seabed disturbance within the marine installation corridor, affecting a negligibly small proportion of the Farnes East MCZ.

Sediments in this location are subject to regular physical disturbance from storm events. Recoverability of the seabed is linked to substrate type (Newell *et al.*, 1998; Desperez, 2000) and generally, the sublittoral mixed sediment biotopes have a medium to high resilience and medium to low sensitivity to seabed disturbance (DeBastos *et al.*, 2023) with the nature of the sediment expected to recover quickly as sediments are naturally mobile, replenishing through natural processes.

Few areas of moderate energy circalittoral rock - 'medium reefiness' bedrock reef were identified along the marine installation corridor, including within the Farnes East MCZ during the benthic survey (approximately KP 84.2 (Chapter 8: Benthic Ecology of the EGL1 EA (AECOM, 2022))). The largest patch of moderate energy circalittoral rock is found > 10 km to the east of the marine installation corridor and therefore there is no potential for interaction. There is the potential for loss of moderate energy circalittoral rock if UXO detonation will be required in the location of the feature along the marine installation corridor. Although there is the bedrock reef identified, it is not widespread along the marine installation corridor and therefore there are limited opportunities for interaction. The mitigation will adopt a hierarchical approach, whereby high order clearance will be only a last resort and is therefore not expected to occur where instead other less impactful methods would be adopted preferentially, e.g. re-routing. To ensure no

⁴ Area of one UXO = (πr^2) = 3.142 * 10.5² = 346.4 m². Total area of 3 cUXO = 346.4 m² * 3 = 1,039.2 m² = 0.0010 km²

⁵ Percentage of MCZ disturbed – (0.0010 km²/192 km²) *100 = 0.000541%

hindrance of the conservation objectives, there will be no high order cUXO detonation in areas immediately adjacent (within 10.5 m (the WCS crater size of 10.5 m radius)) of any reef in the MCZ, without consultation with JNCC.

Given the widespread distribution of sediment within the surrounding area and the recoverability of sedimentary habitats, and the limited presence of subtidal bedrock reef, the UXO clearance activities will not affect, other than insignificantly, the maintenance (or recovery in the case of subtidal mud) of the extent or the structures, functions, quality and composition of characteristic biological communities, so as to ensure that they are not deteriorating.

Therefore, there is no significant risk of the seabed disturbance arising from the UXO clearance activities hindering the maintenance of the broad scale habitat features and therefore the achievement of the overall Conservation Objectives of the Farnes East MCZ.

Sea-Pen and Burrowing Megafauna Communities

The marine installation corridor as it passed through the Farnes East MCZ is not predicted to comprise of fine mud (EMODnet, 2023) which was confirmed during the EGL1 benthic survey (Chapter 8: Benthic Ecology of the EGL1 EA (AECOM, 2022)). Although during baseline surveys there was evidence of seapens (*Pennatula phosphorea* and *Virgularia* sp.) and the characteristic burrowing *Nephrops* (and burrows) along the marine installation corridor, none were identified within the Farnes East MCZ (Chapter 8: Benthic Ecology of the EGL1 EA (AECOM, 2022)). Despite this, it was concluded that due to sporadic observations, in addition to burrows within the wider Farnes East MCZ, the habitat observed had the potential (albeit limited) to support this habitat type. Sea-pen and burrowing megafauna communities experience a medium sensitivity to habitat disturbance (Hill *et al.*, 2023).

Due to the sensitivity of the sea-pen and burrowing megafauna communities (Hill *et al.*, 2023), injury and / or mortality to individuals as a result of seabed disturbance from UXO clearance activities cannot be ruled out. However, it is considered that as most species reproduce regularly (via planktonic larvae), recruitment is rapid, (Hill *et al.*, 2023), it is not expected there will be an impact at a population level (Chapter 8: Benthic Ecology of the EGL1 EA (AECOM, 2022)) from the marine installation corridor section, within the Farnes East MCZ.

Given the general absence of these species along the marine installation corridor, within the Farnes East MCZ, the UXO clearance activities will not affect, other than insignificantly, the restoration of the extent or the structures, functions, quality and composition of the sea-pen and burrowing megafauna communities, so as to ensure that they are not deteriorating. Therefore, there is no significant risk of the seabed disturbance arising from the UXO clearance activities hindering the recovery of the sea pen and burrowing megafauna community features and therefore the achievement of the overall Conservation Objectives of the Farnes East MCZ.

Ocean Quahog (*Arctica islandica*)

The sedimentary habitats along the marine installation corridor support ocean quahog and historically, juvenile ocean quahog have been found within the Farnes East MCZ, predominantly within the east but are also present in the south-west of the site⁶ (i.e., where the marine installation corridor passes through the MCZ) (Cefas, 2015). However, during the EGL1 baseline benthic survey, ocean quahog were absent (Chapter 8: Benthic Ecology of the EGL1 EA (AECOM, 2022)). Ocean quahog are considered sensitive to habitat disturbance (Tyler-Walters and Sabatini, 2017).

Due to the sensitivity of ocean quahog (Tyler-Walters and Sabatini, 2017), injury and / or mortality to individuals as a result of seabed disturbance from UXO clearance activities cannot be ruled out, however it is not expected there will be an impact at a population level due to general absence in the area from the marine installation corridor section, within the Farnes East MCZ (Chapter 8: Benthic Ecology of the EGL1 EA (AECOM, 2022)). Ocean quahog are slow growing have variable recruitment from surrounding areas and the species is considered to have a low resilience to habitat disturbance (Tyler-Walters and Sabatini, 2017). Baseline benthic survey data for the EGL1 Marine Scheme (AECOM, 2022) recorded no live specimens within the marine installation corridor, indicating that the species is generally absent or occurs only at very low densities in this area.

⁶ <https://assets.publishing.service.gov.uk/media/5a80400740f0b62305b8a0f0/mcz-farnes-east-feature-map.pdf>

Given the general absence of ocean quahog along the section of the marine installation corridor, within the Farnes East MCZ, the UXO clearance activities are not expected to have more than an insignificant effect on the restoration of the species' extent, structure or function. The activities will not hinder the maintenance or improvement of habitat quality or population structure required to support the recovery of the ocean quahog community within the site. Therefore, there is no significant risk of seabed disturbance arising from the UXO clearance activities hindering the recovery of the ocean quahog feature or the achievement of the Conservation Objectives of the Farnes East MCZ.

Therefore, there is no significant risk of the seabed disturbance arising from the UXO clearance activities hindering the recovery of the ocean quahog features and therefore the achievement of the overall Conservation Objectives of the Farnes East MCZ.

6.1.3.2. Changes to Water Quality

The UXO clearance activities themselves will not lead to changes in water quality, however will lead to increases in SSC in the water column linked to water quality. The Farnes East features are all considered not sensitive (Table 5.2) to increased noise and vibration and therefore are not considered further. The broad scale habitats are considered not sensitive to changes in water quality in accordance with the Marine Evidence-based Sensitivity Assessment (MarESA) database (Tyler-Walters et al., 2022) and Natural England's MCZ feature sensitivity assessments (Natural England, 2021).

The UXO high order clearance also has the potential to resuspend heavy metals and other contaminants, bound within the seabed sediment. Baseline survey data confirmed the presence of contaminants including heavy metals and hydrocarbons, however these were concentrated towards the south of the marine installation corridor where finer sediments are present. The EA for the EGL1 cable installation assessed the potential effects of the disturbance of sediment bound contaminants on benthic ecology as not significant. It is considered that, given the sediment is coarser within the MCZ, and the UXO high order clearance will result in a considerably smaller area of disturbance, the potential effects of the disturbance of sediment bound contaminants is not significant.

Sea-pens and burrowing megafauna in circalittoral fine mud is not sensitive to changes in solids (water clarity). Sea-pens may experience some temporary reduction in feeding success whilst elevated SSC altering water clarity, but normal feeding will quickly resume with immediate recovery, following the return to background sediment levels (Hill *et al.*, 2023) (i.e., within days of activities taking place due to dilution and dispersion of sediment in the water column) (Chapter 7: Physical Environment of the EGL1 EA (AECOM, 2022)).

Ocean quahog are naturally found in areas with high wave exposure and therefore are adapted to periodic mobilisation and accretion of sediment. Give their ability to burrow and adaptation to fluctuations in suspended sediments, they are considered not sensitive to changes in water clarity (Tyler-Walters and Sabatini, 2017).

The main activity with the potential to lead to changes in water quality is via the increased presence of vessels within the Farnes East MCZ, and the associated risk of accidental pollution incidents arising from fuels, oils and chemicals from vessels.

Vessels will be required to adhere to strict pollution control including compliance with IMO (International Maritime Organisation) conventions including COLREGs (Convention on the International Regulations for Preventing Collisions at Sea) and SOLAS (International Convention for the Safety of Life at Sea) to ensure standard levels of navigation and vessel safety are adhered to and waste management on board vessels will be covered the Merchant Shipping (Prevention of Pollution by Sewage and Garbage from Ships) Regulations 2008. These regulations implement revised Annex IV of MARPOL 73/78 (Regulations for the Prevention of Pollution by Sewage from Ships), and Annex V of MARPOL 73/78 (including amendments) (Regulations for the Prevention of Pollution by Garbage from Ships).

The Marine Scheme will take measures to keep the risk of accidental spills to ALARP, therefore the risk of changes to water quality occurring is unlikely. The marine installation corridor is in an area of existing heavy vessel usage and the additional vessels required for the UXO clearance activities will not add significant risk to changes in water quality.

Given the low likelihood of changes in water quality and the mitigation in place, the UXO clearance activities will not affect, other than insignificantly, the maintenance (or recovery in the case of subtidal mud, seapen and burrowing megafauna communities and ocean quahog features) of the extent or the structures, functions, quality and composition of characteristic biological communities, so as to ensure that they are not deteriorating.

Therefore, there is no significant risk of changes in water quality arising from the UXO clearance activities hindering the maintenance (or recovery in the case of subtidal mud, seapen and burrowing megafauna communities and ocean quahog features) of the broad scale habitat features and therefore the achievement of the overall Conservation Objectives of the Farnes East MCZ.

6.1.4. Cumulative Effects

At the time of writing, there are no plans, projects or activities overlapping the Farnes East MCZ either spatially or temporally which are expected overlap with the UXO clearance activities and therefore no potential for direct cumulative effects. Any indirect effects from any nearby works (e.g., Berwick Bank Offshore Wind Farm Cambois Connection,) are considered too far away in distance⁷ or too small in scale to contribute to a cumulative effect.

Therefore, there is no significant risk of changes in water quality arising from the UXO clearance activities, acting cumulatively with other plans and projects, hindering the maintenance (or recovery in the case of subtidal mud, seapen and burrowing megafauna communities and ocean quahog features) of the broad scale habitat features and therefore the achievement of the overall Conservation Objectives of the Farnes East MCZ.

⁷ The Cambois Connection is presented here for completeness, however based on information within the public domain, this is understood to be avoiding the eastern edge of the Farnes East MCZ – i.e., it is significant distanced from EGL1, which passes through the far western edge of the large site.

7. Summary and Conclusion

During screening the Berwick to St Mary's and Coquet to St Mary's MCZs were screened out as there is no connectivity to the Marine Scheme. The Farnes East MCZ was screened in as it was determined two pressures have the potential to affect protected features: seabed disturbance and changes to water quality.

The location of cUXO will be avoided as far as possible, with a hierarchical approach to addressing UXO applied thereafter, with high order detonation used only as a last resort. Following the UXO geophysical identification survey, a total of 30 cUXO have been identified along the English section of the marine installation corridor. Initial results suggest 10% of these will require high order clearance. This assessment has adopted a precautionary approach to assessment and assumed that all 3 would require high order detonation within the MCZ, however it is acknowledged this is highly unlikely and in practice, the majority of those which require high order clearance would be along the entire marine installation corridor (i.e., not concentrated within the MCZ).

The greatest risk is direct disturbance of benthic habitats occurring from potential UXO detonation. Protected features are present along the marine installation corridor, but do not overlap with the MCZ. Work will be highly localised and temporary and suitable mitigation including adherence to pollution control measures will be in place.

Given the limited spatial extent and temporary nature of the UXO clearance activities, and considering the absence of the most sensitive receptors (ocean quahog and the seapens and burrowing megafauna in circalittoral fine mud habitat) along the marine installation corridor within the Farnes East MCZ, this Stage 1 assessment concluded there is no significant risk of UXO clearance works hindering the achievement of the Conservation Objectives for the Farnes East MCZ and Stage 2 MCZ assessment is not required.

8. References

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