




## **Cambois Connection – Marine Scheme**

### **Environmental Statement – Volume 5**

#### **Appendix 14.2: Outline Written Scheme of Investigation and Protocol for Archaeological Discoveries**

	<b>Cambois Connection – Marine Scheme</b> <b>Appendix 14.2: Outline Written Scheme of Investigation and Protocol for Archaeological Discoveries</b>	Doc No: A-100796-S01-A-REPT-031
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# Cambois Connection Marine Scheme

Marine Archaeological Outline  
Written Scheme of Investigation

Report Ref.: 266910.03  
July 2023



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# Cambois Connection Marine Scheme

## Marine Archaeological Outline Written Scheme of Investigation

### 1 INTRODUCTION

#### 1.1 Project and planning background

1.1.1 Wessex Archaeology has been commissioned by Xodus Group Ltd. on behalf of the Applicant, to produce an outline written scheme of investigation (WSI) for proposed the marine component of the Cambois Connection (Marine Scheme). The Marine Scheme extends from the Berwick Bank Wind Farm (BBWF) array area through Scottish offshore waters (in the 12-200 nautical miles (nm) zone), then through English offshore waters (12 – 200 nm) and inshore waters (Mean High Water Springs (MHWS) – 12 nm), and making landfall at Cambois, Northumberland (Figure 14.1).

1.1.2 This WSI is prepared in support of the Environment Statement (ES) for the Marine Scheme (Volume 2 Chapter 14: Marine Archaeology and Cultural Heritage). It is informed by a baseline review of known and potential archaeology within the Marine Archaeological technical report (Volume 3, Appendix 14.1: Marine Archaeology Technical Report).

#### 1.2 Development description

1.2.1 The Marine Scheme of Cambois Connection is comprised of up to four High Voltage Direct Current (HVDC) subsea cables, each approximately 180 km in length from BBWF to a landfall location at Cambois, Northumberland. The Offshore Export Cables will be installed within an installation corridor with a 1 km maximum width<sup>1</sup> (Figure 14.1). Please refer to Volume 2, Chapter 5: Project Description of the ES for a full description of the Marine Scheme, including infrastructure, methods and programme.

#### 1.3 Scope of document

1.3.1 This Outline WSI sets out the aims of the offshore investigation, and the methodologies and standards that will be employed by the Developer and Retained Archaeologist to implement the mitigation strategy set out in the ES (Volume 2 Chapter 14: Marine Archaeology and Cultural Heritage). In format and content, it conforms to current best practice and to the guidance outlined in *Management of Research Projects in the Historic Environment* (MoRPHE, Historic England 2015a), the Joint Nautical Archaeology Policy Committee *Code of Practice for Development* (JNAPC 2006) and the relevant guidance from the Chartered Institute for Archaeologists (CIfA) (CIfA 2014a-g), as applicable.

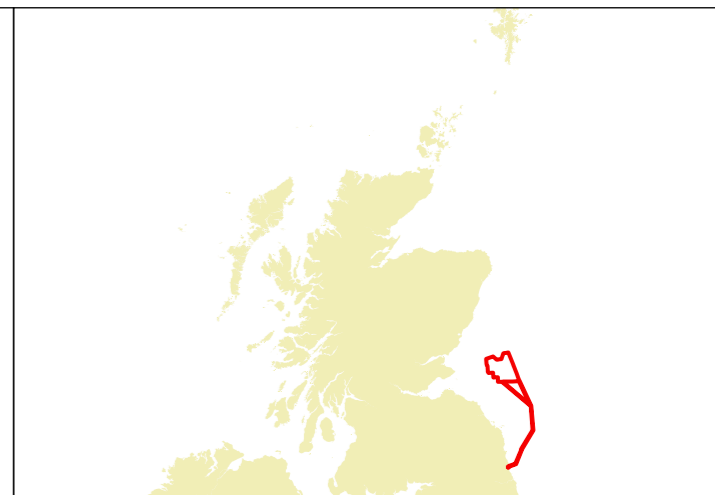
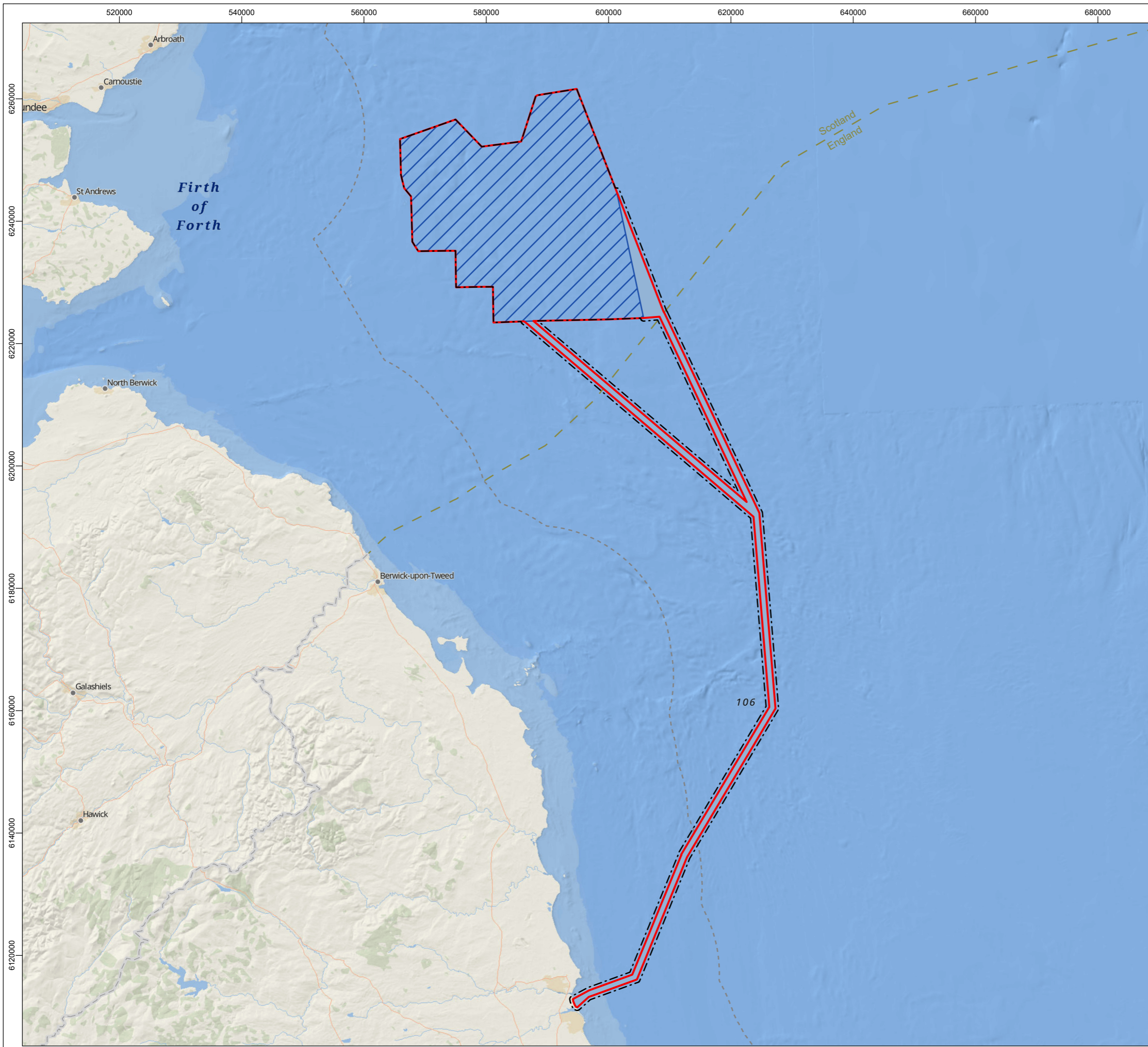
1.3.2 This document will be submitted to MD-LOT and the MMO for approval prior to the commencement of any investigative work, including input from consultation bodies such a Historic England (HE) and Historic Environment Scotland (HES) where required. This could

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<sup>1</sup> The Offshore Export Cable Corridor entering into the eastern part of the BBWF array area is currently presented as a funnel which is wider than 1km. This wider funnel is required to allow for connection into OCSPs either in the northern or southern parts of the eastern section of the array area. The Offshore Export Cable route will be significantly less than 1km wide. The study areas for each EIA topic will account for the wider than 1km corridor at this specific section of the Offshore Export Cable Corridor. Where the Offshore Export Cable Corridor approaches the Landfall, the corridor widens to approximately 2.4 km across Cambois beach.



include methodologies for recovering and reporting material or development works that could impact a protected site under the *Protection of Military Remains Act 1986*.



- Legend**
- Marine Scheme Boundary
  - Berwick Bank Wind Farm Array Area
  - Marine Scheme Offshore Export Cable Corridor
  - Marine Archaeology Study Area
  - UK 12 Nautical Mile Limit
  - Scotland/England Territorial Waters

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Project  
**CAMBOIS CONNECTION**

Title  
**FIGURE 14.1  
 SITE LOCATION**



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1:600,000	A3	WGS84	UTM30N
Drawing Number			Sheet No.
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## **2 THE ARCHAEOLOGICAL ASSESSMENT AREAS**

### **2.1 Co-ordinate system**

2.1.1 For all aspects of this report, positions are reported in WGS84 UTM30N.

### **2.2 Archaeological Assessment Areas**

2.2.1 The study area for the marine cultural heritage assessment was defined on the basis of the area over which potential direct and indirect effects of the Marine Scheme are predicted to occur on marine heritage receptors during construction, operation and maintenance, and decommissioning. This comprises the boundary of the Marine Scheme including the intertidal area to MHWS, plus a 500 m buffer around the boundary of the Marine Scheme (Figure 14.1). It should be noted that as Berwick Bank Wind Farm (BBWF) has been previously reported on (Berwick Bank Wind Farm Limited (BBWFL), 2022), including a marine geophysical data assessment, an additional 500 m buffer was not required around that part of the Marine Scheme which overlaps BBWF array area.

2.2.2 The buffer allows for a greater understanding of the wider archaeological baseline environment, with the dual purpose of enabling any archaeological trends within the region to be recognised and to allow any marine heritage assets identified to be represented in a broader archaeological context.

2.2.3 The Array Area of Berwick Bank Wind Farm (BBWF) has also been included in the overview of the baseline environment for marine heritage receptors (BBWFL, 2022a). Mitigation for these receptors has already been proposed (BBWFL, 2022b) (Figure 14.1). The main mitigation elements are consistent with the approach developed in this document.

2.2.4 Archaeological assessment of marine geophysical data has been undertaken for the Marine Scheme in English waters (Volume 3, Appendix 14.1: Marine Archaeology Technical Report).

## **3 AIMS AND OBJECTIVES**

### **3.1 Aims**

3.1.1 The aim of the WSI is to put in place the archaeological mitigation set out in the ES (Volume 2, Chapter 14: Marine Archaeology and Cultural Heritage).

### **3.2 Objectives**

3.2.1 The objectives of this Outline WSI are as follows:

- to fulfil the requirements of MD-LOT and the MMO including in consultation with relevant consultees in respect of archaeological monitoring and mitigation works associated with the Marine;
- to provide the position and extent of Archaeological Exclusion Zones (AEZs) that may be required, and to establish methods for their monitoring, modification and/or removal in the future;
- to ensure consultation with archaeologists on all elements of the Marine Scheme's design that have the potential to impact archaeological sites and materials;
- to provide for any further geophysical and geotechnical investigations associated with the Marine Scheme to be subject to archaeological input, review, recording and sampling;



- to propose measures for the mitigation of unexpected archaeological remains encountered during further survey work or construction work associated with the Marine Scheme; and
- to establish the reporting and archiving requirements for the archaeological works undertaken during construction and post-construction monitoring.

### 3.3 Addressing questions from the Research Agendas

3.3.1 Outcomes of archaeological survey work is expected to contribute to wider archaeological knowledge. Example Themes and areas of research from the Research Agendas will inform survey designs and will be addressed in the results of any reports where relevant (**Table 1**).

**Table 1** Themes/areas for future research from the Research Agenda(s)

Research Agenda	Theme/Question
North Sea Prehistory Research and Management Framework (NSPRMF, 2023)	<ul style="list-style-type: none"> <li>- E. What was the climatic, landscape and environmental context of prehistoric human activity?</li> <li>- F1. What processes have impacted on the potential for survival of archaeological evidence?</li> </ul>
North-East Regional Research Framework for the Historic Environment (NERF, 2023)	<ul style="list-style-type: none"> <li>- Pmed9: What was the role of the sea and the maritime economy in NE England in the post-medieval period?</li> <li>- MO15: What can archaeology and historic building recording contribute to a better understanding of 20th century shipbuilding in the region?</li> <li>- MO17: How can we recover the landscapes of the modern fishing industries?</li> </ul>

## 4 ROLES, RESPONSIBILITIES AND COMMUNICATION

### 4.1 The Applicant

- 4.1.1 The Applicant and/or their appointed Construction Contractor(s) will be responsible for arranging the implementation of this WSI and the existing mitigation measures, such as AEZs.
- 4.1.2 The Applicant and/or their Construction Contractor(s) will commission a Retained Archaeologist. A Retained Archaeologist will be engaged to implement the agreed mitigation secured through a WSI. The Retained Archaeologist will provide input into specifications for further surveys and archaeological analysis of the outputs from any pre-construction surveys (for example, geophysical and geotechnical), and will provide advice regarding any archaeological finds which occur during construction.
- 4.1.3 The Applicant and/or their Construction Contractor(s) will consult the Retained Archaeologist during the planning stages for any further work.
- 4.1.4 The Applicant and/or their Construction Contractor(s) will commission, as appropriate, Archaeological Method Statements prior to works being undertaken that may impact the seabed, which will detail how the archaeological elements will be carried out and the measures that will be taken.
- 4.1.5 The Applicant and/ or their appointed Construction Contractor(s), or any archaeological body they may appoint to manage the implementation of the outline offshore archaeological WSI, will seek curatorial advice from the Archaeological Curator(s) as appropriate.



- 4.1.6 Interaction with the Archaeological Curator(s) will be administered by the Applicant and/or their appointed Construction Contractor(s) with advice where appropriate through the Retained Archaeologist. If a new site of archaeological importance is discovered during works, the Archaeological Curator(s) will be contacted as soon as practicable.
- 4.1.7 The Applicant and/or their appointed Construction Contractor(s) will be responsible for administering the obligations of the *Merchant Shipping Act 1995* with specific regard to reports of wreck and salvage and will address droit reports appropriately. Material identified as 'wreck' will be reported to the Receiver of Wreck within 28 days of discovery. The Retained Archaeologist will be kept updated with relevant updates or changes to the droits reports, particularly if they hold any recovered material.
- 4.1.8 The Applicant and/or their Construction Contractor(s) will provide the Retained Archaeologist with relevant project datasets, so that they are in an informed position to advise the Client. This will particularly be undertaken between the planning and construction phases.
- 4.1.9 The Applicant's and/or their appointed Construction Contractor(s) will make project personnel aware of this outline offshore archaeological WSI, any AEZs in force, and a bespoke Protocol for Archaeological Discoveries.

## **4.2 Retained Archaeologist**

- 4.2.1 The Retained Archaeologist will oversee archaeological mitigation to provide consistency throughout the project, as required, and will implement the WSI.
- 4.2.2 The Retained Archaeologist will produce Archaeological Method Statements for works, as appropriate, for issue to MD-LOT and the MMO in consultation with the relevant Archaeological Curator (HES and HE, respectively) for approval.
- 4.2.3 The Retained Archaeologist will act as the first contact for any unexpected archaeological discoveries. The Retained Archaeologist will cover the administration of the reporting of discoveries made by the Applicant and/or their Construction Contractor(s) and will provide initial actions, including recording, handling and storage, and introduction of measures to prevent or reduce damage if the presence of a significant archaeological site is suspected.
- 4.2.4 The Retained Archaeologist will ensure any unexpected discoveries of archaeological material are assessed, as per the protocol (see section 9.6), and reported to the relevant curators and stakeholders via the Applicant (BBWFL). Recovered material identified as 'wreck' must be reported to the Receiver of Wreck by the Retained Archaeologist within 28 days of discovery. The Applicant and/or their Construction Contractor(s) will be involved with the submission of this report and all following correspondence.

## **4.3 Archaeological Curator(s)**

- 4.3.1 Historic England (HE) is specialist advisor on cultural heritage and archaeology to the Marine Management Organisation (MMO) for the Marine Scheme in English waters.
- 4.3.2 Historic Environment Scotland (HES) is specialist advisor on cultural heritage and archaeology to the MD-LOT for the Marine Scheme in Scottish waters.
- 4.3.3 Method statements for archaeological works will be submitted to the relevant Archaeological Curator for comment/approval 30 working days prior to the planned commencement of



surveys/works, in order to allow for sufficient time for the review and any amendments to be completed and agreed.

#### **4.4 Other Key Stakeholders**

##### *Receiver of Wreck*

4.4.1 Material identified as 'wreck' that has either been recovered within UK territorial waters or brought into UK territorial waters must be reported to the Receiver of Wreck under the *Merchant Shipping Act 1995*. The Receiver of Wreck is located within the Maritime Coastguard Agency and works with other government departments and heritage organisations.

4.4.2 Wreck material is reported to the Receiver of Wreck via their website: <https://www.gov.uk/report-wreck-material>

4.4.3 The Receiver of Wreck's contact details are as follows, as may be updated from time to time:

- Maritime & Coastguard Agency, Spring Place, 105 Commercial Road, Southampton, SO15 1EG. Tel: 0203 817 2575. Email: [row@mca.gov.uk](mailto:row@mca.gov.uk)

4.4.4 Further details about how to manage discoveries of wreck material can be found in Section 10.6.

##### *Ministry of Defence*

4.4.5 Under the *Protection of Military Remains Act 1986*, any aircraft that crashed while in military service are automatically protected. Therefore, based on the precautionary principal, all finds or sites of aircraft should be reported to the Joint Casualty and Compassionate Centre (JCCC) of the Ministry of Defence (MoD), unless it can be proven without a doubt that the aircraft material is non-military. In any case, all finds of aircraft material should also be reported to the Receiver of Wreck.

4.4.6 Further details about how to manage discoveries of aircraft material, including restrictions, licensing, and guidance can be found in Section 10.5.

##### *Local Authority Archaeology Service*

4.4.7 Northumberland County Council is the local authority responsible for archaeology within Northumberland landward of mean low water springs (MLWS), and the MMO have responsibility seaward of mean high water springs (MHWS). Responsibility is overlapped within the intertidal zone.

#### **4.5 Archaeological Contractor(s)**

4.5.1 Archaeological Contractor(s) may be appointed to carry out specific packages of work, for example works beyond the in-house capabilities of the Retained Archaeologist, or additional works, as required. The Archaeological Contractor(s) may be appointed by the Applicant or their appointed representatives (the Applicant, the Retained Archaeologist or other contractors/ sub-contractors). In these instances, the Archaeological Contractor will ensure that works are specified, planned, undertaken and reported in accordance with this outline Marine Scheme archaeological WSI.

#### **4.6 Applicant Contractors**

4.6.1 The responsibility for implementing the marine archaeological WSI rests with the Applicant and their appointed representatives (including their Contractors).



4.6.2 All relevant Contractors engaged in the construction of the Marine Scheme shall:

- familiarise themselves with the requirements of the outline offshore archaeological WSI and make them available to all of their staff working on the Marine Scheme (e.g. for Protocol briefings and archaeological input into method statements);
- communicate with the Retained Archaeologist in the planning stages of any further survey work, to ensure archaeological objectives are included, as appropriate;
- implement a Protocol for Archaeological Discoveries;
- obey legal obligations in respect of 'wreck' and 'treasure' under the *Merchant Shipping Act 1995* and the *Treasure Act 1996*, respectively;
- obey legal obligations in respect of *Protection of Military Remains Act 1986*.
- respect constraint maps and AEZs;
- assist and afford access to archaeologists employed by the Applicant; and
- inform the Retained Archaeologist of any environmental constraint or matter relating to health, safety and welfare of which they are aware that is relevant to the archaeologists' activities.

#### 4.7 Stakeholder Liaison

4.7.1 Key stakeholder liaison regarding marine cultural heritage and archaeology is fully detailed in Table 14.3 of Volume 2, Chapter 14: Marine Archaeology and Cultural Heritage. Further information relating to engagement will be detailed once the WSI is fully development.





## 5 ARCHAEOLOGICAL BASELINE SUMMARY

### 5.1 Introduction

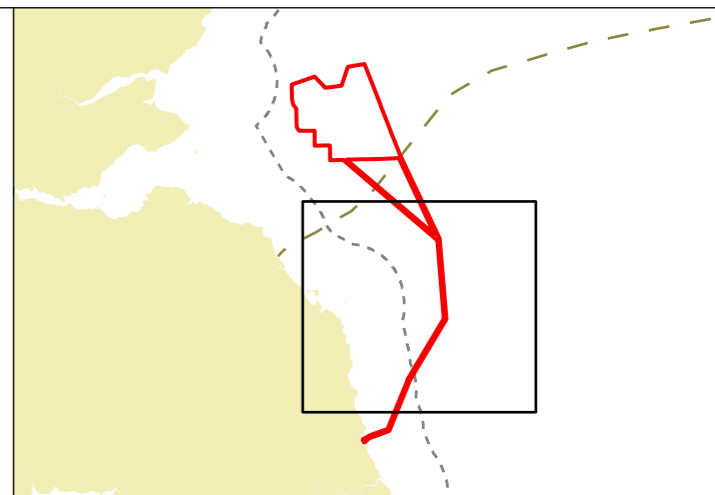
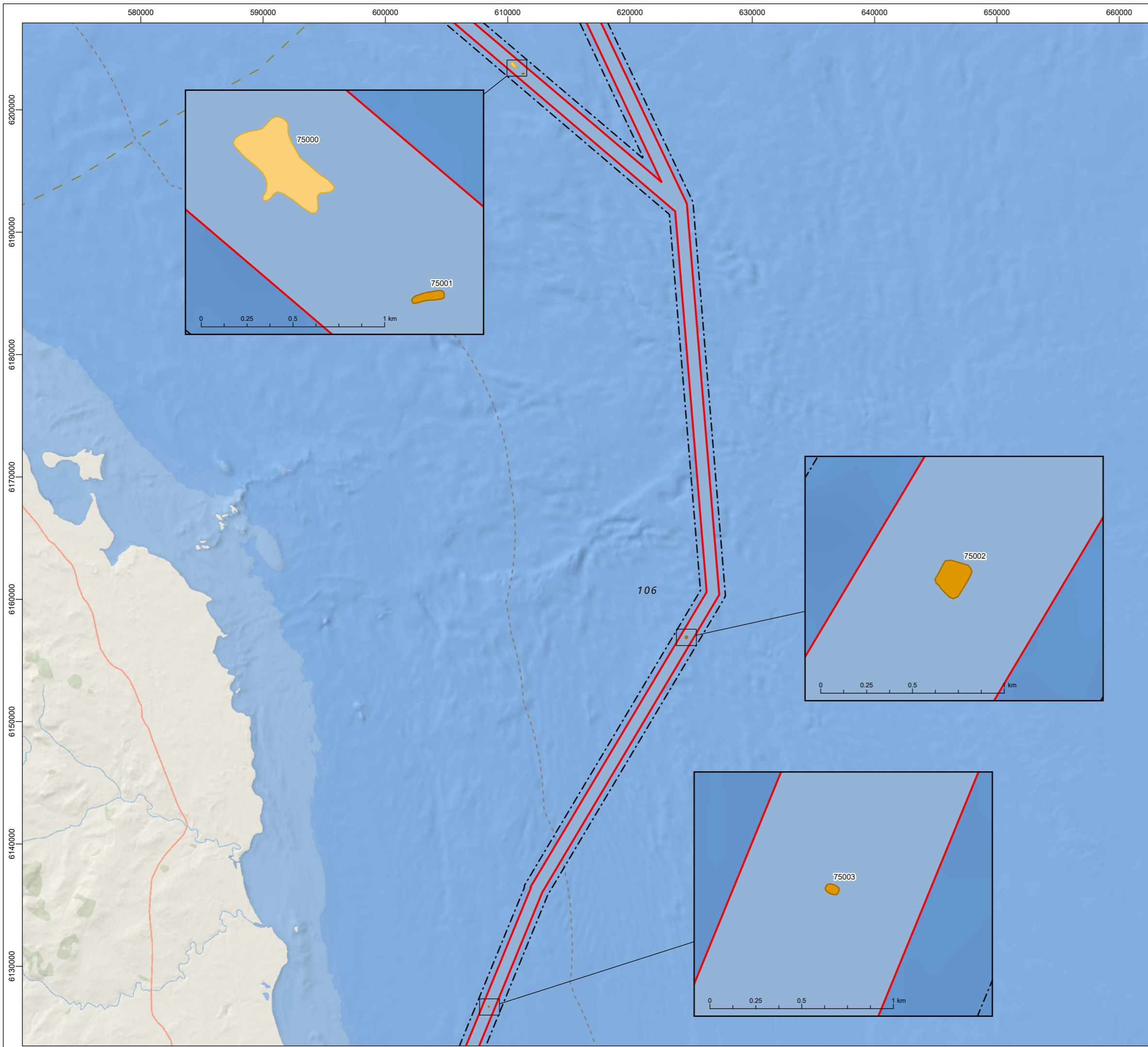
5.1.1 A desk-based assessment was undertaken in order to characterise the marine archaeological baseline in the study area (Volume 3, Appendix 14.1 Marine Archaeology Technical report). This assessed the known and potential marine archaeological resource within the study area up to the MHWS. The results of the baseline assessment are summarised here and gazetteers of known maritime and intertidal archaeology receptors are included in **Appendices 1** and **2** (Figures 14.2 – 14.4). The Berwick Bank Wind Farm array area (of which part of the Marine Scheme overlaps in Scottish waters) has also been subject to a desk based assessment, and assessment of geophysical data (BBWFL 2022a).

### 5.2 Summary of known and potential archaeological assets

#### *Seabed Prehistory*

5.2.1 There are no known prehistoric sites within the Marine Archaeology study area.

5.2.2 However, the palaeogeographic assessment for the Marine Scheme in English waters has identified a small number of features of archaeological interest, sporadically distributed across the Marine Scheme in English waters (Volume 3, Appendix 14.1: Marine Archaeology Technical Report) (Figure 14.2).



- Legend**
- Marine Scheme Boundary
  - Marine Scheme Offshore Export Cable Corridor
  - Marine Archaeology Study Area
  - UK 12 Nautical Mile Limit
  - Scotland/England Territorial Waters
- Palaeogeographic features of archaeological potential**
- Cut and fill
  - Dune feature

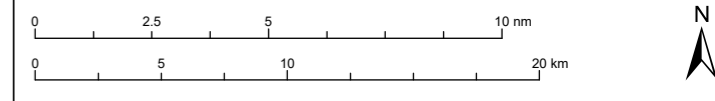
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Project  
**CAMBOIS CONNECTION**

Title  
**FIGURE 14.2  
PALAEOGEOGRAPHIC FEATURES OF  
ARCHAEOLOGICAL POTENTIAL**



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### English Offshore Waters

- 5.2.3 Two cut and fill features in the interpreted till surface (75001, 75002) have also been reported and characterised as features of possible archaeological interest (P2).

### English Inshore Waters

- 5.2.4 A further possible cut and fill feature cut into interpreted till has been identified in English inshore waters (75003); of possible archaeological interest (P2).

### *Known maritime*

- 5.2.5 There are no sites within the Marine Archaeology Study Area that are subject to statutory protection from the Protection of Wrecks Act 1973, the Protection of Military Remains Act 1986 or the Ancient Monuments and Archaeological Areas Act 1979; the three principal statutes that could be used to protect marine archaeological sites.

### Scottish Offshore Waters

- 5.2.6 Three known sites are located within the Scottish Exclusive Economic Zone (EEZ) (Figure 14.3A), consisting of the Swedish steamship Oswin (2004), one unknown wreck (2015) and a large piece of associated debris (2019).

- 5.2.7 Based on the desk based assessment and archaeological assessment of geophysical data for BBWF, there are 11 anomalies of high potential and 20 anomalies of medium potential in the BBWF array area (BBWFL, 2022a). All anomalies of high and medium potential within the BBWF array area have previously been proposed by the Applicant as part of the consent application for BBWF to be protected in Archaeological Exclusion Zones (AEZs) (BBWFL, 2022b) (Figure 14.3a).

### English Offshore Waters

- 5.2.8 Five documented sites are located within the English EEZ (Figure 14.2), including the possible wreck of the British trawler Acantha (70056), three unknown wrecks (70022, 70039, 70074), and the loss position of British steamship San Bernardo (70072).

- 5.2.9 In addition, a notable elongated mound (20.4 x 8.0 x 2.2 m) interpreted as a possible piece of debris was recorded in the assessment of geophysical data (70041) and has been characterised a high archaeological potential (A1 – anthropogenic origin of archaeological interest (see Volume 3, Appendix 14.1: Marine Archaeology Technical Report for full details on archaeological characterisation methodology)), and considered of high potential value.

- 5.2.10 Furthermore, one feature (70040) a large elongate depression containing a possible internal mound, has been characterised as being of likely anthropogenic origin but of unknown date (A2\_h).

- 5.2.11 Sixty-nine other anomalies have been characterised as possible archaeological interest but interpretation is uncertain (A2\_l); they may be anthropogenic or a natural feature.

### English Inshore Waters

- 5.2.12 Ten known sites are located within English inshore waters (Figure 14.2). These include the probable wreck of HMSM Unity (70087), the British steamship Svava (70086), the possible steamship Ragnhild (70088), the British collier Bangarth (70089), a wreck site possibly of HMS Herring (70083), three obstructions (70091, 70102, 70103), possible debris (70085) and a rectangular timber with metal strip observed during seabed development in 2017 (70104).



5.2.13 Furthermore, three features (70105, 70106, 70108) comprise debris characterised as being of likely anthropogenic origin but of unknown date (A2\_h).

5.2.14 Twenty anomalies have been characterised as possible archaeological interest, but interpretation is uncertain (A2\_l); they may be anthropogenic or a natural feature.

*Maritime and aviation archaeological potential*

5.2.15 There is the potential for further unknown maritime, aircraft and seabed prehistory sites and artefacts to be located within the study area.

Maritime potential

5.2.16 Recorded Losses can be considered as an indication of the potential for archaeological maritime remains to exist within the Marine Archaeology study area and the type and number of wrecks that could be present. These records relate to vessels reportedly lost or for which no physical wreck remains have ever been identified. Records from the region indicate higher numbers of 19<sup>th</sup> century losses but vessels from earlier and more recent periods have potential to have been lost (Volume 3, Appendix 14.1: Marine Archaeology Technical Report).

Aviation potential

5.2.17 There are no known aircraft crash sites located within the Marine Archaeology study area. Nonetheless, there is the potential for aircraft or aircraft-related debris to exist on the seafloor. Given the identified potential of the Marine Archaeology study area for military aircraft crashes (Wessex Archaeology, 2008), particularly relating to the Second World War, the likelihood would be for any aircraft crash to be of military origin, which would be protected under Protection of Military Remains Act 1986 and therefore would be of high value. This applies to the fabric of the aircraft and applies to both complete aircraft wrecks and debris scatters.

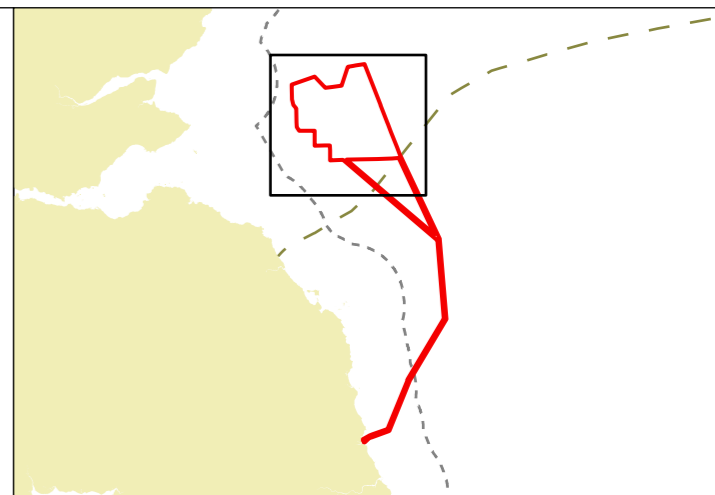
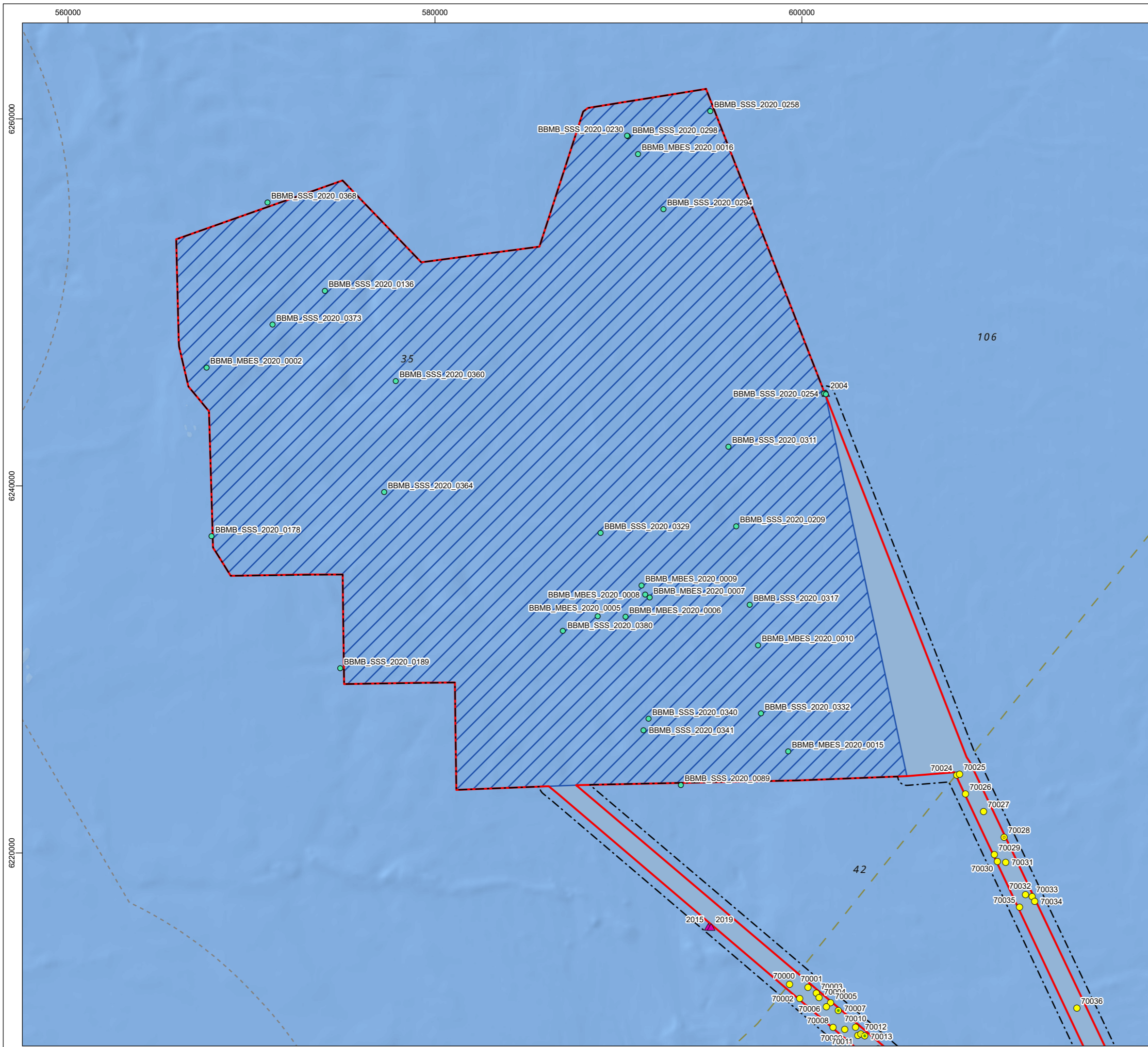
*Intertidal*

5.2.18 There are two intertidal heritage assets within the study area (**Appendix 2**).

5.2.19 There is one known site within the intertidal zone located within the part of the Marine Scheme in English waters (Figure 14.4). The site (WA1003) consists of a Second World War trench located on Cambois Beach. However, according to HER record, this has since been demolished.

5.2.20 During the intertidal walkover survey, no additional sites or features of archaeological interest were observed.

5.2.21 There is the potential for further unknown heritage assets to be located within the intertidal zone of the Marine Archaeology study area. These assets may be of a maritime nature, relating to coastal infrastructure, or may represent individual finds.



**Legend**

- Marine Scheme Boundary
- Berwick Bank Wind Farm Array Area
- Marine Scheme Offshore Export Cable Corridor
- Marine Archaeology Study Area
- UK 12 Nautical Mile Limit
- Scotland/England Territorial Waters
- ▲ Marine Heritage Assets (Cambois Connection)
- Marine Heritage Assets (Berwick Bank Wind Farm Surveys)

**Seabed features of archaeological potential (Cambois Connection surveys)**

- A2\_I – Uncertain origin of possible archaeological interest (low priority)

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Project: **CAMBOIS CONNECTION**

Title: **FIGURE 14.3A  
MARINE HERITAGE ASSETS**

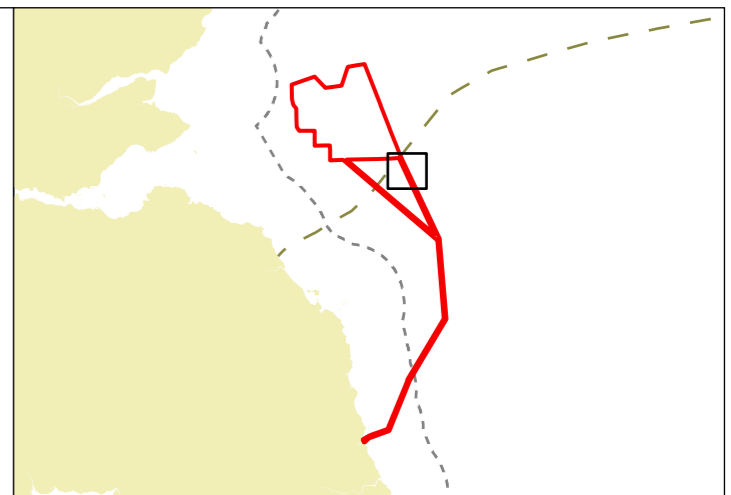
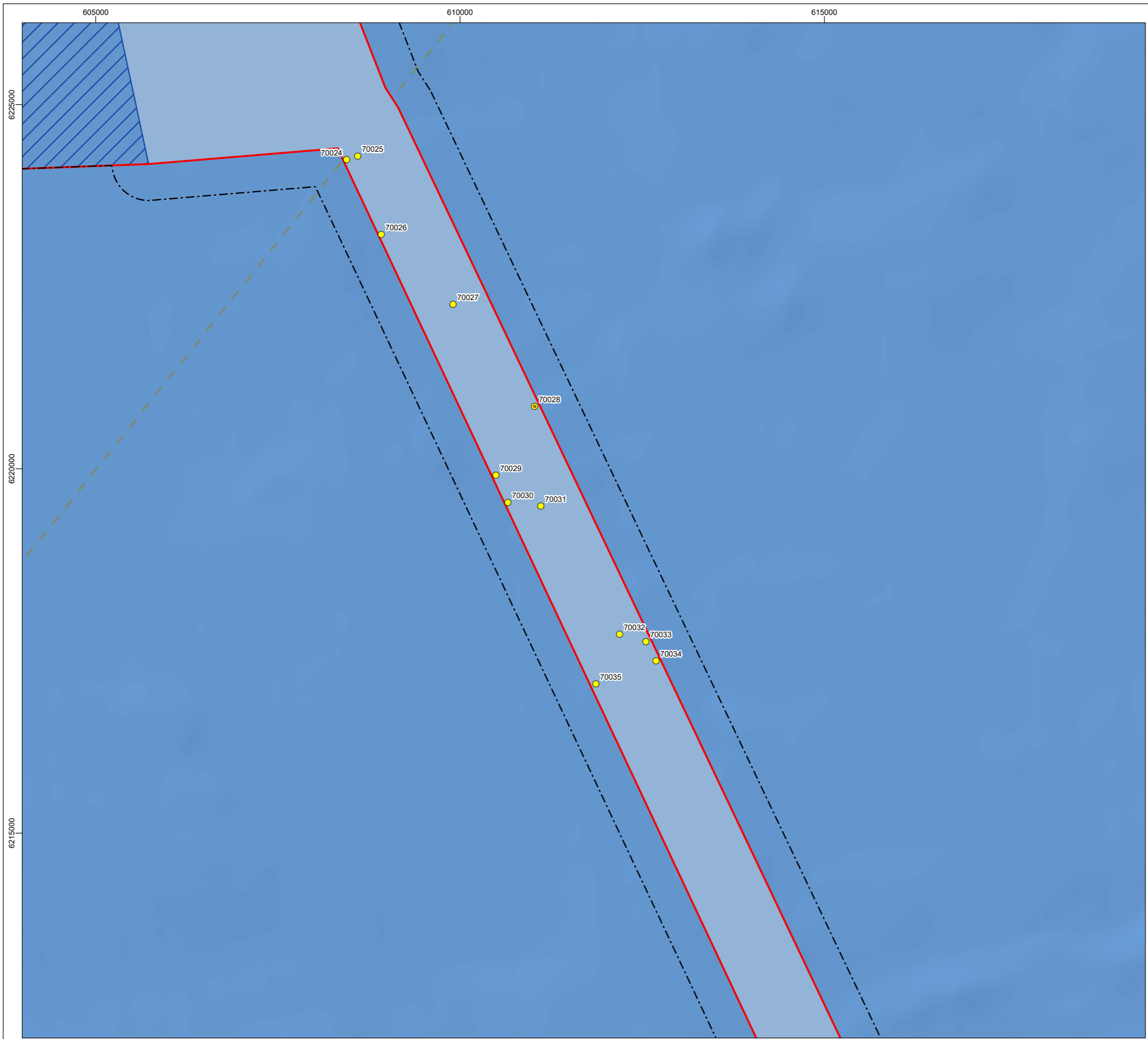
0 2 4 6 8 nm

0 2.5 5 10 km

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**Legend**

- Marine Scheme Boundary
- Berwick Bank Wind Farm Array Area
- Marine Scheme Offshore Export Cable Corridor
- Marine Archaeology Study Area
- UK 12 Nautical Mile Limit
- Scotland/England Territorial Waters

Seabed features of archaeological potential (Cambois Connection surveys)

- A2\_1 – Uncertain origin of possible archaeological interest (low priority)

Seabed feature boundaries

- Depression

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Project: **CAMBOIS CONNECTION**

Title: **FIGURE 14.3B  
MARINE HERITAGE ASSETS**

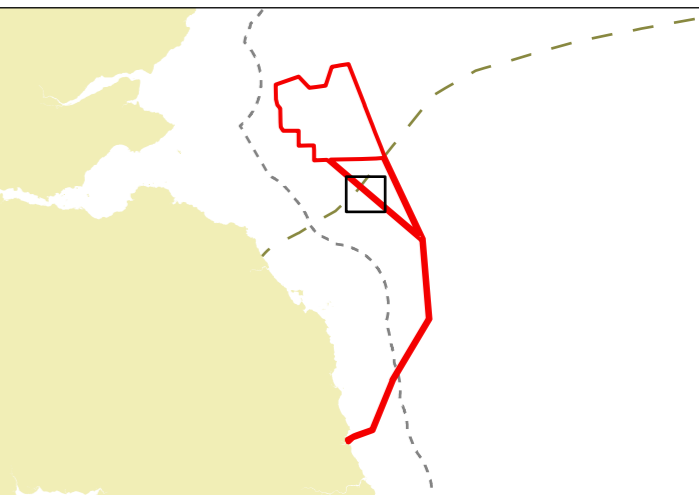
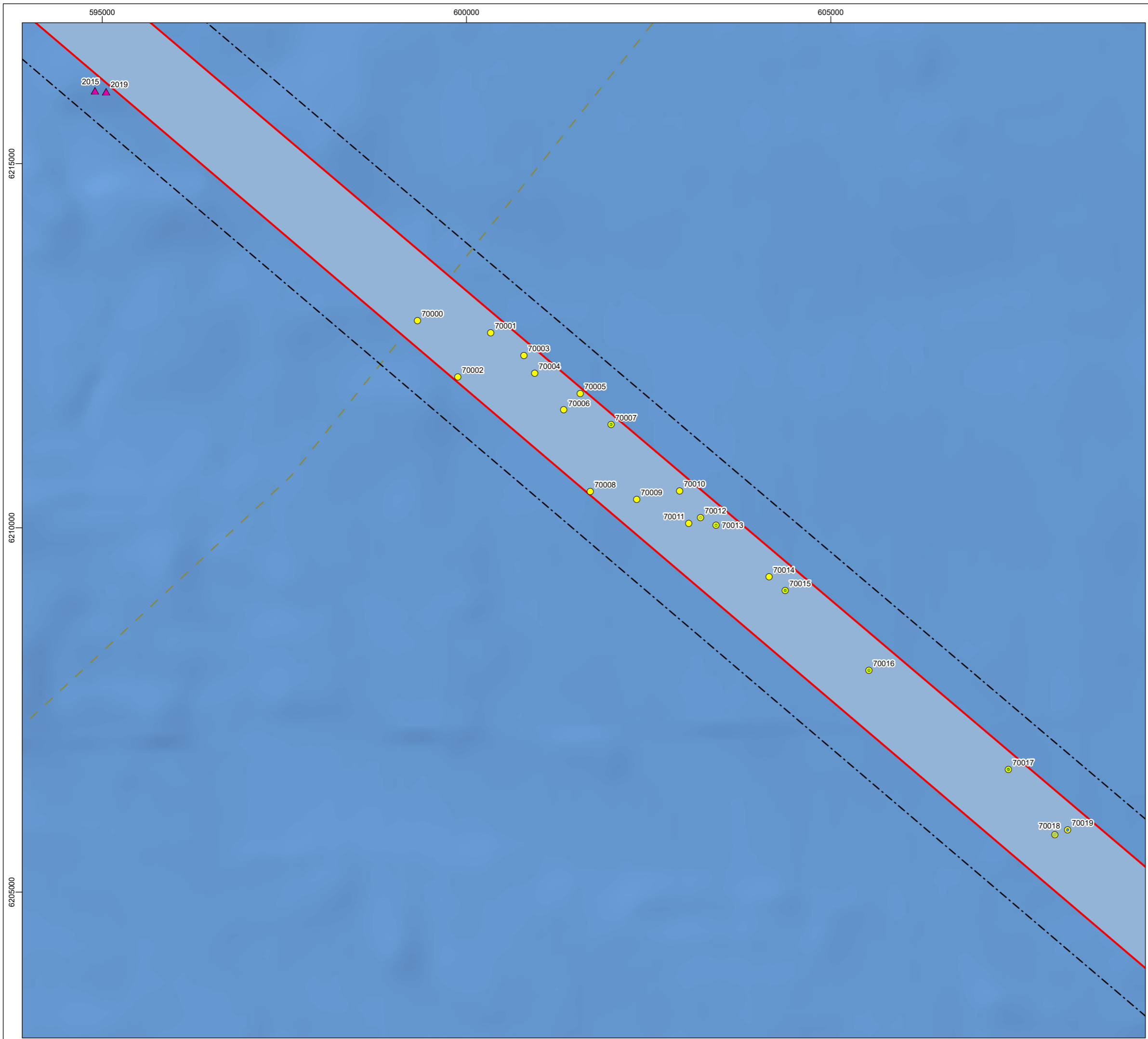
0 0.5 1 2 nm

0 1 2 4 km

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- Legend**
- Marine Scheme Boundary
  - Marine Scheme Offshore Export Cable Corridor
  - Marine Archaeology Study Area
  - UK 12 Nautical Mile Limit
  - Scotland/England Territorial Waters
  - ▲ Marine Heritage Assets (Cambois Connection)
- Seabed features of archaeological potential (Cambois Connection surveys)**
- A2\_1 – Uncertain origin of possible archaeological interest (low priority)
- Seabed feature boundaries**
- Seabed disturbance
  - Bright reflector
  - Dark reflector

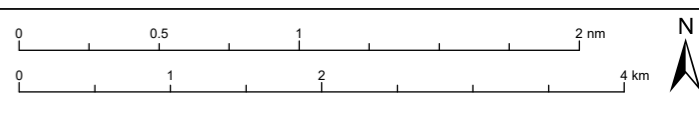
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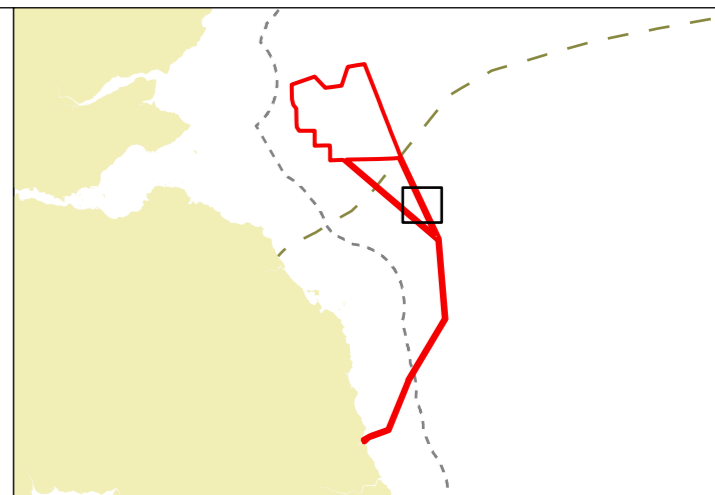
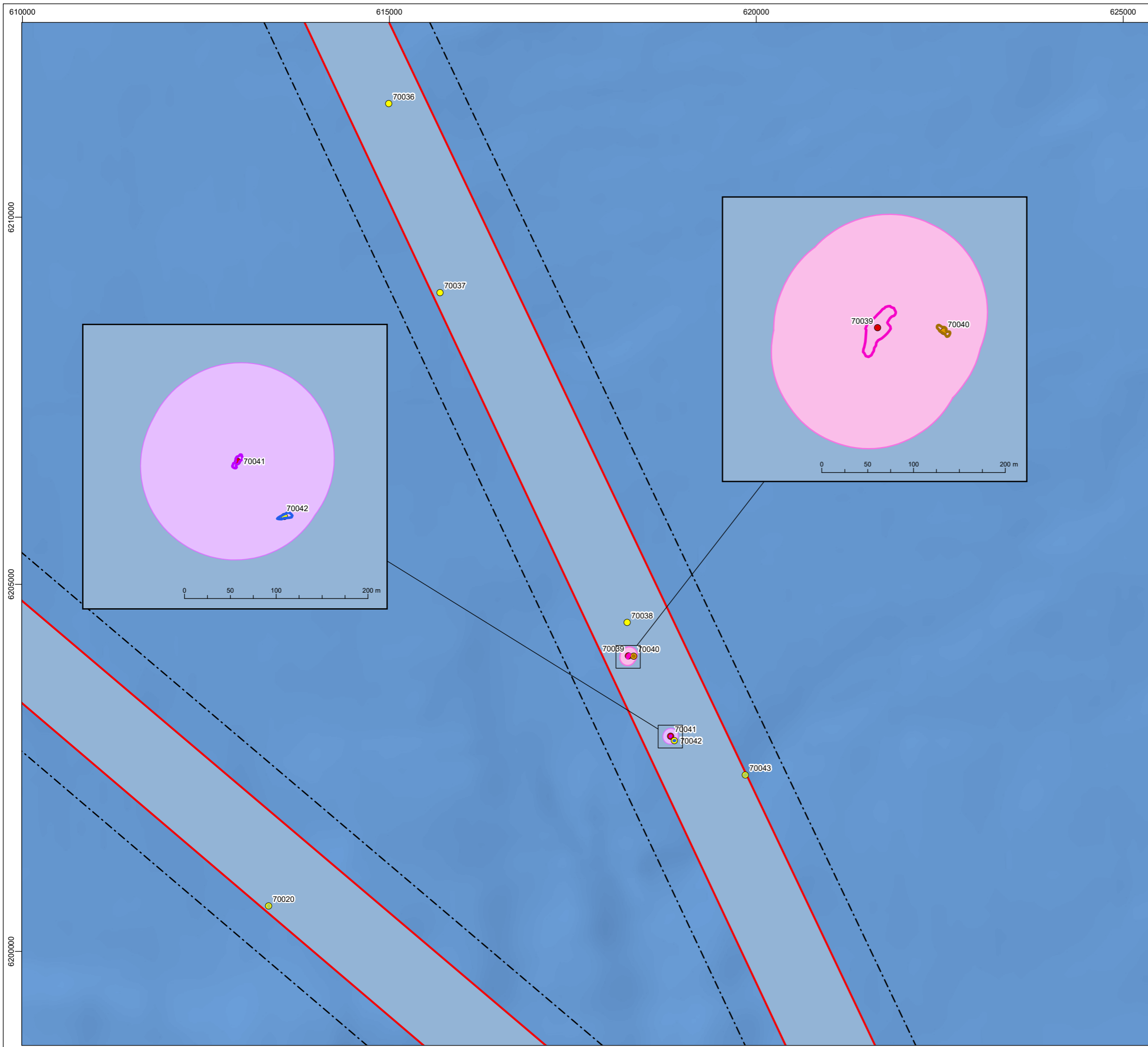
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Title  
**FIGURE 14.3C  
MARINE HERITAGE ASSETS**



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- Legend**
- Marine Scheme Boundary
  - Marine Scheme Offshore Export Cable Corridor
  - Marine Archaeology Study Area
  - UK 12 Nautical Mile Limit
  - Scotland/England Territorial Waters
- Seabed features of archaeological potential (Cambois Connection surveys)**
- A1 – Anthropogenic origin of archaeological interest
  - A2\_h – Uncertain origin of possible archaeological interest (high priority)
  - A2\_l – Uncertain origin of possible archaeological interest (low priority)
- Seabed feature boundaries**
- Wreck
  - Debris
  - Depression
  - Seabed disturbance
  - Dark reflector
- Recommended Archaeological Exclusion Zones**
- Wreck
  - Debris

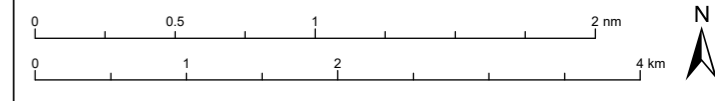
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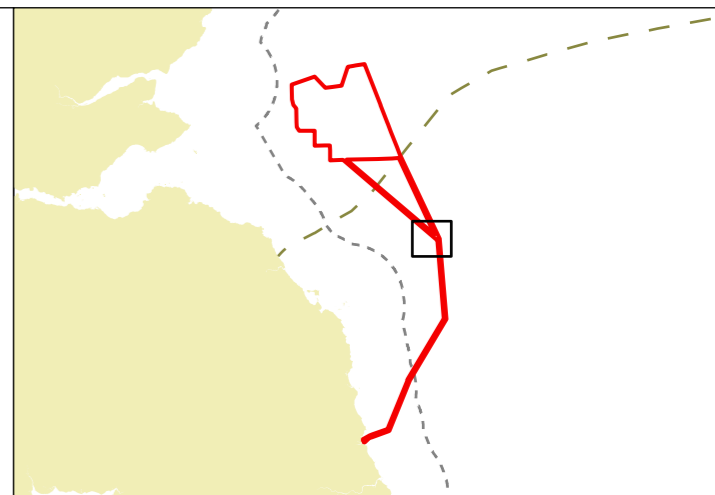
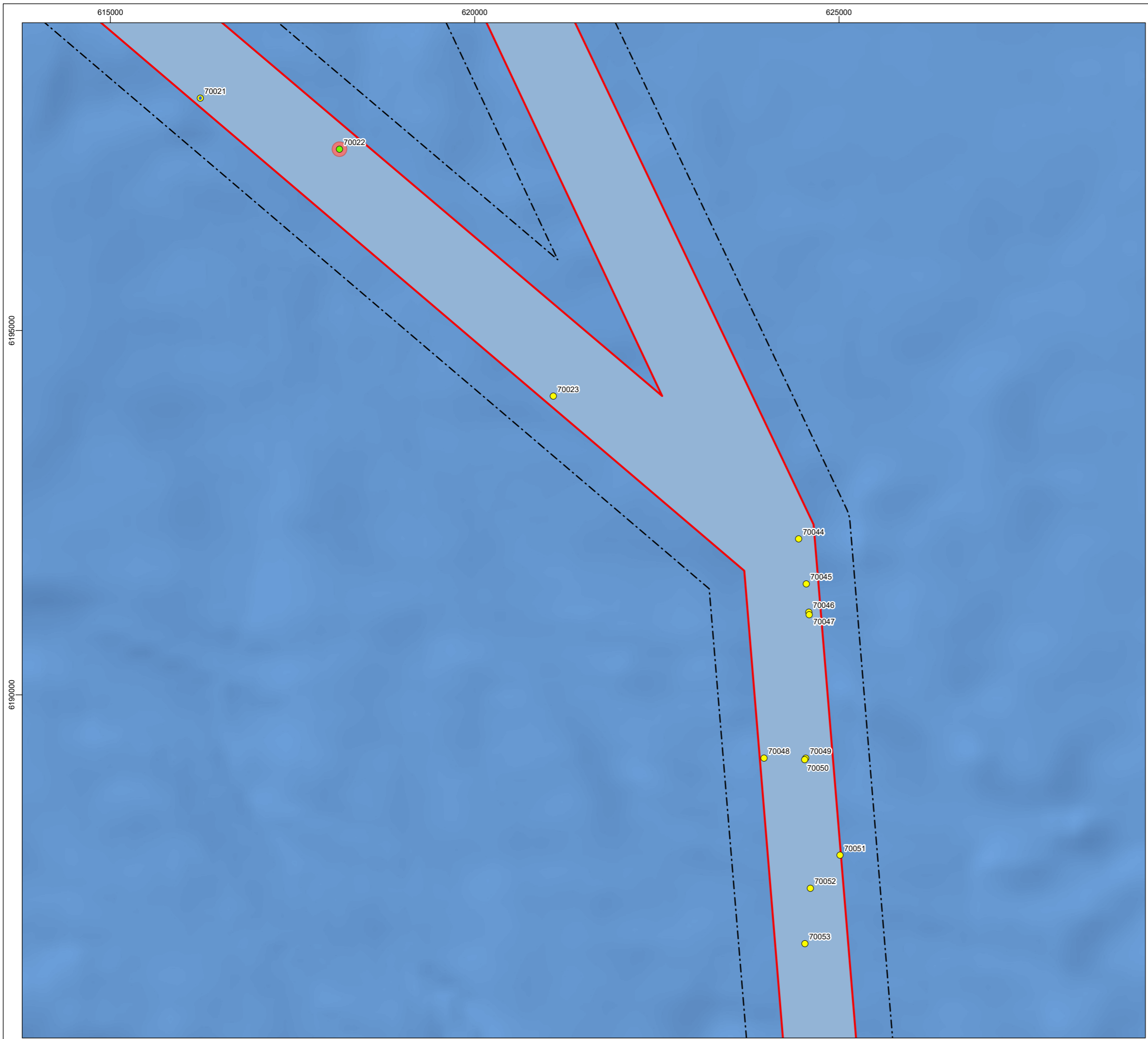
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**Legend**

- Marine Scheme Boundary
- Marine Scheme Offshore Export Cable Corridor
- Marine Archaeology Study Area
- UK 12 Nautical Mile Limit
- Scotland/England Territorial Waters

**Seabed features of archaeological potential (Cambois Connection surveys)**

- A2\_1 – Uncertain origin of possible archaeological interest (low priority)
- A3 – Historic record of possible archaeological interest with no corresponding geophysical anomaly

**Seabed feature boundaries**

- Dark reflector

**Recommended Archaeological Exclusion Zones**

- Recorded wreck

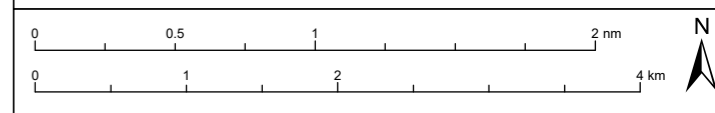
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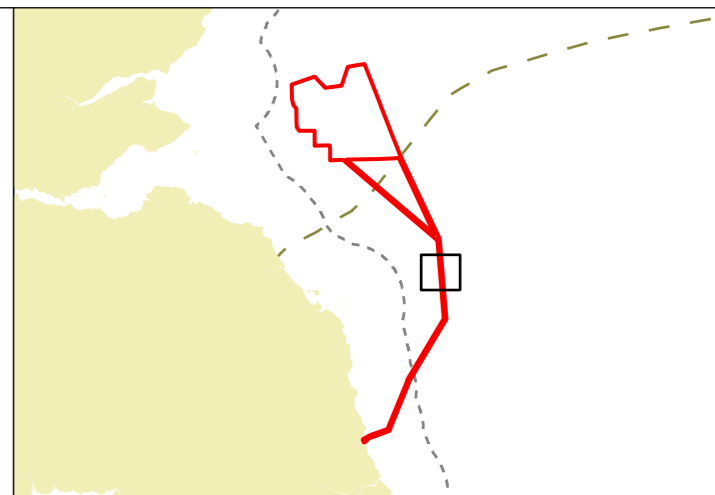
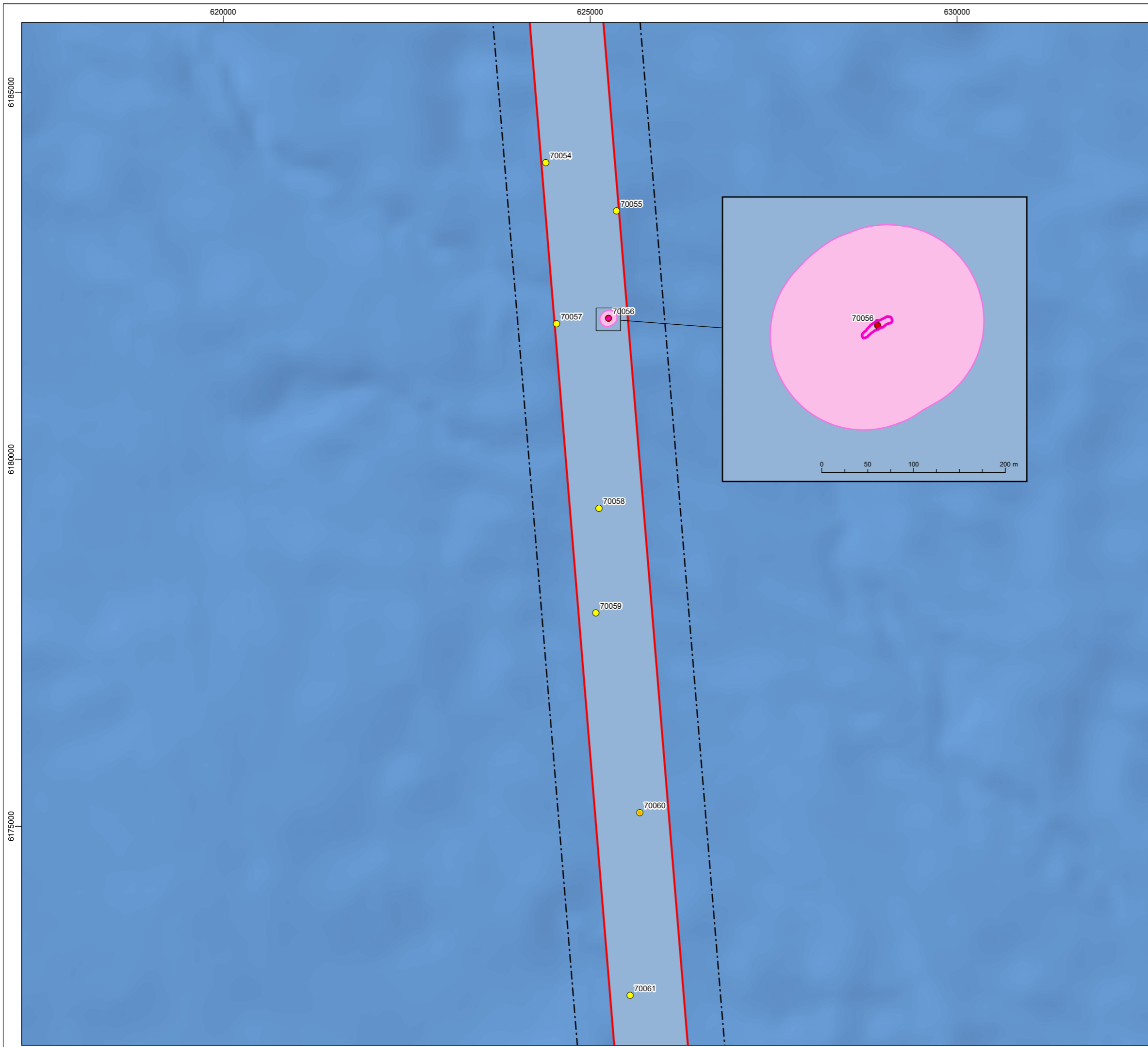
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- Legend**
- Marine Scheme Boundary
  - Marine Scheme Offshore Export Cable Corridor
  - Marine Archaeology Study Area
  - UK 12 Nautical Mile Limit
  - Scotland/England Territorial Waters
- Seabed features of archaeological potential (Cambois Connection surveys)**
- A1 – Anthropogenic origin of archaeological interest
  - A2\_1 – Uncertain origin of possible archaeological interest (low priority)
- Seabed feature boundaries**
- Wreck
  - Mound
- Recommended Archaeological Exclusion Zones**
- Wreck

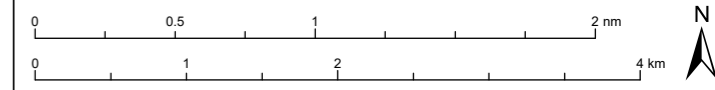
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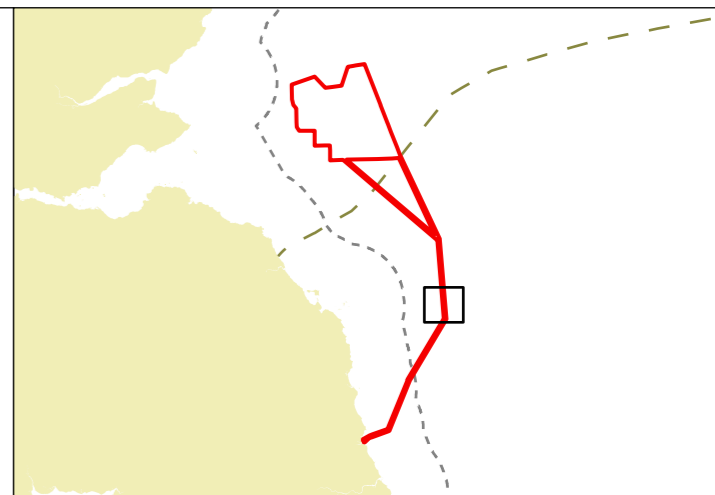
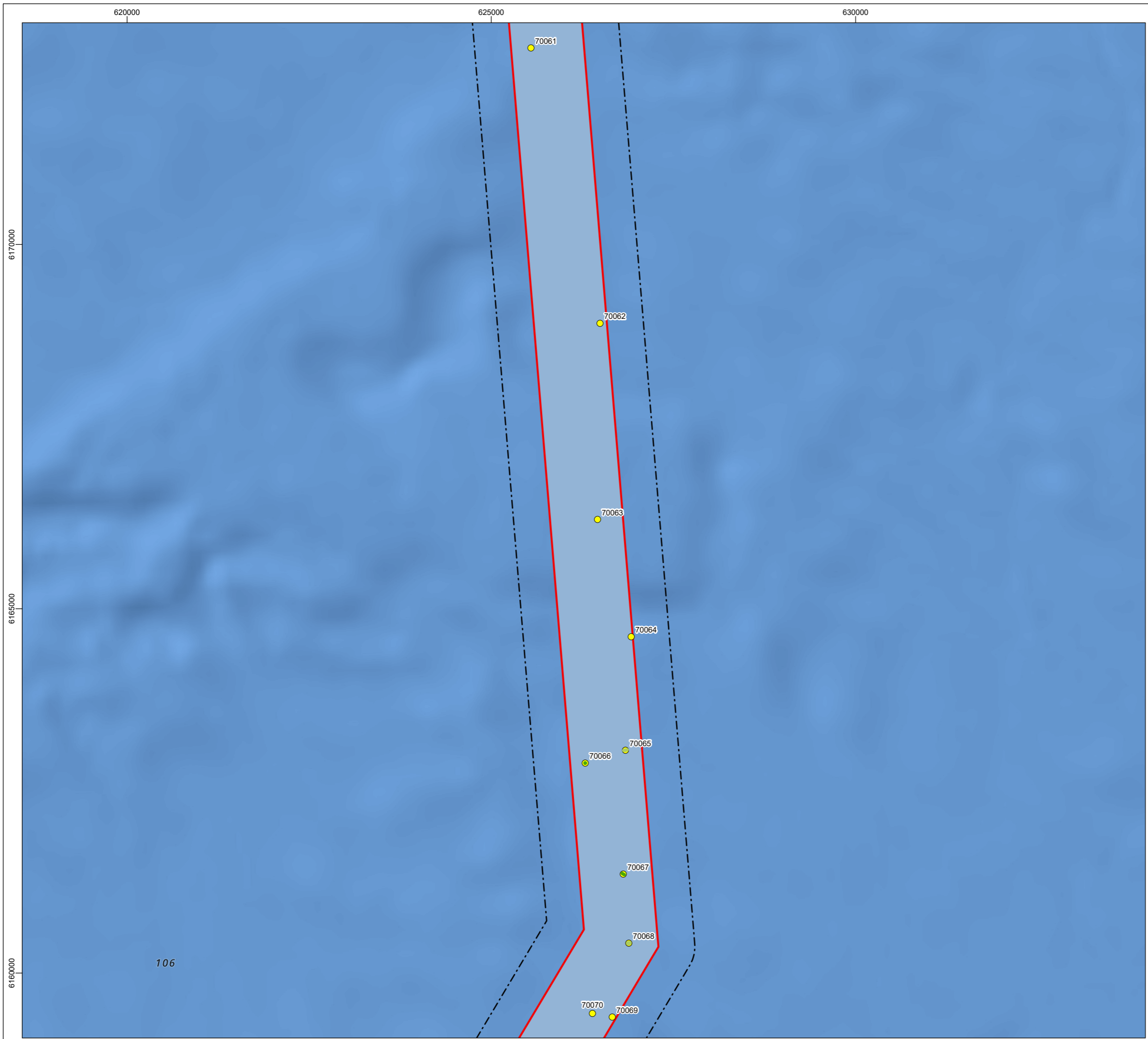
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**Legend**

- Marine Scheme Boundary
- Marine Scheme Offshore Export Cable Corridor
- Marine Archaeology Study Area
- UK 12 Nautical Mile Limit
- Scotland/England Territorial Waters

Seabed features of archaeological potential (Cambois Connection surveys)

- A2\_1 – Uncertain origin of possible archaeological interest (low priority)

Seabed feature boundaries

- Seabed disturbance
- Bright reflector

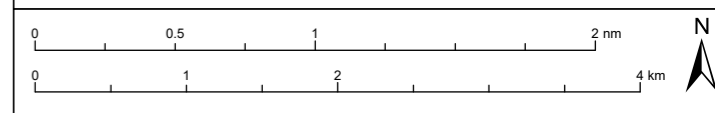
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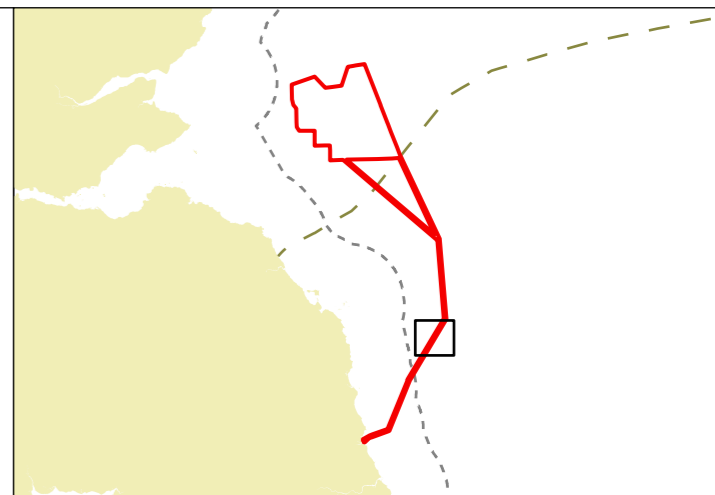
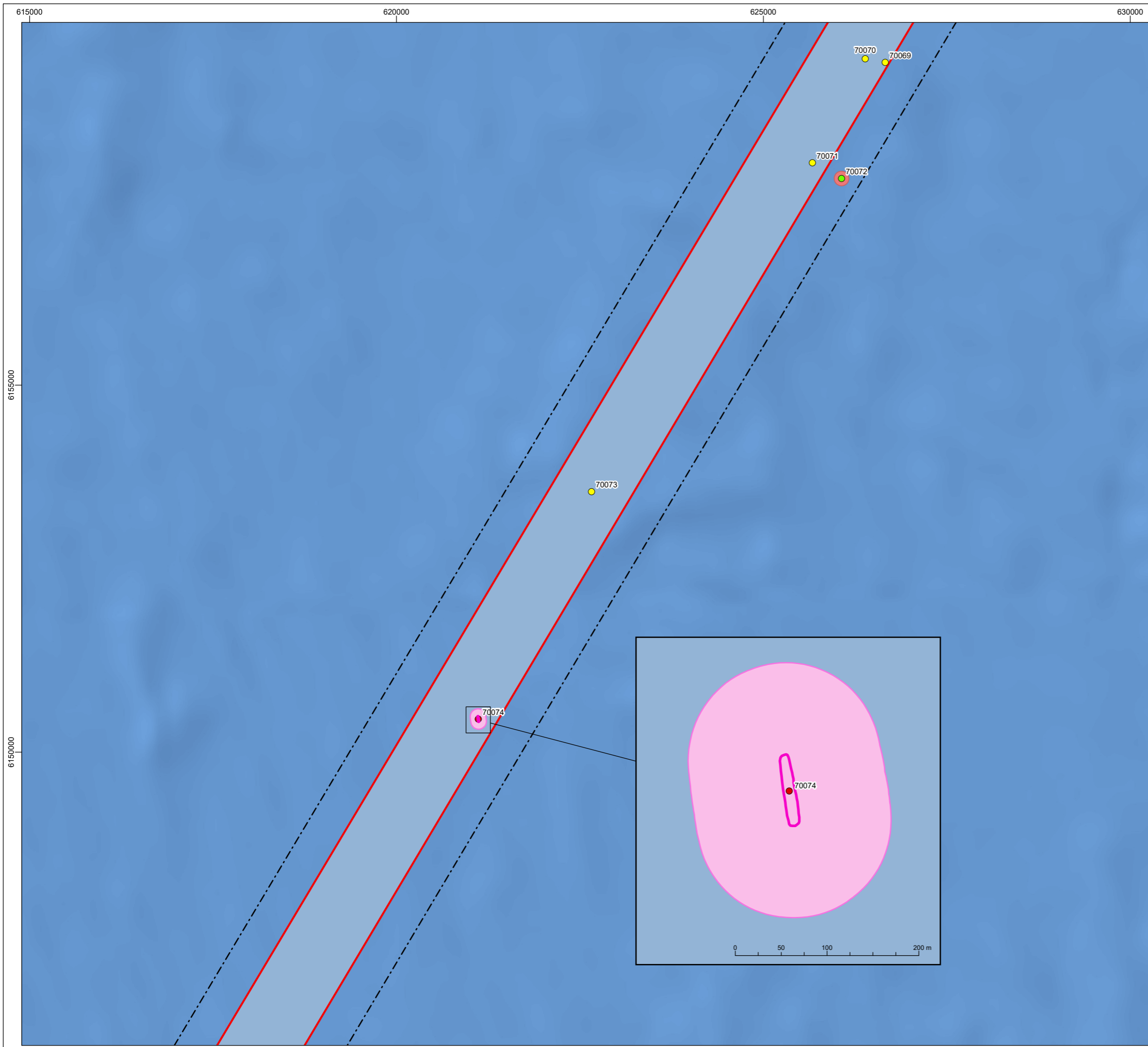
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- Legend**
- Marine Scheme Boundary
  - Marine Scheme Offshore Export Cable Corridor
  - Marine Archaeology Study Area
  - UK 12 Nautical Mile Limit
  - Scotland/England Territorial Waters
- Seabed features of archaeological potential (Cambois Connection surveys)**
- A1 – Anthropogenic origin of archaeological interest
  - A2\_1 – Uncertain origin of possible archaeological interest (low priority)
  - A3 – Historic record of possible archaeological interest with no corresponding geophysical anomaly
- Seabed feature boundaries**
- Wreck
- Recommended Archaeological Exclusion Zones**
- Wreck
  - Recorded wreck

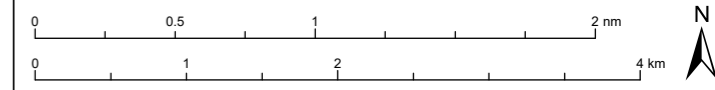
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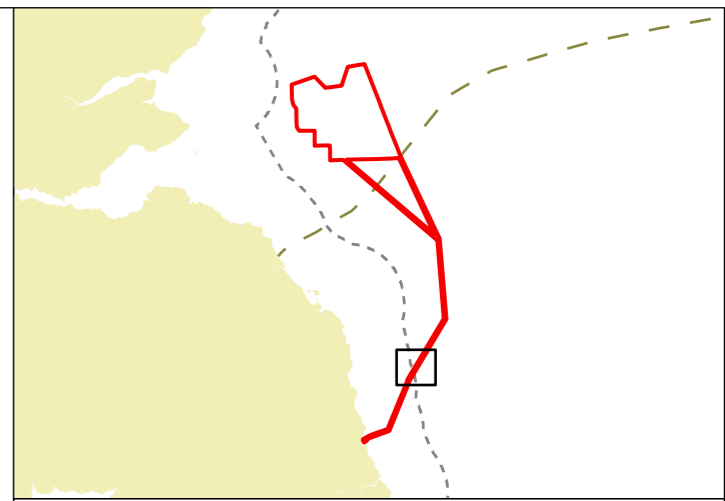
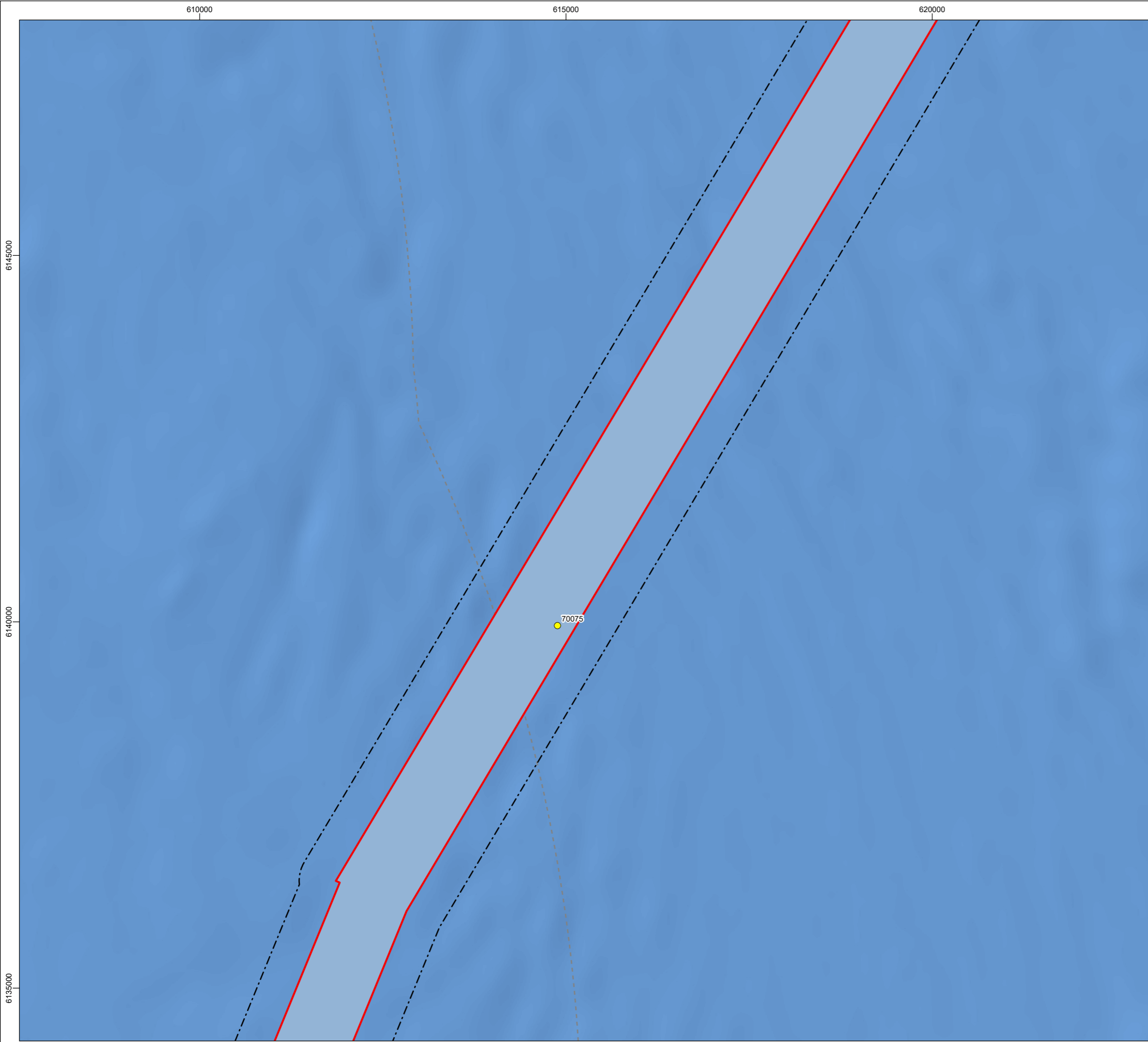
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- Legend**
- Marine Scheme Boundary
  - Marine Scheme Offshore Export Cable Corridor
  - Marine Archaeology Study Area
  - UK 12 Nautical Mile Limit
  - Scotland/England Territorial Waters
- Seabed features of archaeological potential (Cambois Connection surveys)
- A2\_1 – Uncertain origin of possible archaeological interest (low priority)

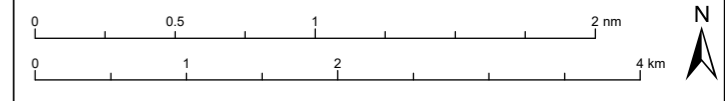
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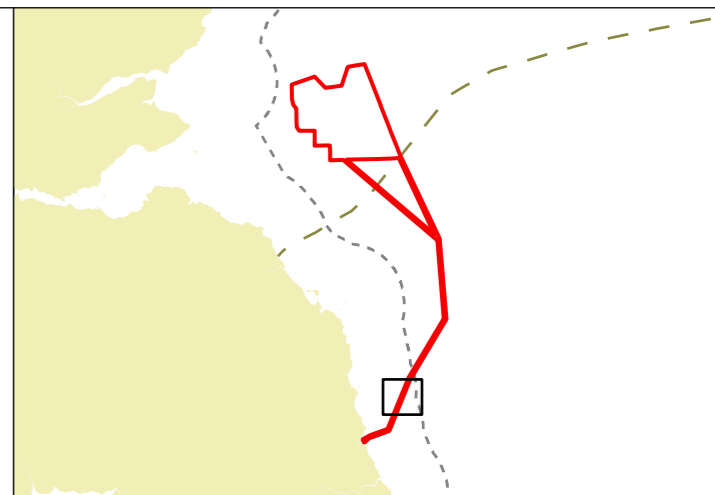
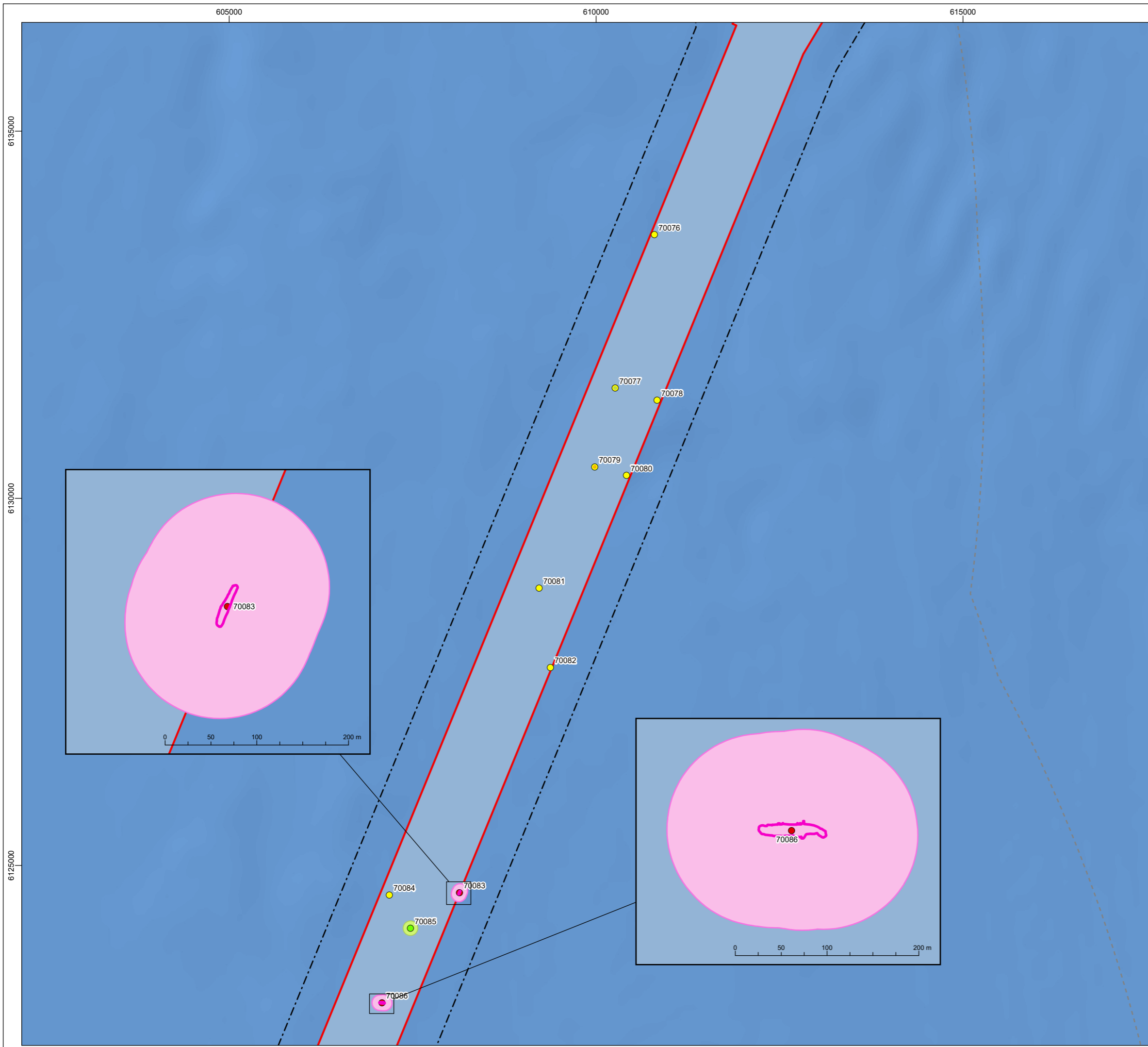
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 MARINE HERITAGE ASSETS**

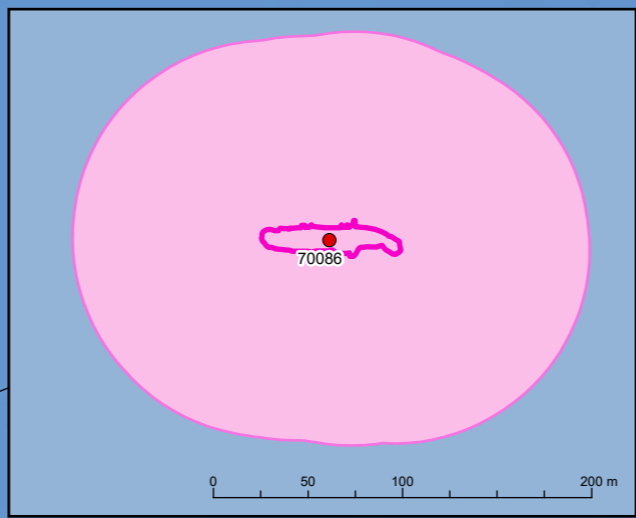
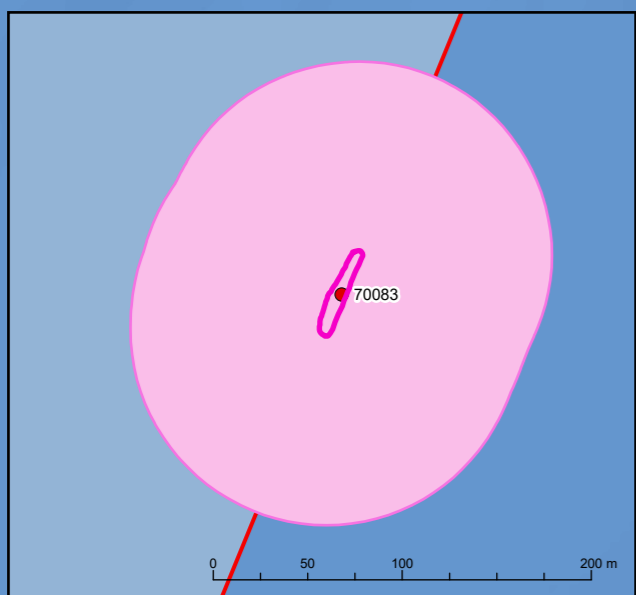


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- Legend**
- Marine Scheme Boundary
  - Marine Scheme Offshore Export Cable Corridor
  - Marine Archaeology Study Area
  - UK 12 Nautical Mile Limit
  - Scotland/England Territorial Waters
- Seabed features of archaeological potential (Cambois Connection surveys)**
- A1 – Anthropogenic origin of archaeological interest
  - A2\_1 – Uncertain origin of possible archaeological interest (low priority)
  - A3 – Historic record of possible archaeological interest with no corresponding geophysical anomaly
- Seabed feature boundaries**
- Wreck
  - Mound
  - Seabed disturbance
- Recommended Archaeological Exclusion Zones**
- Wreck
  - Recorded obstruction



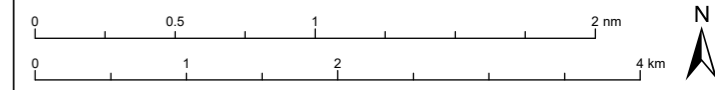
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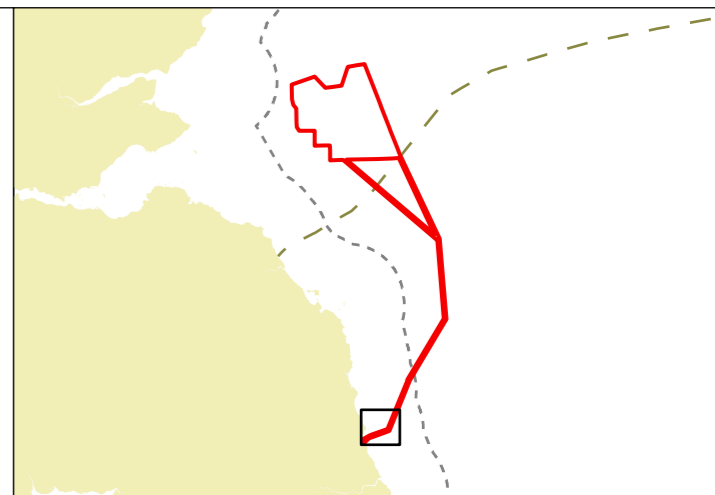
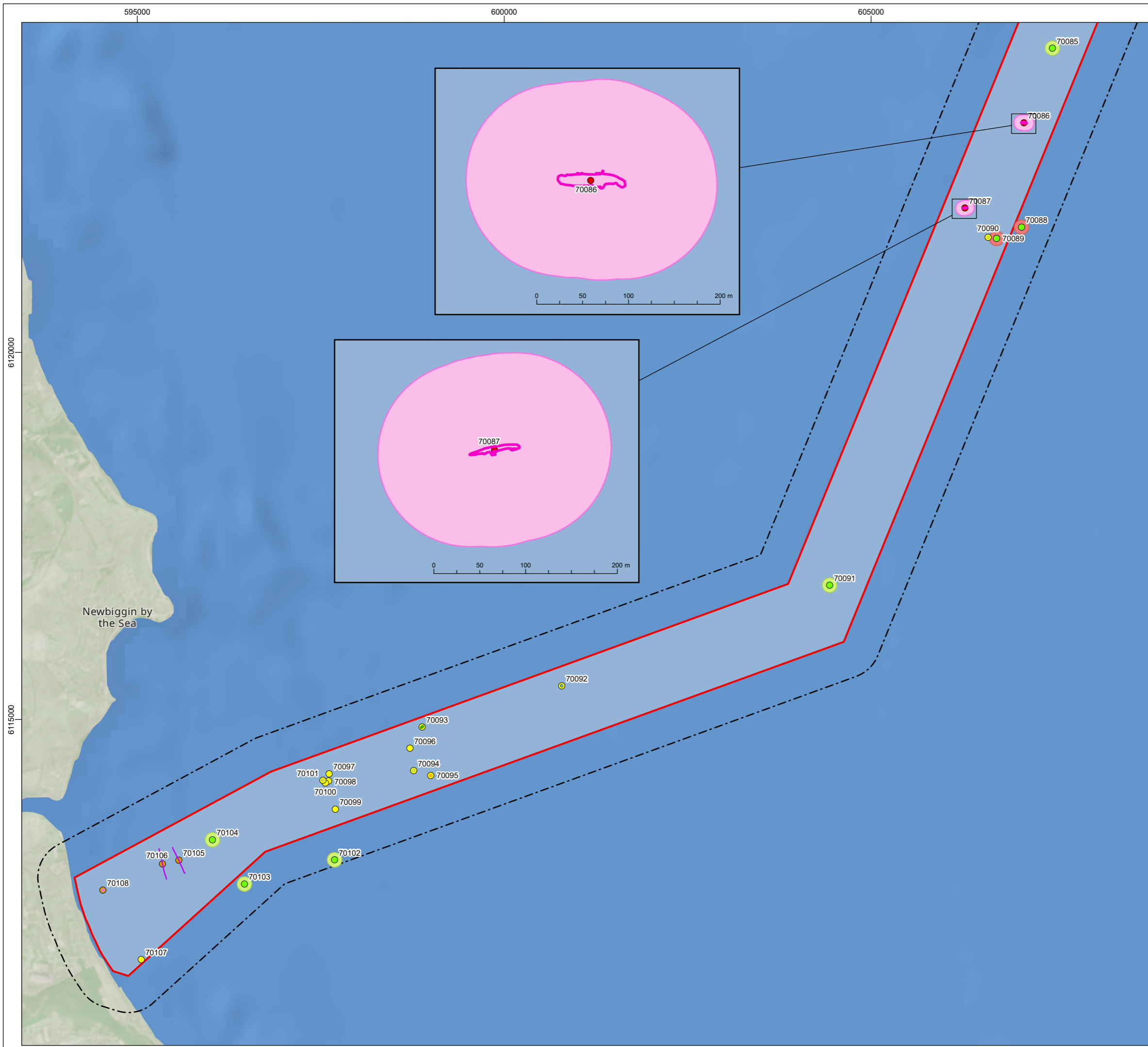
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**Legend**

- Marine Scheme Boundary
- Marine Scheme Offshore Export Cable Corridor
- Marine Archaeology Study Area
- UK 12 Nautical Mile Limit
- Scotland/England Territorial Waters

**Seabed features of archaeological potential (Cambois Connection surveys)**

- A1 – Anthropogenic origin of archaeological interest
- A2\_h – Uncertain origin of possible archaeological interest (high priority)
- A2\_l – Uncertain origin of possible archaeological interest (low priority)
- A3 – Historic record of possible archaeological interest with no corresponding geophysical anomaly

**Seabed feature boundaries**

- Wreck
- Debris field
- Mound
- Seabed disturbance
- Bright reflector
- Dark reflector

**Linear seabed features**

- Linear debris

**Recommended Archaeological Exclusion Zones**

- Wreck
- Recorded wreck
- Recorded obstruction

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OceanWise, Esri, DeLorme, NaturalVue, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS.

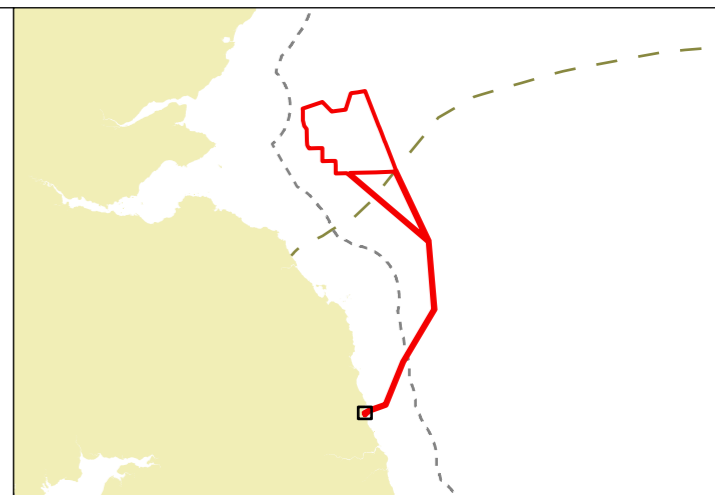
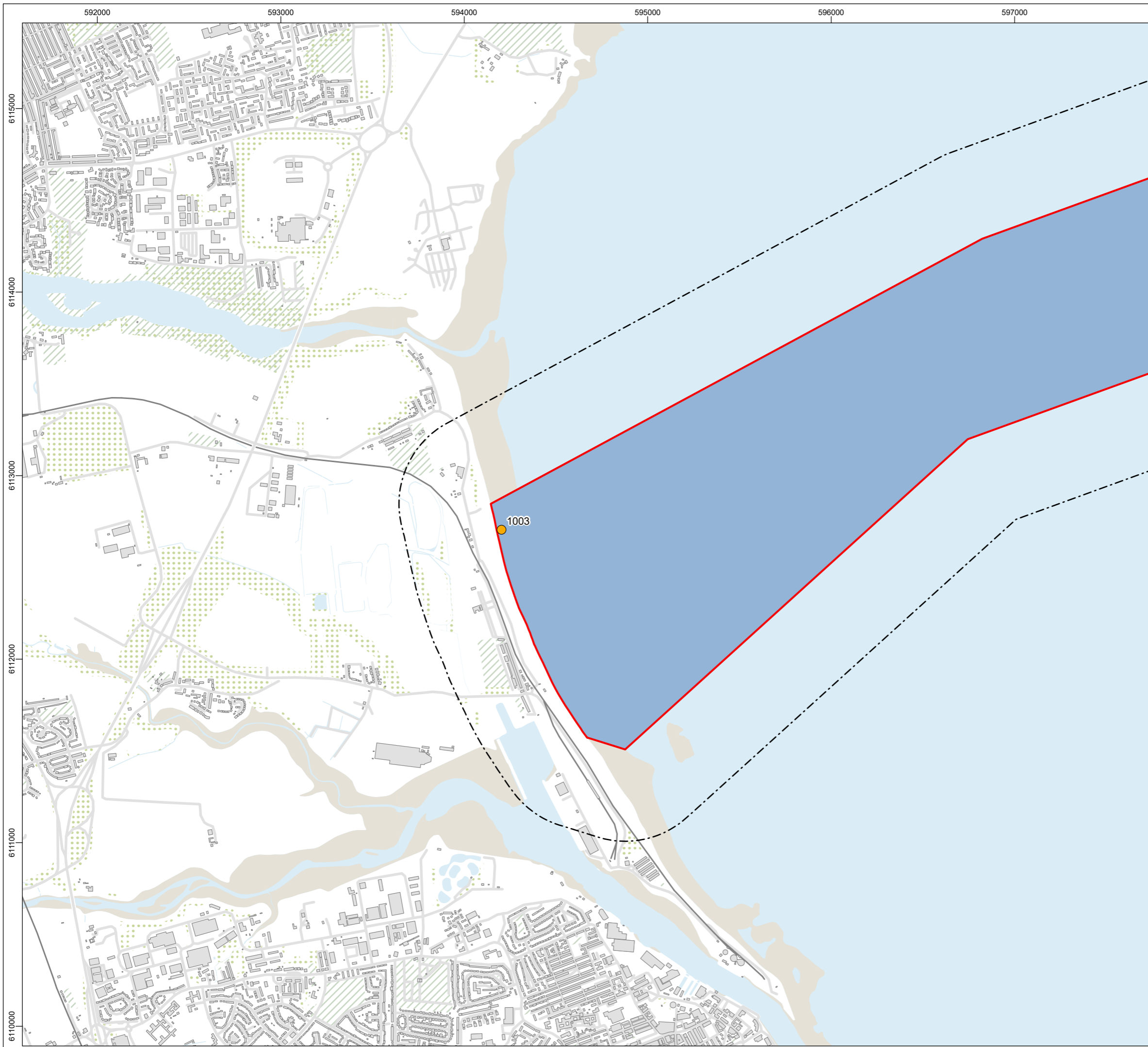
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03	-	-	-	-	-
02	-	-	-	-	-
01	04/07/2023	-	-	KF	LA AB
Rev	Date	Status	Drwn	Chkd	Appd

**Project**  
**CAMBOIS CONNECTION**

**Title**  
**FIGURE 14.3K  
MARINE HERITAGE ASSETS**

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Scale	Plot Size	Datum	Projection
1:50,000	A3	WGS84	UTM30N
Drawing Number	A100796_S01_14.3K		Sheet No.
			011 OF 011



- Legend**
- Marine Scheme Boundary
  - Marine Scheme Offshore Export Cable Corridor
  - Marine Archaeology Study Area
  - Intertidal Heritage Assets

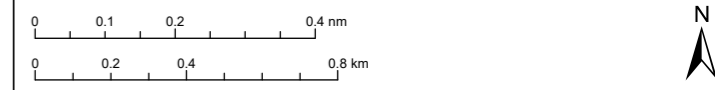
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04	-	-	-	-	-
03	-	-	-	-	-
02	-	-	-	-	-
01	25/05/2023	-	-	KF	SS AB
Rev	Date	Status		Drwn	Chkd Appd



Project  
**CAMBOIS CONNECTION**

Title  
**FIGURE 14.4  
 INTERTIDAL HERITAGE ASSETS**



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Scale	Plot Size	Datum	Projection
1:20,000	A3	WGS84	UTM30N
Drawing Number	A100796_S01_14.4		Sheet No.
			001 OF 001





## 6 POTENTIAL IMPACTS

### 6.1 Overview

6.1.1 The following pathways of potential impacts on marine and intertidal heritage receptors have been identified:

- Construction and Decommissioning
  - Direct loss of or damage to known and unknown marine and intertidal historic environment assets<sup>2</sup> arising from construction and decommissioning; and
  - Indirect loss of or damage to known and unknown marine and intertidal historic environment assets<sup>2</sup> arising from construction and decommissioning.
- Operation and maintenance
  - Direct loss of or damage to known and potential marine cultural heritage receptors from Offshore Export Cable repair and maintenance; and
  - Indirect loss or damage to known and potential marine cultural heritage receptors from changes in local scouring and sedimentation patterns.

### 6.2 Direct

6.2.1 Direct disturbance to potential seabed prehistory receptors, known and recorded maritime and aviation receptors, and unknown archaeological sites and artefacts could occur due to the following activities<sup>3</sup>:

- Site preparation activities, including pre-construction surveys (C);
- Route preparation activities, including cable route clearance, including pre-lay grapnel run, boulder clearance and seabed levelling (C);
- Sea trials (where required, within the proposed Marine Scheme) (C);
- Crossing preparation activities (C); and
- Construction activities, including cable laying and burial, and cable protection measures (C).

### 6.3 Indirect

6.3.1 Indirect disturbance to potential seabed prehistory receptors, maritime and aviation receptors, caused by changes to the hydrodynamic and sedimentary regimes could occur due to the following activities:

- Spoil removal and sediment redistribution (O&M); and
- Changes in local scouring and sedimentation patterns (O&M).

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<sup>2</sup> Including submerged pre-historic landscapes

<sup>3</sup> C = Construction, O&M = Operation and maintenance, D = Decommissioning

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## 7 MITIGATION

### 7.1 Introduction

7.1.1 The following measures (Table 2) have been designed in as part of the Marine Scheme to mitigate against impacts the proposed work may have on any sites with known or unknown archaeological potential.

**Table 2** Mitigation measures adopted as part of the Marine Scheme

<b>Mitigation Measure</b>	<b>Justification</b>	<b>Applicable Jurisdiction</b>
Written Scheme of Investigation (WSI)	<p>The purpose of this document is to identify possible features of marine archaeological importance and to agree mitigation to avoid and/or mitigate potential impacts.</p> <p>The WSI will detail the agreed mitigation that will be implemented during construction of the Marine Scheme. The implementation of a WSI is the mitigation, rather than the document itself. The mitigation measures are designed to either avoid, reduce or offset any damage/disturbance occurring as a result of the Marine Scheme upon known receptors, and to establish the presence of unknown sites. An outline WSI has been provided as part of this application (Volume 5, Appendix 14.2) and will be updated for submission to MMO and MD-LOT prior to construction.</p>	Scottish and English waters
Protocol for Archaeological Discoveries (PAD)	<p>In order to provide for unexpected discoveries encountered during the construction, operation and maintenance and decommissioning phases of the Marine Scheme, a PAD will be adopted. This is a system for reporting and investigating unexpected archaeological discoveries encountered during construction activities, with a Retained Archaeologist providing guidance and advising on the implementation of the PAD.</p> <p>The PAD also makes provision for the implementation of temporary exclusion zones around areas of possible archaeological interest, for prompt archaeological advice, and, if necessary, for archaeological inspection of important features prior to further activities in the vicinity. The PAD provides a mechanism to comply with the Merchant Shipping Act 1995, including notification of the Receiver of Wreck, and accords with the Code of Practice for Seabed Developers (JNAPC, 2006) and relevant Guidance (Historic England 2016). A PAD has been provided as part of this application (Volume 5, Appendix 14.2) and will be updated for submission to MMO and MD-LOT prior to construction.</p>	Scottish and English waters
Engagement of a Retained Archaeologist	A Retained Archaeologist will be engaged to implement the agreed mitigation secured through a WSI. The Retained Archaeologist will provide input into specifications for further surveys and	Scottish and English waters



Mitigation Measure	Justification	Applicable Jurisdiction
	archaeological analysis of the outputs from any pre-construction surveys (for example, geophysical and geotechnical), and will provide advice regarding any archaeological finds which occur during construction. Where suitable for archaeological assessment, further geophysical surveys undertaken in advance of the development commencing, for example for the purposes of detailed design, that require magnetometer data (e.g. UXO survey) will also be assessed by a suitably qualified archaeological contractor. This will allow for the identification of any additional ferrous features of archaeological potential within the Marine Scheme, as well as to confirm the presence of ferrous material at the location of features identified during this assessment. To avoid and / or reduce impacts on sites of archaeological importance.	
Micro-routeing	Micro-siting within the Marine Scheme will be carried out to help avoid or minimise interactions with localised engineering and environmental constraints identified during pre-construction surveys.	Scottish and English waters
Implementation of Archaeological Exclusion Zones (AEZs)	The primary mitigation for the protection of known archaeological receptors is avoidance. This is commonly achieved through the implementation and monitoring of AEZs, which are proposed for identified high value seabed receptors of anthropogenic origin, to avoid direct impacts on sites of known archaeological importance.	Scottish and English waters
Adherence to BBWF WSI, including implementation of PAD and AEZs	The Applicant is committed to the mitigation measures set out in the Outline WSI/PAD for Adverse impacts arising from the Marine Scheme within the BBWF array area. Mitigation measures including implementation of PAD and AEZs are secured through adherence to the BBWF WSI (BBWFL, 2022b).	Scottish waters

## 7.2 Archaeological Exclusion Zones

### *Marine Scheme in Scottish waters*

- 7.2.1 High and medium potential sites have been identified in the Berwick Bank Wind Farm Array Area (BBWFL 2022a). These have been assigned Archaeological Exclusion Zones (AEZ) in the Berwick Bank Wind Farm archaeological WSI.
- 7.2.2 A gazetteer of these sites and their AEZs is provided in **Appendix 1**. The site of the *Oswin (2004)* is protected by an AEZ extending 100 m from its extents (under reference BBMB\_SSS\_2020\_0212) (BBWFL, 2002b). The geophysical anomalies BBMB\_SSS\_2020\_0254 and BBMB\_SSS\_2020\_0255 lie within this 100 m AEZ.
- 7.2.3 As a precautionary measure, prior to clarification by archaeological review of marine geophysical data for the Marine Scheme in Scottish waters beyond the BBWF array area, AEZs of 100m for **2015** and **2019** are also proposed.



### Marine Scheme in English waters

7.2.4 Archaeological Exclusion Zones of 100m around the site extent are proposed for all seabed features characterised as A1 or A3 (Table 3 and Table 4).

7.2.5 A1 characterised features have been identified in the marine geophysical data assessment with or without existing charted wreck records and reflect features of high archaeological potential. A3 features are charted or otherwise known wrecks that are thought to exist on the seabed, but are not covered by, or were not visible in, geophysical data coverage, and are included within the mitigation strategy as a precautionary measure.

**Table 3** Proposed AEZs for English Offshore Waters

ID	Classification	Name	Easting	Northing	Archaeological discrimination
70039	Wreck		618257	6204025	A1
70041	Debris		618832	6202931	A1
70056	Wreck	Acantha (Possibly)	625250	6181920	A1
70074	Wreck		621115	6150451	A1
70022	Recorded wreck		618144	6197489	A3
70072	Recorded wreck	San Bernardo	626065	6157814	A3

**Table 4** Proposed AEZs for English Inshore Waters

ID	Classification	Name	Easting	Northing	Archaeological discrimination
70083	Wreck	HMS Herring	608138	6124628	A1
70086	Wreck	SS Svava	607082	6123128	A1
70087	Wreck	HMSM Unity (probably)	606278	6121968	A1
70085	Recorded obstruction		607470	6124144	A3
70088	Recorded wreck	Ragnhild	607050	6121706	A3
70089	Recorded wreck	Bangarth	606709	6121553	A3
70091	Recorded obstruction		604434	6116829	A3
70102	Recorded obstruction		597688	6113089	A3
70103	Recorded obstruction		596460	6112759	A3
70104	Recorded obstruction		596024	6113361	A3

## 7.3 Other features of archaeological potential

7.3.1 Seabed features characterised as A2 anomalies are items of uncertain origin of possible archaeological interest identified during the geophysical survey process. The archaeological potential of these features is broken down further:



- A2\_h features are judged to have higher potential to be archaeological (Anomaly of likely anthropogenic origin but of unknown date; may be of archaeological interest or a modern feature.)
- A2\_l features are judged to have lower potential to be archaeological (Anomaly of possible anthropogenic origin but interpretation is uncertain; may be anthropogenic or a natural feature).

7.3.2 Mitigation strategies typically include avoidance where possible and a Protocol for Archaeological Discoveries (PAD). As part of the mitigation process contractors will receive an awareness presentation and material, including guidance on archaeological material, temporary exclusion zones if required and the reporting protocol process.

7.3.3 The assessment of geophysical data within the Marine Scheme in English waters resulted in a total of 93 anomalies identified as being of possible archaeological interest (Figure 14.2b-k).

#### *English Offshore Waters*

7.3.4 One feature (70040) a large elongate depression containing a possible internal mound, has been characterised as being of likely anthropogenic origin but of unknown date (A2\_h).

7.3.5 Sixty-nine other anomalies have been characterised as possible archaeological interest but interpretation is uncertain (A2\_l); they may be anthropogenic or a natural feature.

#### *English Inshore Waters*

7.3.6 Three features (70105, 70106, 70108) comprise debris characterised as being of likely anthropogenic origin but of unknown date (A2\_h).

7.3.7 Twenty other anomalies have been characterised as possible archaeological interest but interpretation is uncertain (A2\_l); they may be anthropogenic or a natural feature.

## **7.4 Palaeogeographic assessment**

#### *English Offshore Waters*

7.4.1 Two cut and fill features in the interpreted till surface (75001, 75002) have also been reported and characterised as features of possible archaeological interest (P2).

#### *English Inshore Waters*

7.4.2 A further possible cut and fill feature cut into interpreted till has been identified in English inshore waters (75003); of possible archaeological interest (P2).

#### *Approach to mitigation*

7.4.3 The top of these feature is located within around 1 m of the seabed and may be impacted by cable installation activities. Avoidance is recommended in the first instance.

7.4.4 If avoidance cannot be achieved, then it is proposed that any future geotechnical works consider a sampling location through these feature to understand better, the archaeological and palaeogeographical potential of this possible dune feature, as per the approach to marine geoarchaeological investigations.



## **7.5 Unexpected discoveries**

7.5.1 To mitigate against any possible unexpected discoveries during construction and operation, a PAD is outlined below (section 9.6) for implementation by the contractors with the support of the Retained Archaeologist.

## **8 METHOD STATEMENTS**

8.1.1 This outline WSI provides a framework for further archaeological investigations for the Marine Scheme. All works will be undertaken in accordance with the methodology set out within this WSI and in compliance with the standards outlined by the ClfA (ClfA 2014a-g), excepting where they are superseded by statements made below.

8.1.2 Detailed method statements will be produced, as required, for further archaeological works, such as those identified in the 'Scheme of Investigations' section, below.

8.1.3 Each archaeological method statement will correspond to a package of works, for example, archaeological assessment of marine geophysical data.

8.1.4 Method statements will provide details about:

- Form of commission and contractual relationship with the Applicant;
- Relation between the method statement, the WSI and the license condition(s);
- Context in terms of relevant construction works;
- Specific objectives of archaeological works;
- Extent of investigation;
- Investigation methodology;
- Anticipated post-investigation actions, including processing, assessment and analysis of finds and samples;
- Reporting;
- Timetable;
- Monitoring arrangements; and
- Health, safety and welfare.

8.1.5 Method statements will be provided to the Applicant for comment. On receipt of comments from the Applicant, the Retained Archaeologist will produce a final method statement addressing these comments.

8.1.6 Method statements will be submitted to the Archaeological Curators for approval and will include provision for the relevant Archaeological Curators to monitor the progress of the archaeological works, as appropriate, be that through site visits or meetings with the Applicant, the Contractor(s), and the Retained Archaeologist.



## 9 SCHEME OF INVESTIGATIONS

### 9.1 Introduction

- 9.1.1 The following schemes of investigations provide a framework for the implementation of any additional mitigation that may be required in response to any unexpected discoveries during the different phases of the Marine Scheme, based on the referenced guidance indicated below.
- 9.1.2 The Mitigation section (section 7) provided a brief overview of the types of further archaeological investigations recommended for identified archaeological receptors, unknown, and seabed prehistory and other archaeological receptors. The Scheme of Investigations section sets common approaches to how these investigations will be undertaken. Further details on approaches to mitigation that may subsequently arise are summarised in *Archaeological Written Schemes of Investigation for Offshore Wind Farm Projects* (The Crown Estate and Wessex Archaeology (2021).
- 9.1.3 The Retained Archaeologist will provide input on the contractors' proposed survey method statements to ensure data collection is optimised so that it can be used to identify features of archaeological importance and inform mitigation proposals such as avoidance of wrecks and wreck debris.

### 9.2 Standards and guidance

- 9.2.1 The method statements and specifications in this document are based on archaeological best practice and guidance for the Marine Scheme. The principal sources are:
- *Code for Practice for Seabed Development* (Joint Nautical Archaeology Policy Committee (JNAPC) 2006);
  - *Identifying and Protecting Palaeolithic Remains: Archaeological Guidance for Planning Authorities and Developers* (English Heritage, 1998);
  - *Managing Lithic Scatters: Archaeological Guidance for planning authorities and developers* (English Heritage (now Historic England), 2000);
  - *Military Aircraft Crash Sites: Guidance on their Significance and Future Management* (English Heritage, 2002);
  - *Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment* (English Heritage (now Historic England), 2008);
  - *Our Seas – A Shared Resource: High Level Marine Objectives* (Department for Environment, Food and Rural Affairs (DEFRA), 2009);
  - *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation* (second edition) (English Heritage (now Historic England), 2011);
  - *Ships and Boats: Prehistory to Present – Designation Selection Guide* (Historic England, 2012);
  - *Marine Geophysics Data Acquisition, Processing and Interpretation Guidance Notes* (Historic England 2013);
  - *Standard and guidance for archaeological field evaluation* (ClfA 2014a);
  - *Standard and Guidance for historic environment desk-based assessment* (ClfA 2014h);



- *Standard and guidance for nautical archaeological recording and reconstruction* (ClfA 2014g);
- *Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record* (English Heritage (now Historic England), 2015b);
- *Preserving Archaeological Remains: Decision-taking for Sites under Development* (Historic England, 2016);
- *Deposit Modelling and Archaeology. Guidance for Mapping Buried Deposits* (Historic England 2020);
- *Commercial Renewable Energy Development and the Historic Environment* (Historic England 2021);
- *Archaeological Written Schemes of Investigation for Offshore Windfarm Projects* (The Crown Estate and Wessex Archaeology 2021);
- *Conserving the Underwater Heritage* (Historic Scotland 1999); and
- *Historic Environment Policy for Scotland* (Historic Environment Scotland 2019).

### **9.3 Archaeological reporting, data management and archiving**

9.3.1 Each package of archaeological works will be accompanied by written reports pursuant to the requirements of those works and demonstrating appropriate planning, recording and data management and commitment to archiving and public dissemination of results.

9.3.2 For all aspects of recording, reporting, data management and archiving the Client will adhere to standards and guidance as set out in ClfA 2014b.

9.3.3 Key points relevant to recording, reporting, data management and archiving are included below and in sections 11 and 12.

#### *Reports*

9.3.4 Each package of work will give rise to one or more Archaeological Reports, as set out in the Method Statement relating to the work.

9.3.5 Each Archaeological Report will satisfy the method statement for the investigation and will present the project information in sufficient detail to allow interpretation without recourse to the project archive.

9.3.6 Archaeological reports will be prepared in accordance with the guidance given in the relevant ClfA Standards and Guidance document (ClfA 2014b).

9.3.7 Survey data and reports will be reviewed from an archaeological perspective to ensure suitable mitigation is put in place for the proposed works. The reviews will consider:

- relationship between the survey work, the WSI and the licence condition(s);
- context in terms of relevant construction works;
- specific objectives data review;
- extent of investigations undertaken;
- methodology for data review or analysis;
- mitigation requirements;





- monitoring arrangements; and
- recommendations.

9.3.8 Illustrations will include a plan of the area subject to investigation in relation to the development scheme.

9.3.9 Each Archaeological Report will be submitted in draft to the Applicant by the Retained Archaeologist. Upon approval by the Applicant, Archaeological Reports will be submitted to the Archaeological Curator for approval within four weeks of completion of the works associated with each Method Statement and their agreement/acceptance will be assumed if no contrary response is received within 30 working days of submission.

9.3.10 On completion of all archaeological works relating to the Marine Scheme an overarching report on the archaeology of the scheme will be prepared within a timetable agreed with the Applicant and the Archaeological Curator.

#### **9.4 Archaeological exclusion zones**

9.4.1 In the case of further high importance finds or finds thought to be of high importance, additional AEZs may be implemented to protect them. All finds of archaeological material will be reported to the Retained Archaeologist and the Construction Contractor(s) for consultation, in accordance with the PAD. Marine geophysical investigations

9.4.2 Where suitable for archaeological assessment, further geophysical surveys undertaken in advance of the development commencing, for example for the purposes of detailed design, that require magnetometer data will also be assessed by a suitably qualified archaeological contractor. This will allow for the identification of any additional ferrous features of archaeological potential within the Marine Scheme, as well as to confirm the presence of ferrous material at the location of features identified during this assessment.

9.4.3 For all aspects of marine geophysical investigations, the Client will adhere to applicable standards and guidance (e.g. Historic England, 2013).

9.4.4 For marine geophysical survey data gathered and assessed for non-archaeological purposes, the data must be retained and made accessible to the Retained Archaeologist for assessment, should anomalies subsequently be determined to be of archaeological interest.

#### **9.5 Marine geoarchaeological investigations**

9.5.1 The scope and methodology of any further geoarchaeological works will be set out in a separate method statement, prepared by the Retained Archaeologist and agreed with the Archaeological Curator.

9.5.2 The method statement will include clear provisions for the development of a collection, retention and storage strategy for cores, to allow for analysis to take place. It will be recommended for cores to be collected using light-proof sleeves, and that cores must be stored and split under light-safe (dark) laboratory conditions, in order to promote the preservation of the integrity of deposits of a certain age.

9.5.3 In the event that further work is recommended by the Retained Archaeologist, the Archaeological Curator must be contacted to discuss the scope and evidential value of such works.



## 9.6 Protocol for archaeological discoveries (The Protocol)

- 9.6.1 A Protocol for Archaeological Discoveries (the Protocol) will be implemented as best practice to ensure that the Marine Scheme is prepared for unexpected discoveries of archaeological material – including shipwreck material, aircraft remains, submerged prehistoric material or other archaeological material. *Protocol for Archaeological Discoveries: Offshore Renewables Projects* (Wessex Archaeology 2014)
- 9.6.2 The Protocol will be implemented to ensure that unexpected discoveries of archaeological material made outside of the above mitigation methods– including submerged prehistoric material, shipwreck material aircraft remains, and any other archaeological material – are addressed in a timely and appropriate manner.
- 9.6.3 The aim of the Protocol is to reduce adverse effects of the Marine Scheme on the historic environment by enabling people working on the Marine Scheme to report archaeological finds in a manner that is both convenient to their everyday work and effective regarding curatorial requirements.
- 9.6.4 Flow charts of actions/communications and recording sheets associated with the Protocol can be found in Appendices 3, 4 and 5.
- 9.6.5 Archaeological finds made during construction activities are important because they can shed light on past human use of the landscape, sea, and seabed. The information that such discoveries bring to light can help archaeologists better understand the human past and should, therefore be conserved to better protect these aspects of our history on behalf of future generations.
- 9.6.6 The Protocol will be implemented to ensure that these discoveries are reported and analysed.

### *Methodology*

- 9.6.7 The implementation of the Protocol will be initiated by a visit by the Retained Archaeologist to the relevant vessels to ensure that all staff are aware of what constitutes an appropriate find. Contact details, including those of the Nominated Contacts and the Archaeological Contractor, will be circulated once they have been confirmed.
- 9.6.8 When discoveries are made by Staff, either on the seabed or onboard a vessel, they can then be reported to a Site Representative on their vessel. The Site Representative will generally be the Master, or a person nominated by the Master to be the Site Representative. The Site Representative then reports to the Nominated Contact – a person who has been appointed by the contractor to co-ordinate implementation of the Protocol. The Nominated Contact will then report any discoveries to the Retained Archaeologist.
- 9.6.9 The Retained Archaeologist will in turn inform the Archaeological Curator. If the find is a 'wreck' within the meaning of the *Merchant Shipping Act (1995)* then the Client, with advice from the Retained Archaeologist, will also make a report to the Receiver of Wreck. The Retained Archaeologist will inform the Client of the discovery and will produce an archaeological report of the finds at the end of the marine works.

### *Actions by the Nominated Contact*

- 9.6.10 Once informed of a find by a Master / Site Representative, the Nominated Contact shall inform the Archaeological Contractor as soon as practicable so that advice can be sought.



9.6.11 The Nominated Contact will confirm with the Master / Site Representative that all the details set out in the Preliminary Record are comprehensive and correct. The Nominated Contact shall pass on to the Archaeological Contractor all available information relating to the circumstances of the occurrence, including a copy of the Preliminary Record and copies of other records that have been made.

9.6.12 The Nominated Contact makes any recovered finds available for inspection by the Archaeological Contractor.

*Actions by the Retained Archaeologist*

9.6.13 When contacted by the Nominated Contact and once information has been passed on, the Archaeological Contractor will enter the information in the project database / GIS.

9.6.14 The Retained Archaeologist will review all information relating to the occurrence in conjunction with geophysical and/or desk-based information.

9.6.15 The Retained Archaeologist will advise the Nominated Contact of any further actions that may be required, including:

- advice on immediate actions to be taken in respect of the discovery, including any recovered finds;
- advice on the identification of finds and the character of their seabed locations.

9.6.16 When the available information has been reviewed, this may include relevant geophysical, geoarchaeological, desk-based data, and preliminary research, the Retained Archaeologist will assess the archaeological potential and importance of the discovery.

*Reporting*

9.6.17 The Applicant and/or Construction Contractor(s) will report any discovery of 'wreck' to the Receiver of Wreck, using the Receiver of Wreck website.

9.6.18 The Retained Archaeologist will produce an archaeological report of the analysis of any finds or anomalies at the end of the project. The results will be presented in a stand-alone format and will refer to the previous archaeological work.

## **10 FINDS AND ENVIRONMENTAL**

### **10.1 Finds**

*General*

10.1.1 All archaeological finds from excavated contexts will be recorded. Although finds of modern date (19th century or later) may be recorded on site and not retained, depending on the research objectives of the project, any finds relating to possible aircraft material or classified as 'wreck' under the *Merchant Shipping Act 1995* must be retained and reported to the Receiver of Wreck within 28 days.

10.1.2 Where appropriate, soil samples may be taken and sieved to aid in the recovery of small finds.

10.1.3 Any finds from terrestrial or marine contexts that require immediate treatment to prevent deterioration (e.g. conservation or specific storage conditions) will be dealt with in line with *First Aid for Finds* (Watkinson and Neal 1998) and *First Aid for Underwater Finds* (Robinson 1998). A full record will be made of any treatment given. Any further conservation beyond



first-aid must be approved by the Archaeological Curator(s) and, where applicable, the Receiver of Wreck prior to commencement.

- 10.1.4 Finds and other items of archaeological interest recovered offshore in the course of investigation are the property of The Crown Estate as the landowner, with the exception of any human remains, and 'wreck' as defined by the *Merchant Shipping Act 1995*, or material covered by the *Protection of Military Remains Act 1986*.

## 10.2 Ordnance

- 10.2.1 If items of ordnance are discovered, they will be treated with due care. Company Health & Safety policies and established operational procedures should always take priority over archaeological reporting of munitions and ordnance.

## 10.3 Human remains

- 10.3.1 In the event of discovery of any human remains in England (articulated or disarticulated, cremated or unburnt), all excavation of the deposit(s) will cease pending the Retained Archaeologist obtaining a Ministry of Justice Licence (this includes cases where remains are to be left *in situ*).
- 10.3.2 Every discovery of readily identifiable human remains made during archaeological excavations in Scotland will be reported by the Retained Archaeologist to the local police or Procurator Fiscal's office within 24 hours. Further excavation or disturbance of the remains will cease until the excavation director is advised formally by the legal authorities that work may continue (this includes cases where remains are to be left *in situ*).
- 10.3.3 Should human remains require removal, all excavation and post-excavation will be in accordance with the Retained Archaeologist's protocols, with any directions which may be given by the Secretary of State, and current guidance documents (e.g. McKinley 2013) and the standards set out in ClfA Technical Paper 13 *Excavation and post-excavation treatment of cremated and inhumed remains*. Appropriate specialist guidance/site visits will be undertaken if required.
- 10.3.4 The final deposition of human remains subsequent to the appropriate level of osteological analysis and other specialist sampling/examinations will follow the requirements set out in the Ministry of Justice licence.

## 10.4 Treasure

- 10.4.1 The Retained Archaeologist will immediately notify the Client and the Curators on discovery of any material covered, or potentially covered, by the *Treasure Act 1996* (as amended by *The Coroners and Justice Act 2009*). All information required by the *Treasure Act* (i.e., finder, location, material, date, associated items etc.) will be reported to the Coroner within 14 days. Items falling under the *Treasure Act* will be removed from the site by the Retained Archaeologist and stored in a secure location, pending a decision by the Coroner.
- 10.4.2 Material recovered below Mean High Water Springs (MHWS) to 12 nm may be regarded as Wreck under the *Merchant Shipping Act 1995*.

## 10.5 Aircraft

- 10.5.1 Under the *Protection of Military Remains Act 1986*, it is an offence to tamper with, damage, move or unearth any items related to a military aircraft crash site, unless the Ministry of



Defence has issued a licence authorising such an activity. A license is required irrespective of whether the aircraft was in the service of another nation's armed forces.

- 10.5.2 Application for a licence, and any subsequent work, should be undertaken in line with the Ministry of Defence's *Military Aircraft of Historical Interest: Licensing of Excavations in the UK: Notes for Guidance of Recovery Groups* (Revised 2018)<sup>4</sup>. Should human remains be discovered, they should not be touched, but must be reported immediately to the Ministry of Defence (as per paragraph 15 of the guidance).
- 10.5.3 Any finds that are suspected of being military aircraft will be reported immediately to the Retained Archaeologist. In the case of a military aircraft being investigated under licence, any human remains will be reported immediately. Discoveries of aircraft material must be reported to the MoD, JCCC and, if recovered, to the Receiver of Wreck within 28 days of discovery.
- 10.5.4 For the archaeological assessment of aircraft remains, the Retained Archaeologist will refer to available guidance from Archaeological Curator(s), such as, in England, *Military Aircraft Crash Sites: Archaeological Guidance on their significance and Future Management* (English Heritage, 2002).

## 10.6 Wreck

- 10.6.1 There is a legal obligation under the *Merchant Shipping Act 1995* that all material identified as 'wreck' must be reported to the Receiver of Wreck within 28 days of discovery.
- 10.6.2 According to section 255 of the Merchant Shipping Act 1995, 'wreck' can be defined as 'jetsam, flotsam, lagan and derelict found in or on the shores of the sea or any tidal water' that have come from a ship, aircraft or hovercraft (vessel) and includes cargo and equipment.
- 10.6.3 Not only does the legislation cover wreck material recovered from within UK territorial waters (out to 12 nautical miles), but also material that has been brought into UK territorial waters from elsewhere.
- 10.6.4 Wreck material is reported to the Receiver of Wreck by completing a 'Report of wreck and salvage' form (MSF 6200). A droit number will be assigned to each report of wreck, which could include a single or multiple objects from one location/wreck site.
- 10.6.5 The Receiver of Wreck's remit is to research and establish who owns the wreck and to liaise with the finder, owner or other interested parties including archaeologists and museums.
- 10.6.6 All material reported as wreck must be retained and held on indemnity to the Receiver of Wreck's orders whilst the droit remains open, which could extend beyond a year. The location(s) of such storage will be confirmed following discussion between the Client and/or their appointed representatives and the Retained Archaeologist. The Receiver of Wreck must be made aware of these storage locations and any further movement of reported material.
- 10.6.7 If the Receiver of Wreck has not found ownership of any recovered wreck material within one year, the material becomes 'unclaimed' and as such the property of the Crown. The

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[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/916555/20180514\\_Licence\\_NotesforGuidance\\_2018-3.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/916555/20180514_Licence_NotesforGuidance_2018-3.pdf)



Receiver of Wreck can then dispose of these items on behalf of the Crown. For material that is of historical or archaeological importance, the Receiver of Wreck will try to ensure that it is offered to an appropriate museum. If an appropriate museum or institution is not found, then the Receiver of Wreck may offer the material to the finder *in lieu* of salvage. Due to the longevity of this process, the Applicant /their Construction Contractor(s) should frequently liaise with the Receiver of Wreck until a decision on ownership has been made and the droits can be formally closed.

- 10.6.8 If a museum or suitable institution is found by the Retained Archaeologist, this should be confirmed through liaison between the Applicant /their Construction Contractor(s) (as the named finder on the Report of Wreck and Salvage) with the Receiver of Wreck. It is furthermore recommended that droits are formally closed by the Receiver of Wreck prior to material being accessioned by a museum.

## **11 POST-EXCAVATION AND REPORTING**

### **11.1 Finds**

- 11.1.1 All retained archaeological finds will, as a minimum, be washed, weighed, identified and given a unique identifier. They will then be recorded to a level appropriate to the aims and objectives of the investigation.
- 11.1.2 Metalwork, especially from stratified contexts, will be X-rayed and, along with other fragile and delicate materials, stored in a stable environment. The X-raying of objects and other conservation needs will be undertaken by the Retained Archaeologist's in-house conservation staff, or by another approved conservation centre.
- 11.1.3 Artefacts and other finds that do not require specific conservation measures will be suitably bagged and boxed in accordance with the guidance given by the relevant museum and generally in accordance with the standards of the ClfA (2014b).

### **11.2 Conservation and storage**

- 11.2.1 All recovered materials of archaeological interest will be subject to a Conservation Assessment to gauge whether special measures are required while the material is being held. The Conservation Assessment must be approved by the Archaeological Curator(s) and, where applicable, the Receiver of Wreck. This Conservation Assessment will be carried out by the Retained Archaeologist or an Archaeological Contractor with an appropriate level of expertise, with advice from appropriate specialists. The Retained Archaeologist or an Archaeological Contractor with appropriate expertise will implement recommendations arising from the assessment. If no special measures are recommended, finds will be conserved, bagged, boxed and stored in accordance with industry guidelines (ClfA 2014b).

### **11.3 Reporting**

#### *General*

- 11.3.1 Following completion of the fieldwork and/or the assessment of the data, draft report(s) will be submitted for approval to the Applicant and the Curator(s), for comment. Reports may be issued for individual fieldwork or assessment packages with a final close-out report, or the work summarised in a single final report. Once approved, a final version will be submitted.
- 11.3.2 The report will typically include the following elements:



- A non-technical summary;
- The aims and methods of the work;
- The results of the work including finds and environmental remains;
- A statement of the potential of the results;
- Proposals for further analysis and publication;
- Appendices;
- Illustrations; and
- References

11.3.3 A copy of the report(s) will be deposited with the National Marine Heritage Dataset (Mariner) and the relevant Historic Environment Record (HER), along with surveyed spatial digital data (.dxf or shapefile format) relating to the evaluation.

11.3.4 Information from this project should be made publicly available where feasible. . The information can then support appreciation and enjoyment of the historic environment, on local, regional and national levels, and also enable further academic research and inform marine plans. In addition, dissemination can bring about greater awareness of the historic environment, which can in turn engender local pride.

#### *Publication*

11.3.5 If no further mitigation works are undertaken, a short report on the results of the evaluation will be prepared for publication in a suitable journal, if considered appropriate and agreed with the Applicant and the Curator(s).

#### *OASIS*

11.3.6 An OASIS online record (<https://oasis.ac.uk/>) will be created, with key fields completed, and a .pdf version of relevant reports submitted, within six months of each report being approved by the Applicant. Copies of the OASIS record will be integrated into the relevant local and national records and published through the Archaeology Data Service ArchSearch catalogue. However, projects subject to any contractual requirements on confidentiality, or with the discovery of vulnerable sites, will only be uploaded to OASIS following confirmation from the Applicant and/or Archaeological Curator.

## **12 ARCHIVE STORAGE AND CURATION**

### **12.1 Treasure Trove**

12.1.1 In Scotland, upon completion of all fieldwork details of the site name, location, excavating unit, point of contact for the project and composition/size of archaeological assemblage will be submitted to the Treasure Trove Unit via the 'Standard organised fieldwork reporting' form.

12.1.2 Under the laws of Treasure Trove and bona vacantia, all material recovered by archaeological intervention in Scotland belongs to the Crown. Material may not be removed from Scotland without the prior written permission of the Queen's and Lord Treasurer's Remembrancer. Should it be necessary to transport finds outside of Scotland then permission will be sought via an 'Application form for authority to borrow unallocated Treasure Trove for research purposes'.



## 12.2 Museum

- 12.2.1 Effort will be made to identify a suitable repository for the archive resulting from the investigation in England. If no suitable repository is identified, the Retained Archaeologist will continue to store the archive, but may institute a charge to the Applicant for ongoing storage beyond a set period.
- 12.2.2 Deposition of any finds with will only be carried out with the full agreement of The Crown Estate or the owner (as confirmed by the Receiver of Wreck).
- 12.2.3 Shipwrecks and any material relating to a wreck found in or on the shores of the sea or any tidal water must be reported to the Receiver of Wreck receiving a unique droit number. Deposition of any finds with the museum will only be carried out with the agreement of The Crown Estate or the owner of the material (as confirmed by the Receiver of Wreck). Any droits should be formally closed by the Receiver of Wreck prior to material being accessioned to a museum. If droits are still open immediately prior to deposition, then the museum must agree to accept the material with open droits in the understanding that they will eventually be closed to the museum. The Receiver of Wreck must be notified of this agreement.
- 12.2.4 The Retained Archaeologist may institute a charge to the Applicant for the cost of long-term storage of the archive beyond a set period.
- 12.2.5 The relevant digital archive from Scotland and England will be deposited with Historic Environment Scotland and Historic England. Effort will be made to identify a suitable repository for the physical archive resulting from the investigation. If no suitable repository is identified, the Retained Archaeologist will continue to store the archive, but may institute a charge to the Applicant for ongoing storage beyond a set period.

## 12.3 Transfer of title

- 12.3.1 On completion of the investigation (or extended fieldwork programme), effort will be made to encourage the legal owner of any finds recovered from England (e.g. The Crown Estate), with the exception of human remains and any objects covered by the *Treasure Act* 1996 or aircraft material covered by the *Protection of Military Remains Act* 1986 (and therefore under the ownership of the Joint Casualty and Compassionate Centre of the Ministry of Defence), to transfer their ownership to the museum in a written agreement. Furthermore, ownership would be sought by the Receiver of Wreck for any material reported under the *Merchant Shipping Act* 1995. Droit reports associated with such material must be formally closed prior to material being accessioned by a museum.
- 12.3.2 On completion of the investigation (or extended fieldwork programme), effort will be made to persuade the legal owner of any finds recovered from Scotland, to transfer their ownership to the accepting institution in a written agreement. Furthermore, ownership would be sought by the Receiver of Wreck for any material reported under the *Merchant Shipping Act* 1995. Droit reports associated with such material must be formally closed prior to material being accessioned by a museum.

## 12.4 Preparation of archive

- 12.4.1 The complete project archive, which may include paper records, graphics, artefacts, ecofacts and digital data, will be prepared following the standard conditions for the acceptance of excavated archaeological material, and in general following nationally recommended guidelines (SMA 1995; ClfA 2014d; Brown 2011; ADS 2013). The archive





will usually be deposited within one year of the completion of the project, with the agreement of the Applicant.

- 12.4.2 The relevant Archaeological Curator(s) and the Retained Archaeologist will agree with the receiving institution a policy for the selection, retention and disposal of recovered or excavated material, and confirm requirements in respect of the format, presentation and packaging of archive records and materials. The receiving institution will be notified in advance of any fieldwork.
- 12.4.3 All digital data will be considered part of the primary archive and will accord with the procedures recommended by The Crown Estate, Marine Environment Data and Information Network (MEDIN), Archaeological Data Service (ADS), HES, HE and the accepting institution as appropriate.

## 12.5 Selection strategy

- 12.5.1 It is widely accepted that not all the records and materials (artefacts and ecofacts) collected or created during the course of an archaeological project require preservation in perpetuity. These records and materials will be subject to selection in order to establish what will be retained for long-term curation, with the aim of ensuring that all elements selected to be retained are appropriate to establish the significance of the project and support future research, outreach, engagement, display and learning activities, i.e., the retained archive should fulfil the requirements of both future researchers and the receiving Museum.
- 12.5.2 The relevant Archaeological Curator(s) and the Retained Archaeologist will agree with the receiving institution a policy for the selection, retention and disposal of recovered or excavated material, and confirm requirements in respect of the format, presentation and packaging of archive records and materials. This will be underpinned by national guidelines on selection and retention (Brown 2011, section 4) and generic selection policies (SMA 1993; Wessex Archaeology's internal selection policy) and follows the ClfA's Toolkit for Selecting Archaeological Archives.
- 12.5.3 Where practicable, the receiving institution will be notified in advance of any fieldwork. However, due to the nature of some types of fieldwork whereby it is often unknown what finds could be recovered, these discussions may take place during or even after fieldwork has ended.

### *Finds*

- 12.5.4 Selection, retention and disposal of recovered or excavated material should only occur if the legislative requirements of the *Merchant Shipping Act 1995* and *Protection of Military Remains Act 1986* are fully undertaken and the Receiver of Wreck, Ministry of Defence and other relevant stakeholders including the Archaeological Curator are involved in any such decisions.
- 12.5.5 Consultation with relevant stakeholders regarding project-specific selection decisions will be undertaken throughout the project as necessary, however at a minimum of three project review points:
- Data gathering: if any unforeseen discovery on site necessitates an amendment to the proposed collection strategy, or if adjustments are made to any sampling strategy;
  - End of data gathering (assessment stage); and



- Archive compilation.

12.5.6 If material is not accepted by a museum or other organisation and all legislative requirements are fully undertaken, then consideration will be given to the suitability for their use within handling or teaching collections by the museum or Wessex Archaeology, or whether they are of particular interest to the local community. Remaining de-selected material will be disposed of. Such material will be adequately recorded to the appropriate level before de-selection.

*Documentary and digital records*

12.5.7 It is widely accepted that not all records collected during the course of an archaeological project require preservation in perpetuity. These records will be subject to selection in order to establish what will be retained for long-term curation, with the aim of ensuring that all elements selected to be retained are appropriate to establish the significance of the project and support future research, outreach, engagement, display and learning activities, i.e. the retained archive should fulfil the requirements of both future researchers and the receiving Museum.

12.5.8 The selection strategy, which details the project-specific selection process, is underpinned by national guidelines on selection and retention (Brown 2011, section 4) and generic selection policies (SMA 1993; Wessex Archaeology's internal selection policy) and follows ClfA's Toolkit for Selecting Archaeological Archives. It should be agreed by all stakeholders (Wessex Archaeology's internal specialists, external specialists, local authority, museum) and fully documented in the project archive.

12.5.9 To promote long-term future reuse, deposition file formats will be of archival standard, open source and accessible in nature following national guidance from ADS 2013, ClfA 2014c and the requirements of the digital repository.

12.5.10 Any sensitive data is to be handled according to Wessex Archaeology data policy to ensure it is stored and transferred securely. The identity of individuals will be protected in line with GDPR. If required, data will be anonymised and redacted. Selection and retention of sensitive data for archival purposes will occur in consultation with the Applicant and relevant stakeholders. Confidential data will not be selected for archiving and will be handled as per contractual obligation.

12.5.11 De-selected data will be stored on Wessex Archaeology secured servers on offsite storage locations. The Wessex Archaeology IT department has a backup strategy and policies that involves daily, weekly and monthly and annual backups of data as stated in the DMP. This strategy is non-migratory, and original files will be held at Wessex Archaeology under their unique project identifier, as long as they remain useful and usable in their final version format. This data may also be used for teaching or reference collections by the museum, or by WA unless otherwise required by contractual or copyright obligations.

*Palaeoenvironmental material*

12.5.12 All contexts suitable for environmental sampling will be considered for sampling. A site-specific sampling strategy (SSSS) may be recommended for this project and will be prepared to accompany this WSI. The SSSS is intended to guide the retrieval of palaeoenvironmental evidence during the site investigations with the purpose of addressing their site-specific objectives. The SSSS will be prepared following Wessex Archaeology's in-house guidance, which adheres to the principles outlined in Historic England's guidance (English Heritage 2011 and Historic England 2015b). Where applicable, the Archaeological Curator should be included in any discussions.



12.5.13 De-selected material from samples will be disposed of after processing and post-excavation recording. All processed material will be adequately recorded to the appropriate level before de-selection.

## **12.6 Security copy**

12.6.1 In line with current best practice (e.g., Brown 2011), on completion of the project a security copy of the written records will be prepared in the form of a digital PDF/A file. PDF/A is an ISO-standardised version of the Portable Document Format (PDF) designed for the digital preservation of electronic documents through omission of features ill-suited to long-term archiving.

## **13 COPYRIGHT**

### **13.1 Archive and report copyright**

13.1.1 The full copyright of the written/illustrative/digital archive relating to the project will be retained by the Retained Archaeologist under the *Copyright, Designs and Patents Act 1988* with all rights reserved. The Applicant will be licenced to use each report for the purposes that it was produced in relation to the project as described in the specification. The museum, however, will be granted an exclusive licence for the use of the archive for educational purposes, including academic research, providing that such use conforms to the *Copyright and Related Rights Regulations 2003*. In some instances, certain regional museums may require absolute transfer of copyright, rather than a licence; this should be dealt with on a case-by-case basis.

13.1.2 Information relating to the project will be deposited with the Historic Environment Record (HER) where it can be freely copied without reference to the Retained Archaeologist for the purposes of archaeological research, or development control within the planning process.

### **13.2 Third party data copyright**

13.2.1 This document, the evaluation report and the project archive may contain material that is non-Wessex Archaeology copyright (e.g., Ordnance Survey, British Geological Survey, Crown Copyright), or the intellectual property of third parties, which the Retained Archaeologist will be able to provide for limited reproduction under the terms of our own copyright licences, but for which copyright itself is non-transferable by Wessex Archaeology. Users remain bound by the conditions of the *Copyright, Designs and Patents Act 1988* with regard to multiple copying and electronic dissemination of such material.



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## APPENDICES

### Appendix 1 Marine Cultural Heritage and Archaeology Gazetteers

*Marine Scheme in Scottish waters*

Marine Heritage Assets (Cambois Connection)

WA ID	External References	Description	Easting (UTM30N)	Northing (UTM30N)
2004	UKHO 70438; CANMORE 324323	UKHO record of Swedish steamship <i>Oswin</i> . This was built in 1890 by T. Turnbull in Whitby, with two boilers, trip expansion engine of 172 NHP, and a single shaft. At the time of loss it was owned by Walhall, Helsingborg. The ship was captured and sunk on 12 March 1918 by UB-62, en route from Methil to Malmo with a cargo of coal. The site was examined in 2007 using DGPS and located at a general depth of 59.8 m, measuring 84 m in length, 21 m wide and a height of 8.1 m. It consisted of a large degraded wreck with the north east section collapsed. Last survey was in 2009 by divers.	601306	6245087
2015	UKHO 3148	UKHO record of a non-dangerous wreck found by multibeam in a general depth of 57.4 m. Measuring 79 m in length, 20 m wide and a height of 6.2 m, with the bow facing one end. First located in 1964, then again in 1972. The last survey in 2005 has shown that it is well broken up and the depth has been amended to 51 m.	594900	6216005
2019	UKHO 65633; CANMORE 324102	UKHO record of wreck found by multi beam that lies at a depth of 49 m. Was located using DGPS and extends 3.9 m, is 7 m wide and has a height of 7.9 m. It is possible that it is a section of debris in association with (3148). Last surveyed in 2005.	595053	6215992

#### Berwick Bank Wind Farm array area (BBWFL 2022b)

ID number	Basic description	Area	Easting	Northing	AEZ (m)	Potential
BBMB_MBES_2020_0002	Wreck	BBWF array area	567551.6	6246445	75 from extents	High
BBMB_MBES_2020_0005	Wreck	BBWF array area	588871.4	6232900	50 from extents	High
BBMB_MBES_2020_0006	Wreck	BBWF array area	590388.3	6232873	50 from extents	High
BBMB_MBES_2020_0007	Unidentified debris	BBWF array area	591704.6	6233922	10 from extents	Medium
BBMB_MBES_2020_0008	Unidentified debris	BBWF array area	591460	6234081	10 from extents	Medium
BBMB_MBES_2020_0009	Unidentified debris	BBWF array area	591260	6234573	10 from extents	Medium
BBMB_MBES_2020_0010	Wreck	BBWF array area	597610.4	6231316	50 from extents	High
BBMB_MBES_2020_0015	Mound	BBWF array area	599253.7	6225537	20 radius	Medium
BBMB_MBES_2020_0016	Likely geological	BBWF array area	591068.8	6258080	15 from extents	Medium
BBMB_SBP_2020_0001	Anomaly at depth 3.3 m	BBWF Offshore Export cable corridor to Branxton	549261	6206294	30 radius	Medium



BBMB_SSS_2020_0028	Potential debris	BBWF Offshore Export cable corridor to Branxton	562254	6217905	15 radius	Medium
BBMB_SSS_2020_0089	Seabed disturbance	BBWF Offshore Export cable corridor to Branxton /BBWFarray area	593403.5	6223700	15 radius	Medium
BBMB_SSS_2020_0092	Unidentified debris	BBWF Offshore Export cable corridor to Branxton	567172.9	6218924	15 radius	Medium
BBMB_SSS_2020_0136	Unidentified debris	BBWF array area	573999.2	6250628	15 radius	Medium
BBMB_SSS_2020_0178	Unidentified debris with magnetic anomaly	BBWF array area	567819.5	6237262	15 from extents	Medium
BBMB_SSS_2020_0189	Wreck	BBWF array area	574835.5	6230068	50 from extents	High
BBMB_SSS_2020_0209	Likely geological	BBWF array area	596419.7	6237799	15 radius	Medium
BBMB_SSS_2020_0212	Wreck	BBWF array area	601282.4	6245057	100 from extents	High
BBMB_SSS_2020_0230	Wreck debris	BBWF array area	590472.5	6259083	0	Medium
BBMB_SSS_2020_0254	Wreck debris	BBWF array area	601207.6	6245031	0	Medium
BBMB_SSS_2020_0255	Wreck debris	BBWF array area	601307.1	6244997	0	Medium
BBMB_SSS_2020_0258	Unidentified debris	BBWF array area	595006.5	6260421	15 from extents	Medium
BBMB_SSS_2020_0294	Likely geological	BBWF array area	592454.3	6255077	15 radius	Medium
BBMB_SSS_2020_0298	Wreck	BBWF array area	590519.6	6259052	75 from extents	High
BBMB_SSS_2020_0311	Unidentified debris	BBWF array area	595997.4	6242135	15 radius	Medium
BBMB_SSS_2020_0317	Potential debris	BBWF array area	597156.8	6233526	20 radius	Medium
BBMB_SSS_2020_0329	Unidentified debris	BBWF array area	589027.1	6237440	15 radius	Medium
BBMB_SSS_2020_0332	Wreck	BBWF array area	597770.1	6227610	50 from extents	High
BBMB_SSS_2020_0340	Unidentified debris	BBWF array area	591642.8	6227316	15 from extents	Medium
BBMB_SSS_2020_0341	Wreck	BBWF array area	591366.5	6226686	50 from extents	High
BBMB_SSS_2020_0360	Wreck	BBWF array area	577863.1	6245712	75 from extents	High
BBMB_SSS_2020_0364	Unidentified debris	BBWF array area	577231.7	6239667	15 from extents	Medium
BBMB_SSS_2020_0368	Mound	BBWF array area	570872.7	6255445	20 radius	Medium
BBMB_SSS_2020_0373	Wreck	BBWF array area	571145.9	6248793	50 from extents	High
BBMB_SSS_2020_0374	Unidentified debris with magnetic anomaly	BBWF Offshore Export cable corridor to Branxton	579361.4	6225549	25 from extents	Medium
BBMB_SSS_2020_0380	Seabed disturbance	BBWF array area	586970.2	6232105	15 radius	Medium



Marine Scheme in English waters

Palaeogeographic Features of Archaeological Potential

ID	Classification	Archaeological discrimination	Depth range (mBSB)		Description	Anomaly type	Dataset	Section	Jurisdiction
			From	To					
75000	Dune feature	U1	0.5	3.5	Top of a possible sand dune feature. Identified as two, possibly three mounds, overlying interpreted till which may form an old land surface. Some evidence of cross cutting, although this is uncertain. The fill of the possible dune is generally unstructured. Feature is overlain by a more chaotic unit interpreted as sands. Possibly indicative of terrestrial land formations, however, may also be subaqueous in formation.	SBP	SBP_L05	L05	English Offshore Waters
75001	Cut and fill	P2	1.1	3.3	Narrow, shallow cut and fill into a slope of interpreted till with faint non-uniform fill. Feature has a relatively faint basal reflector and acoustically unstructured fill. Overlain by a unit characterised by parallel reflectors which possibly represent Unit 4a. May be an internal till feature but has the potential of being remnant of a fluvial feature and so has been retained as a precaution.	SBP	SBP_L05	L05	English Offshore Waters
75002	Cut and fill	P2	1.0	5.1	Possible cut and fill identified cutting into interpreted till. Feature has a relatively distinct basal reflector and generally acoustically chaotic fill with some occasional sub-horizontal reflectors. Overlain by an acoustically chaotic deposit interpreted as sands in the south-west, may be overlain by a layer of till in the north-east, but this is uncertain. Only definitively seen on two lines and may extend further WNW and ESE, but extents not visible in the data so this is uncertain. May be an internal feature within the till; however, has the potential of being remnant of a fluvial feature and so has been retained as a precaution.	SBP	SBP_L12	L12	English Offshore Waters
75003	Cut and fill	P2	0.7	1.4	Possible cut and fill with a relatively distinct basal reflector, identified cutting into interpreted till. Overlain by a more chaotic unit interpreted as sand. May be an internal feature within the till; however, has the potential of being remnant of a fluvial feature and so has been retained as a precaution.	SBP	SBP_L15	L15	English Inshore Waters

Seabed Features of Archaeological Potential

ID	Class	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m LAT)	Description	Anomaly type	Dataset	Section	Jurisdiction	External reference
70039	Wreck	618257	6204025	A1	61.4	24.8	5.0	A large, irregular but generally compact area of mounds of varying shapes and sizes identified in the MBES data. Interpreted as a fairly constrained but well degraded wreck. It lies at a general depth of -61.5 m and is aligned north-east to south-west. The mounds are generally small, irregular and low-lying, though taller mounds are visible at the north-east, central and south-west extents. The central area contains two larger elongate mounds, the largest measuring 14.5 x 6.0 x 1.5 m. The tallest mound is visible at the south-west end, measuring approximately 12.0 x 7.0 x 5.4 m, and has an irregular form which may indicate individual sections. There is a slight surrounding scour within the surrounding sediments which extends primarily to the north-east, and some possible small surrounding mounds along the western and eastern edges, which may indicate potential for further debris. The wreck has also been identified in the Backscatter data, although is somewhat affected by the nadir. It appears as a large, elongate seabed disturbance comprising dark and bright reflectors with a defined south-western edge but no obvious internal structure. This wreck has a corresponding UKHO record (65638) which reports an unknown well broken and degraded wreck last examined in 2005. Recorded at a general depth of 61.8 m with measurements of 58 x 25 x 5.7 m. These measurements differ from those recorded in the MBES dataset, and the decreased height and increased length may indicate the wreck is collapsing further and spreading within the surrounding sediments.	MBES, Backscatter, Historic record	MBES_L07, Backscatter_L07	L07	English Offshore Waters	UKHO 65638, Canmore 324106





ID	Class	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m LAT)	Description	Anomaly type	Dataset	Section	Jurisdiction	External reference
70041	Debris	618832	6202931	A1	20.4	8.0	2.2	An elongate and irregular mound, identified in the MBES data, on a north-east to south-west alignment and with multiple peaks, which may indicate separate sections or structure. The north-east end appears to be wider than the south-west end, bulging out in a subrounded mound that is 4.8 x 5.1 x 2.2 m. The south-west end appears to be low-lying with an upstanding peak with a similar height at the very south-west extents. Data is missing on the very south-west end of the anomaly which may impact interpretation. Some slight scour is visible around the very southern end. Identified in the Backscatter data as a distinct, elongate feature comprising dark and bright reflectors. Another anomaly, <b>70042</b> , is located approximately 70 m to the south-east on a similar alignment. The surrounding area is clear with some areas of possible mobile seabed sediment. Interpreted as a possible significant piece of debris.	MBES, Backscatter	MBES_L07, Backscatter_L07	L07	English Offshore Waters	-
70056	Wreck	625250	6181920	A1	38.0	8.0	2.6	A distinct rectangular mound with an irregular internal composition, lying on a north-east to south-west alignment in the MBES data, and interpreted as a wreck. There is some data missing over the centre which may have removed some important features. It is not clear which end is the bow and which is the stern, but the south-west end is tentatively more pointed. The wreck appears most prominent at the north-east end, with the south-west end more low-lying, which may indicate it is more broken-up or degraded here or is partially buried in surrounding sediments. The lowest point is at 12.5 m from the south-west end and is 0.6 m tall. The tallest point is 2.6 m at 21 m from the south-west edge towards the centre. There is some encircling scour, visible predominantly to the south and west, and also visible along the northern edge. Some possible mounds are visible at the northern edge which may represent associated debris. There also appears to be some sediment build-up around the scour at the south-west end which may obscure additional debris. Also identified in the backscatter dataset as a distinct, compact, elongate area of dark and bright reflectors with no obvious structure discernible. This wreck has a corresponding UKHO record (65637) which reports it to be the British trawler <i>Acantha</i> (Possibly). Recorded in Lloyds War Losses WWI as sunk on 5 September 1919 after being torpedoed, however it seems to have actually sunk on 5 April 1915 (Anon. 1915; Canmore 324137). It was last surveyed in 2005 and located at a general depth of 79.2 m with recorded measurements of 43.0 x 16.0 x 5.5 m, and was reported to be intact though collapsed. These measurements differ from those recorded in the MBES dataset, and the decreased height and width may indicate the wreck is collapsing further and becoming buried within the surrounding sediments.	MBES, Backscatter, Historic record	MBES_L12, Backscatter_L12	L12	English Offshore Waters	UKHO 65637; CANMORE 324105
70074	Wreck	621115	6150451	A1	78.6	14.6	6.4	A distinct elliptical mound identified in the MBES data, aligned generally north to south, and interpreted as a wreck. A more pointed end is visible to the north and a more angular end at the south, suggesting that this is the bow and stern respectively, although this cannot be certain. The southern end is also more irregular suggesting that there is damage in that area. The centre the wreck is slightly raised, and there appears to be generally angular holes along the top, indicating the appearance of structure. There are small amounts of data missing over the anomaly which may have removed some features. There appears to be scouring along each side, with some slight sediment build-up at the north and southern extents. The wreck appears generally intact with no obvious surrounding debris. Also identified in the backscatter data as an elongate but compact area of dark and bright reflectors, with a defined edge, indicating the hull outline. This wreck has a corresponding UKHO record (4370), which reports the location of an unknown wreck, last examined in 1999. The wreck was located at a general depth of 97 m, with recorded measurements of 78 x 12 x 8 m. The wreck was last reported to be intact and upright, with superstructure visible, which appears generally consistent with its appearance in the 2022 datasets.	MBES, Backscatter, Historic record	MBES_L12, Backscatter_L12	L12	English Offshore Waters	UKHO 4370; CANMORE 322869



ID	Class	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m LAT)	Description	Anomaly type	Dataset	Section	Jurisdiction	External reference
70083	Wreck	608138	6124628	A1	50.0	7.3	1.5	A large, compact elliptical mound with multiple peaks and steep sloped sides identified in the MBES dataset. The feature is on a northeast - southwest alignment and there are no nearby similar seabed features. There is an associated scour visible around the north-eastern tip, and no associated debris fields have been identified. The feature is only partially covered by the MBES data and, as such, the dimensions recorded here should be considered a minimum. Partially covered by Backscatter data and visible as an indistinct area of seabed disturbance. There are multiple records associated with this feature, and it is recorded in the UKHO database as a non-dangerous wreck. The wreck was last examined in 2000 at a general depth of 58 m, measuring 46.0 m in length and 14.0 m wide. No debris was associated with the site, and it was recorded as being intact and probably upright. The wreck is believed to be identified as HMS <i>Herring</i> , which sank on 22 April 1943, by the NRHE.	MBES, Historic record	MBES_L15	L15	English Inshore Waters	UKHO 58047, Canmore 323761, NHRE 1001479, HER 255559
70086	Wreck	607082	6123128	A1	78.0	15.0	8.7	A large, compact elliptical mound identified in both the MBES and Backscatter datasets and interpreted as a wreck. The wreck is aligned east-west, and the western end appears more pointed which possibly indicates it is the bow. The wreck appears to be relatively intact in the centre and towards the western end with possible superstructure visible, although appears to be severely degraded, broken-up or collapsed at the eastern extents. There is a scour around entire wreck, although this appears more pronounced at the western end, where it measures approx. 20.0 x 9.0 x -2.0 m. There is no nearby debris visible. There is possible sediment accumulation at the south-eastern end and around the scour, which has the potential to contain further buried debris. The wreck has multiple records associated with it; the UKHO record describes it as the British steamship <i>Svava</i> . This was built in 1904 by Kjobenhavens Flydedok & Skinsveart, and owned at the time of loss by the Ministry of Transport (S. Marshall & Co.). The ship sank after collisions with the <i>Fort Beausejoir</i> en route from Warworth to Thames with a cargo of coal on 10 March 1943. It was last surveyed in 2000 at a general depth of 52 m, and measured 74.0 m in length and 12.0 m wide. It was recorded as being intact, upright, and with superstructure visible.	MBES, Backscatter, Historic record	MBES_L15, Backscatter_L15	L15	English Inshore Waters	UKHO 4341, Canmore 322840, NRHE 1001478, HER 25597
70087	Wreck	606278	6121968	A1	57.0	15.0	3.5	A large, elongate mound, aligned ENE-WSW identified in the MBES and Backscatter datasets and interpreted as wreck. Both ends of the wreck are relatively pointed, with the ENE end being slightly wider. A small, irregular mound protrudes approximately 2.4 x 2.0 x 3.0 m out of the central section of its southern side. The feature appears to be relatively intact, and has an appearance consistent with that of a submarine, lying on its side. Slight scour is present around the entire wreck, and no additional debris fields or individual pieces of debris were identified. The wreck is present within numerous records, and the UKHO record it as probably the British submarine HMSM <i>Unity</i> . The submarine was constructed from steel with diesel engines and commissioned by Vickers Armstrong in 1938, and was lost on 29 April 1940 due to a collision with SS <i>Atle Jarl</i> 6.5 miles off Newbiggin-by-the-sea during a North Sea patrol. The UKHO lists this record as a non-dangerous wreck. The site was last surveyed in 2000, located at a general depth of 50 m, measuring 54.0 m in length and 9.0 m wide. No debris was previously identified associated with the wreck, and it was thought to be intact and lying on its side.	MBES, Backscatter, Historic record	MBES_L15, Backscatter_L15	L15	English Inshore Waters	UKHO 4334



ID	Class	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m LAT)	Description	Anomaly type	Dataset	Section	Jurisdiction	External reference
70040	Depression	618329	6204021	A2_h	16.0	6.9	-0.3	A large, elongate depression identified in the MBES dataset. There is possibly a slight mound in the bottom of it, although this is unclear, which may indicate a possible object. Located 57 m east of wreck <b>70039</b> , and may be related. There is no anomalous feature identified in the backscatter data at this location. The surrounding area is clear with some areas of possible mobile seabed sediment. May indicate sediment disturbance around buried, or partially buried, debris.	MBES	MBES_L07	L07	English Offshore Waters	-
70105	Linear debris	595566	6113083	A2_h	390.1	2.1	-0.1	A seabed disturbance identified in the MBES data comprising a series (at least 14) of regularly spaced rounded depressions, each approximately 2.1 m in diameter, on a NNW/SSE alignment. Tentatively visible in the Backscatter data as multiple small bright reflectors on a linear alignment. Interpreted as a possible long length of linear debris, and potentially fishing gear, but this cannot be confirmed without visual inspection.	MBES	MBES_L16	L16	English Inshore Waters	-
70106	Linear debris	595343	6113032	A2_h	427.0	4.1	-0.3	A seabed disturbance identified in the MBES data comprising a series (at least 16) of regularly spaced rounded depressions, each approximately 4.1 m in diameter, on a NNW/SSE alignment. Also identified in the Backscatter data as a distinct linear alignment of small bright reflectors. Interpreted as a possible long length of linear debris, and potentially fishing gear, but this cannot be confirmed without visual inspection.	MBES, Backscatter	MBES_L16, Backscatter_L16	L16	English Inshore Waters	-
70108	Debris field	594531	6112676	A2_h	10.5	3.5	0.5	A debris field identified in the MBES data as a distinct, sub-angular mound, measuring 4.3 x 3.5 x 0.5 m, with a thin, straight linear mound extending 6 m from the southern end of the larger feature to the WSW with a further small rounded mound at the end (1.3 x 1.3 x 0.5 m). The larger mound appears to have four outer peaks and a central peak within a slight scour and may be one large object with varying height or several closely-spaced smaller objects. Also identified in the Backscatter data as a distinct rounded, bright reflector surrounded by a thin, dark reflector. The linear feature and smaller mound are not visible. The feature is isolated within a generally featureless seabed. Interpreted as a possible debris field.	MBES, Backscatter	MBES_L16, Backscatter_L16	L16	English Inshore Waters	-
70000	Dark reflector	599327	6212844	A2_l	3.0	2.0	-	A small sub-angular dark reflector with possible bright reflector indicating scour identified in the Backscatter data. Located on the nadir visible in the data and could be a data artefact. No anomalous features were identified in the MBES data at this location. May be a data artefact but may also be a possible natural feature or may be possible debris.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-
70001	Dark reflector	600332	6212677	A2_l	7.0	5.0	-	An irregular dark reflector, slightly darker than the surrounding seabed, identified in the Backscatter data. Visible as a distinct depression in the MBES data. Interpreted as a possible natural feature or may be possible debris within a depression/scour.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-
70002	Mound	599881	6212071	A2_l	3.0	2.5	0.1	A rounded mound within a rounded depression identified in the MBES data. Also identified in the Backscatter data as an elongate, dark reflector. Interpreted as a possible natural feature or may be possible debris within a depression/scour.	MBES, Backscatter	Backscatter_L05, MBES_L05	L05	English Offshore Waters	-
70003	Mound	600788	6212365	A2_l	5.0	1.5	0.3	A small angular area with multiple peaks, within a wide elongate depression (0.7 m deep), identified in the MBES data. Also identified in the Backscatter dataset as a sub-rounded bright reflector. No similar features nearby. Interpreted as a possible natural feature or may be possible debris within a depression/scour.	MBES, Backscatter	Backscatter_L05, MBES_L05	L05	English Offshore Waters	-



ID	Class	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m LAT)	Description	Anomaly type	Dataset	Section	Jurisdiction	External reference
70004	Mound	600936	6212122	A2_I	2.0	2.0	0.1	A rounded mound with a sharp peak in a depression -0.4 m deep identified in the MBES data. Also identified in the Backscatter dataset as a very small, rounded bright reflector with diffuse edges. Interpreted as a possible natural feature or may be possible debris.	MBES, Backscatter	Backscatter_L05, MBES_L05	L05	English Offshore Waters	-
70005	Dark reflector	601561	6211843	A2_I	3.0	1.0	-	An elongate dark reflector with surrounding sediment disturbance identified in the Backscatter data. Observed in the MBES data as a small mound. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-
70006	Dark reflector	601334	6211621	A2_I	5.0	4.0	-	A faint curved edge of a dark reflector with flaring bright reflector to south which may indicate possible scour, as identified in the Backscatter data. Associated with an elongate depression visible in the MBES data. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-
70007	Bright reflector	601985	6211418	A2_I	13.0	4.0	-	An elongate bright reflector with some possible scour identified in the Backscatter dataset. A small, elongate depression is visible in the MBES data at this location. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-
70008	Mound	601699	6210499	A2_I	4.0	3.9	0.7	A sub-rounded mound with regular sides in a small depression as identified in the MBES data. Located in an area of mobile seabed sediment. Also identified in the Backscatter data set as a sub-rounded dark reflector. Interpreted as a possible natural feature or may be possible debris.	MBES, Backscatter	MBES_L05, Backscatter_L05	L05	English Offshore Waters	-
70009	Dark reflector	602336	6210390	A2_I	4.0	3.0	-	A sub-angular dark reflector with some encircling bright reflector as identified in the Backscatter data. Located on the nadir visible in the data and could be a data artefact. No anomalous features were identified in the MBES data at this location. May be a data artefact or could be a possible natural feature or possible debris.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-
70010	Mound	602925	6210506	A2_I	5.0	4.0	0.4	An elongate mound located within an isolated depression as identified in the MBES data. Also identified in the Backscatter data as a sub-rounded dark reflector with some possible scour to the north-west. Interpreted as a possible natural feature or may be possible debris.	MBES, Backscatter	Backscatter_L05, MBES_L05	L05	English Offshore Waters	-
70011	Dark reflector	603050	6210061	A2_I	4.0	4.0	-	A small sub-rounded dark reflector with corresponding bright reflector and possible scouring to south identified in the Backscatter data. Also visible in the MBES data as slight mound within an isolated depression. Interpreted as a possible natural feature or may be possible debris within a depression/scour.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-
70012	Seabed disturbance	603212	6210140	A2_I	14.0	13.0	-	Seabed disturbance made up of two sub-angular dark reflectors. One approximately 11 x 3 m, the other 7 x 4 m. Located on the nadir visible in the Backscatter data, but also identified as an area of possible disturbance in the MBES data. Interpreted as a possible natural feature or may indicate possible debris buried just below the surface.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-
70013	Bright reflector	603425	6210036	A2_I	11.0	5.0	-	An elongate bright reflector with a dark reflector in centre, identified in the Backscatter data. Tentatively observed in the MBES data as a mound in a depression. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-
70014	Dark reflector	604153	6209328	A2_I	5.0	4.0	-	A sub-rounded dark reflector with a neighbouring bright reflector, identified in the Backscatter data. Also visible in the MBES data as sub-rounded depression. Interpreted as possible natural feature or may be possible debris.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-



ID	Class	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m LAT)	Description	Anomaly type	Dataset	Section	Jurisdiction	External reference
70015	Bright reflector	604374	6209140	A2_I	12.0	5.0	-	An elongate bright reflector, aligned north to south, identified in the Backscatter data and visible in the MBES dataset as a sub-rounded mound within a depression. Interpreted as possible natural feature or may be possible debris.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-
70016	Bright reflector	605523	6208044	A2_I	12.0	7.0	-	A sub-rounded reflector, slightly lighter than the surrounding seabed, identified in the Backscatter data. Also observed in the MBES data as an elongate depression, anomalous to the seabed patterning visible to the west. Interpreted as a possible natural feature or may be possible debris within a depression/scour.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-
70017	Bright reflector	607437	6206683	A2_I	15.0	6.0	-	A large, elongate bright reflector identified in the Backscatter data. Also visible in the MBES data as a small mound within a depression, with a short scour extending to the SSE. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-
70018	Seabed disturbance	608075	6205788	A2_I	37.9	22.7	0.5	A seabed disturbance comprising a large, irregular area of bright reflector identified in the Backscatter dataset. Also identified in the MBES data as a pair of large, sub-rounded mounds with rounded peaks, surrounded by slight scour. Interpreted as a possible natural feature or may be possible debris.	MBES, Backscatter	Backscatter_L05, MBES_L05	L05	English Offshore Waters	-
70019	Dark reflector	608250	6205854	A2_I	11.0	5.0	-	An elongate dark reflector identified in the Backscatter dataset. Located on the nadir and could be a data artefact. No anomalous features were identified in the MBES data at this location. May be a data artefact or could be a possible natural feature or possible debris.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-
70020	Seabed disturbance	613354	6200619	A2_I	31.0	16.0	0.2	An irregular, relatively flat area of data different in appearance to the surrounding seabed identified in the MBES data. No similar seabed features nearby. May be a data artefact, but appears crossing the background artefacts in the data. No anomalous features were identified in the Backscatter data at this location. Interpreted as a possible natural feature or may be possible debris.	MBES	MBES_L05	L05	English Offshore Waters	-
70021	Dark reflector	616234	6198190	A2_I	15.0	5.0	-	An isolated, elongate dark reflector with possible sediment disturbance to north, identified in the Backscatter data. No anomalous features were identified in the MBES dataset at this location. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-
70023	Dark reflector	621079	6194100	A2_I	4.0	3.0	-	A small, sub-rounded bright reflector identified in the Backscatter data. Tentatively observed as a small mound within a scour in the MBES dataset. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L05	L05	English Offshore Waters	-
70024	Dark reflector	608443	6224245	A2_I	6.0	5.0	-	Indistinct sub circular feature identified in the Backscatter data adjacent to the nadir, with a possible scour on the southern side. A small mound within a slight scour is visible in the MBES data at this location. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L07	L07	English Offshore Waters	-
70025	Mound	608595	6224292	A2_I	2.9	2.2	0.3	A small rounded mound in a depression identified in the MBES data. Also identified in the Backscatter data as a small indistinct dark reflector with a slight scour. Interpreted as a possible natural feature or may be possible debris.	MBES, Backscatter	MBES_L07, Backscatter_L07	L07	English Offshore Waters	-
70026	Dark reflector	608918	6223218	A2_I	4.0	2.0	-	Indistinct sub-angular dark reflector with possible scour adjacent to nadir in the Backscatter data. Visible as a small distinct mound within scour in the MBES data. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L07	L07	English Offshore Waters	-



ID	Class	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m LAT)	Description	Anomaly type	Dataset	Section	Jurisdiction	External reference
70027	Mound	609904	6222259	A2_I	5.8	3.5	0.2	A small rounded mound at the base of a wider depression (-0.4 m deep) identified in the MBES dataset. The feature is deeper and more irregular than surrounding depressions. Also identified in the Backscatter data as a large diffuse seabed disturbance with an irregular shape measuring 29 x 10 m. Interpreted as a possible natural feature or may be possible debris.	MBES, Backscatter	MBES_L07, Backscatter_L07	L07	English Offshore Waters	-
70028	Depression	611023	6220857	A2_I	16.5	9.5	-0.3	A large elongate depression with a possible linear mound at the base, identified in the MBES dataset. Visible in the Backscatter data as a straight linear dark reflector with possible scour. Interpreted as a possible natural feature or may be possible debris.	MBES	MBES_L07	L07	English Offshore Waters	-
70029	Dark reflector	610492	6219913	A2_I	2.0	2.0	-	A small but distinct dark reflector identified adjacent to the nadir in the Backscatter dataset. A small mound is visible in the MBES data at this location. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L07	L07	English Offshore Waters	-
70030	Dark reflector	610656	6219538	A2_I	5.0	4.0	-	Indistinct sub circular reflector with a possible scour to the south identified in the Backscatter data. A small elongate depression visible in the MBES data at this location. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L07	L07	English Offshore Waters	-
70031	Mound	611108	6219490	A2_I	4.5	4.1	0.2	An isolated, rounded mound within a depression, identified in the MBES data. Also identified in the Backscatter data as a distinct sub-oval dark reflector with diffuse edges located on top of the nadir. Interpreted as a possible natural feature or may be possible debris.	MBES, Backscatter	MBES_L07, Backscatter_L07	L07	English Offshore Waters	-
70032	Dark reflector	612189	6217730	A2_I	8.0	6.0	-	Distinct sub-rounded feature identified in the Backscatter data. Located at the position of a small mound in the MBES data. The surrounding area is clear and surrounded by possible mobile seabed sediment. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L07	L07	English Offshore Waters	-
70033	Dark reflector	612551	6217628	A2_I	9.0	8.0	-	Large, distinct, approximately oval dark reflector with a slight scour identified alongside the nadir in the Backscatter data. A mound with a scour is also visible in the MBES data at this location. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L07	L07	English Offshore Waters	-
70034	Dark reflector	612690	6217365	A2_I	5.0	4.0	-	Distinct approximately oval dark reflector position located on the nadir identified in the Backscatter data. There are no anomalous features identified in the MBES data at this location. The surrounding area is clear and surrounded by possible mobile seabed sediment. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L07	L07	English Offshore Waters	-
70035	Mound	611864	6217049	A2_I	2.0	2.0	0.3	An isolated, rounded mound within a distinct scour identified in the MBES data. The mound itself is not clearly visible in the Backscatter data, but there are several linear dark reflectors radiating out from its location, indicating a wider seabed disturbance. This could be caused by an anchor or mooring point with loose rope or chain. There are no charted features at this location. Interpreted as a possible natural feature or may be possible debris.	MBES	MBES_L07	L07	English Offshore Waters	-
70036	Mound	614991	6211548	A2_I	4.5	4.0	0.4	A distinct, rounded mound within a slight scour identified in the MBES data. A small dark reflector is visible in the Backscatter data at this location within an area of natural seabed variation. Interpreted as a possible natural feature or may be possible debris.	MBES	MBES_L07	L07	English Offshore Waters	-
70037	Mound	615690	6208973	A2_I	4.0	3.8	0.3	An elongate mound within slight scour, identified in the MBES data. Also visible in the Backscatter data as a small elongate bright reflector within an area of interpreted mobile sediment. Interpreted as a possible natural feature or may be possible debris.	MBES	MBES_L07	L07	English Offshore Waters	-



ID	Class	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m LAT)	Description	Anomaly type	Dataset	Section	Jurisdiction	External reference
70038	Mound	618240	6204481	A2_I	5.0	4.1	1.5	An irregular mound with irregular sides within some encircling scour up to -0.4 m, identified in the MBES data. Visible as an area of irregular low seabed reflectivity in the Backscatter data. The surrounding seabed is clear with some areas of possible mobile seabed sediment. Interpreted as a possible natural feature or may be possible debris.	MBES	MBES_L07	L07	English Offshore Waters	-
70042	Dark reflector	618883	6202871	A2_I	14.0	3.0	-	A distinct elongate feature, aligned ENE to WSW and comprising dark and bright reflectors, identified in the Backscatter data. Also visible in the MBES data as an elongate depression with some small mounds visible at the ENE end. The feature is located approximately 70 m south-east of possible debris 70041. The surrounding area is clear with some areas of possible mobile seabed sediment. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L07	L07	English Offshore Waters	-
70043	Seabed disturbance	619850	6202403	A2_I	32.0	16.0	-	Distinct irregular area of dark and bright reflectors identified in the Backscatter data. The feature is approximately sub-angular with a possible bright reflector or scour extending from the nadir to the south west. There are no anomalous features identified in the MBES data at this location, although there is some slight seabed variation. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L07	L07	English Offshore Waters	-
70044	Mound	624446	6192140	A2_I	2.4	2.0	0.6	A sub-circular mound with steep varying sides and a slightly pointed top identified in the MBES data. No anomalous features were identified in the backscatter data at this location. Interpreted as a possible natural feature or may be possible debris.	MBES	MBES_L12	L12	English Offshore Waters	-
70045	Mound	624551	6191522	A2_I	4.6	3.1	0.7	A slightly elongate and irregular mound identified in the MBES data. Tentatively visible in the backscatter data as an isolated, sub-rounded bright reflector. Interpreted as a possible natural feature or may be possible debris.	MBES	MBES_L12, Backscatter_L12	L12	English Offshore Waters	-
70046	Depression	624586	6191134	A2_I	7.8	4.6	-0.6	A distinct rounded depression identified in the MBES data. Also identified in the backscatter data as an irregular bright reflector. Located 35 m north of similar anomaly 70047. Interpreted as a possible natural feature or may indicate presence of possible debris.	MBES, Backscatter	MBES_L12, Backscatter_L12	L12	English Offshore Waters	-
70047	Bright reflector	624591	6191099	A2_I	5.0	3.0	-	A distinct elongate bright reflector identified in the backscatter data. Tentatively observed in the MBES data as an elongate depression. Located 35 m south of similar anomaly 70046. Interpreted as a possible natural feature or may indicate presence of possible debris.	Backscatter	Backscatter_L12	L12	English Offshore Waters	-
70048	Dark reflector	623971	6189131	A2_I	2.0	2.0	-	An isolated, small round dark reflector identified in the backscatter data. Tentatively observed in the MBES data as a small, rounded mound. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L12	L12	English Offshore Waters	-
70049	Mound	624543	6189130	A2_I	5.0	2.1	0.8	An elongate, ridged and possibly segmented, mound within surrounding scour identified in the MBES data. Identified as a distinct, elongate sub-angular bright reflector (measuring 12.0 x 9.0 m) in the backscatter data. This feature is situated 21 m north-east of anomaly 70050. Interpreted as a possible natural feature or may be possible debris.	MBES, Backscatter	MBES_L12, Backscatter_L12	L12	English Offshore Waters	-
70050	Mound	624529	6189110	A2_I	5.2	3.1	0.1	A low-lying elongate mound identified in the MBES data on the edge of a large, irregular scour. Identified in the backscatter as a distinct, irregular bright reflector measuring 10.0 x 9.0 m. Located 21 m south-west of anomaly 70049. Interpreted as a possible natural feature or may be possible debris.	MBES, Backscatter	MBES_L12, Backscatter_L13	L12	English Offshore Waters	-



ID	Class	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m LAT)	Description	Anomaly type	Dataset	Section	Jurisdiction	External reference
70051	Depression	625014	6187799	A2_I	8.9	5.9	-0.3	A distinct, sub-angular depression with an uneven base identified in the MBES data, which may indicate partially buried objects. Identified in the backscatter data as a distinct, isolated sub-rounded bright reflector with diffuse edges. Interpreted as a possible natural feature or may be indicate presence of possible debris.	MBES , Backscatter	MBES_L12, Backscatter_L12	L12	English Offshore Waters	-
70052	Mound	624607	6187344	A2_I	5.0	2.1	0.3	An isolated and distinct sub-rounded mound, surrounded by a scour. Also observed in the backscatter data as a sub-rounded bright reflector. Interpreted as a possible natural feature or may be possible debris.	MBES	MBES_L12	L12	English Offshore Waters	-
70053	Mound	624532	6186584	A2_I	3.1	2.5	0.2	A low-lying elongate mound forming a slight ridge, identified in the MBES data. No anomalous features were identified in the backscatter data at this location. Interpreted as a possible natural feature or may be possible debris.	MBES	MBES_L12	L12	English Offshore Waters	-
70054	Mound	624395	6184040	A2_I	4.5	4.3	0.2	A small, low-lying, sub-rounded mound within a slight scour, identified in the MBES data. Identified in the backscatter as a seabed disturbance comprising a rounded dark reflector with an elongate bright reflector to the south-east, measuring approximately 12 x 10 m in total. Interpreted as a possible natural feature or may be possible debris.	MBES, Backscatter,	MBES_L12, Backscatter_L12	L12	English Offshore Waters	-
70055	Mound	625358	6183383	A2_I	3.5	2.6	0.6	A distinct, isolated, elongate mound within scour identified in the MBES data. Tentatively observed in the backscatter data as a rounded bright reflector. Interpreted as a possible natural feature or may be possible debris.	MBES	MBES_L12	L12	English Offshore Waters	-
70057	Mound	624541	6181846	A2_I	9.1	6.9	-0.4	A large, distinct, elongate mound forming a rounded ridge with shallow encircling scour, identified in the MBES data. Also identified in the backscatter data as a rounded dark reflector within an irregular area of scour. Interpreted as a possible natural feature or may be possible debris.	MBES, Backscatter	MBES_L12, Backscatter_L12	L12	English Offshore Waters	-
70058	Mound	625120	6179332	A2_I	3.1	2.9	0.1	A small, indistinct, low-lying mound within a large, sub-rounded depression identified in the MBES data. Also identified in the backscatter data as an elongate bright reflector measuring 5.0 x 4.0 m. Interpreted as a possible natural feature or may be possible debris.	MBES, Backscatter	MBES_L12, Backscatter_L12	L12	English Offshore Waters	-
70059	Mound	625077	6177907	A2_I	5.5	3.5	1.4	A distinct sub-angular mound within wide elongate scour identified in the MBES data. Tentatively visible in the backscatter data as a sub-rounded bright reflector at the centre of interpreted scour. Interpreted as a possible natural feature or may be possible debris.	MBES	MBES_L12	L12	English Offshore Waters	-
70060	Mound	625676	6175186	A2_I	30.1	15.2	1.4	A large elongate mound with irregular sides and a fairly level top, which slopes more steeply on the east side. Identified in the MBES data on an approximate north-west to south-east alignment with no evidence of any internal structure. No surrounding scour visible. Also identified in the backscatter data as an isolated, generally oval-shaped bright reflector. This feature appears very anomalous to the surrounding seabed. Interpreted as a possible natural feature or may be possible debris.	MBES, Backscatter	MBES_L12, Backscatter_L12	L12	English Offshore Waters	-
70061	Mound	625544	6172698	A2_I	3.0	2.5	0.1	A small low-lying mound within a wider depression (measuring 17 x 11 m), identified in the MBES data. Tentatively visible in the backscatter data as a sub-rounded dark reflector. Interpreted as a possible natural feature or may be possible debris.	MBES	MBES_L12	L12	English Offshore Waters	-
70062	Mound	626492	6168918	A2_I	3.0	2.0	0.2	Visible in the MBES dataset as a low lying mound in the centre of a larger scour. Identified as an isolated, rounded bright reflector in the backscatter data measuring 7 x 4 m. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L12	L12	English Offshore Waters	-





ID	Class	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m LAT)	Description	Anomaly type	Dataset	Section	Jurisdiction	External reference
70063	Dark reflector	626458	6166226	A2_I	3.0	3.0	-	An isolated, rounded dark reflector identified on the nadir in the backscatter data. Also visible in the MBES data as a small mound, surrounded by a depression. May be a data artefact, or may be a possible natural feature, or may be possible debris.	Backscatter	Backscatter_L12	L12	English Offshore Waters	-
70064	Mound	626920	6164616	A2_I	4.8	4.0	0.7	A distinct elongate mound identified in the MBES data which tapers in width and height from the south to the north and has a slight scour on the south-west edge. Identified as a slightly elongate bright reflector with a dark reflector to the south-west, measuring 12.0 x 6.0 m in the backscatter data. Interpreted as a possible natural feature or may be possible debris.	MBES, Backscatter	MBES_L12, Backscatter_L12	L12	English Offshore Waters	-
70065	Seabed disturbance	626841	6163058	A2_I	56.0	9.0	-	A long, generally straight and compact linear disturbance comprising indistinct dark and bright reflectors identified in the backscatter data. Aligned ENE to WSW, perpendicular to the nadir, with a slightly more bulbous end to the west. Tentatively observed in MBES data as an elongate area of irregular seabed, but missing data means the feature is harder to distinguish. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L12	L12	English Offshore Waters	-
70066	Bright reflector	626289	6162882	A2_I	15.0	14.0	-	An isolated, irregular area of dark and bright reflectors identified in the backscatter data. Tentatively visible in the MBES data as a cluster of small mounds within a depression. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L12	L12	English Offshore Waters	-
70067	Bright reflector	626811	6161358	A2_I	41.0	6.0	-	An elongate, isolated bright reflector, identified in the backscatter data. Tentatively observed in the MBES dataset as a slight elongate mound. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L12	L12	English Offshore Waters	-
70068	Seabed disturbance	626887	6160410	A2_I	40.0	32.0	-	A seabed disturbance comprising a curvilinear and irregular bright reflector which appears to curve around a central area of dark reflector measuring 18 x 16 m in the backscatter data. Tentatively visible in the MBES data as a large, rounded mound which appears to extend out of a larger natural seabed feature and so may be partially buried. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L12	L12	English Offshore Waters	-
70069	Dark reflector	626660	6159396	A2_I	7.0	5.0	-	A rounded dark reflector with some surrounding bright reflector, identified in the backscatter dataset. Visible in the MBES data as a small sub-angular mound at the bottom of a depression. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L12	L12	English Offshore Waters	-
70070	Bright reflector	626388	6159445	A2_I	5.0	3.0	-	An isolated, irregular bright reflector identified in the MBES data. Observed in the MBES data as a small mound at the bottom of a slight elongate depression. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L12	L12	English Offshore Waters	-
70071	Dark reflector	625668	6158028	A2_I	5.0	5.0	-	An isolated, elongate dark reflector, observed in the nadir of the backscatter dataset. Visible in the MBES data as a rounded mound within elongate scour. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L12	L12	English Offshore Waters	-
70073	Dark reflector	622658	6153548	A2_I	4.0	1.0	-	An isolated, elongate dark reflector, identified in the nadir of the backscatter data. No anomalous features were observed but there are some missing data in the MBES data set at this location. Retained as a precaution. May be a data artefact, a possible natural feature, or may be possible debris.	Backscatter	Backscatter_L12	L12	English Offshore Waters	-
70075	Bright reflector	614884	6139948	A2_I	4.0	3.0	-	An isolated, sub-angular dark reflector within a slight bright reflector identified in the backscatter data. No anomalous features were observed in the MBES data at this location. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L12	L12	English Offshore Waters	-



ID	Class	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m LAT)	Description	Anomaly type	Dataset	Section	Jurisdiction	External reference
70076	Dark reflector	610794	6133592	A2_I	3.0	3.0	-	An isolated, sub-rounded dark reflector identified in the Backscatter data, and tentatively visible as a small mound in the MBES data. The surrounding seabed is generally featureless, but with numerous small depressions. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L15	L15	English Inshore Waters	-
70077	Seabed disturbance	610260	6131503	A2_I	13.0	7.0	-	An isolated, sub-rounded seabed disturbance identified in the Backscatter data. The anomaly is made up of an elongate dark reflector aligned north/south, measuring approx. 9.0 x 3.0 m with sub-rounded bright reflectors on its east and west edges. The anomaly is visible as a small, elongate depression in the MBES data. The surrounding seabed contains numerous small depressions, some of which may form a linear alignment SSE of this anomaly, but that is potentially coincidental. Interpreted as possible debris or possible natural feature.	Backscatter	Backscatter_L15	L15	English Inshore Waters	-
70078	Dark reflector	610831	6131337	A2_I	5.0	3.0	-	An isolated, sub-rounded dark reflector identified in the Backscatter data, at the location of a small mound visible in the MBES data. The surrounding seabed is relatively featureless, with some potential mobile sediment build up to the south. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L15	L15	English Inshore Waters	-
70079	Mound	609981	6130427	A2_I	13.2	7.2	0.5	A sub-rounded seabed disturbance made up of a bright reflector, surrounded by a thin dark reflector identified in the Backscatter data. Identified as a distinct, elongate mound in the MBES dataset. There are no similar seabed features nearby, and the surrounding seabed is relatively featureless. Interpreted as possible debris or a possible natural feature.	Backscatter, MBES	Backscatter_L15, MBES_L15	L15	English Inshore Waters	-
70080	Dark reflector	610414	6130313	A2_I	3.0	2.0	-	An angular dark reflector identified in the Backscatter data. There are no anomalous features in the MBES data at this location. The surrounding seabed is clear and flat. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L15	L15	English Inshore Waters	-
70081	Depression	609223	6128777	A2_I	6.6	6.4	-0.3	An isolated, rounded depression identified in the MBES data, and visible as an indistinct rounded dark reflector within the nadir of the Backscatter data. There is a potential small feature in the base of the depression, but this is unclear. There are no similar features nearby in either the MBES or Backscatter dataset, and the surrounding seabed is relatively featureless. Interpreted as possible debris or possible natural feature.	MBES, Backscatter	MBES_L15, Backscatter_L15	L15	English Inshore Waters	-
70082	Dark reflector	609377	6127695	A2_I	8.0	2.0	-	An isolated, elongate dark reflector identified in the Backscatter data. There are no anomalous features in the MBES data at this location. The surrounding seabed is clear and flat. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L15	L15	English Inshore Waters	-
70084	Dark reflector	607182	6124596	A2_I	3.0	2.0	-	An isolated, sub-rounded dark reflector identified in the Backscatter data, and tentatively visible as a small mound in the MBES data. The surrounding seabed is clear and flat. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L15	L15	English Inshore Waters	-
70090	Seabed disturbance	606594	6121568	A2_I	14.0	6.0	-	A seabed disturbance made up of 2 rounded dark reflectors identified in the Backscatter data. The features are alongside one another and aligned north-east/south-west, and each measures approximately 4m across. Two small depressions are visible in the MBES data at this location. The surrounding seabed is covered with poorly developed bedforms, potentially indicating an area of mobile seabed sediment. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L15	L15	English Inshore Waters	-



ID	Class	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m LAT)	Description	Anomaly type	Dataset	Section	Jurisdiction	External reference
70092	Dark reflector	600783	6115458	A2_I	11.0	4.0	-	An elongate dark reflector identified in the Backscatter data. There are no anomalous features identified in the MBES data at this location. The surrounding seabed is clear and flat. Interpreted as possible debris or a possible natural feature.	Backscatter	Backscatter_L15	L15	English Inshore Waters	-
70093	Bright reflector	598881	6114898	A2_I	34.0	4.0	-	An elongate bright reflector identified in the Backscatter dataset. The feature is aligned north-east/south-west and there appears to be some sediment disturbance around its south-west end. There are no anomalous features identified in the MBES data at this location. The anomaly is on the edge of an area of natural geological outcropping at seabed, and may be related by this is uncertain. Interpreted as possible debris or possible natural feature.	Backscatter	Backscatter_L15	L15	English Inshore Waters	-
70094	Seabed disturbance	598766	6114304	A2_I	13.0	7.0	-	An isolated, irregular seabed disturbance identified in the Backscatter data. The feature is made up of a sub-rounded bright reflector, measuring 10.0 x 6.0 m, with an elongate dark reflector in the south-west corner measuring 6.0 x 3.0 m. There are no anomalous features identified in the MBES data at this location, but the feature is located on the edge of an area of natural geological outcropping at seabed. Interpreted as possible debris or possible natural feature.	Backscatter	Backscatter_L15	L15	English Inshore Waters	-
70095	Mound	598998	6114238	A2_I	17.0	2.3	0.2	A long, linear mound identified in the MBES dataset. The feature is aligned south-east/north-west. There are no anomalous features identified in the Backscatter data at this location. The anomaly may be possibly part of a surrounding rock outcrop, but appears more distinct than the background geology. Interpreted as possible debris or possible natural feature.	MBES	MBES_L15	L15	English Inshore Waters	-
70096	Dark reflector	598715	6114609	A2_I	4.0	3.0	-	A small, distinct dark reflector identified within the nadir of the Backscatter data. There are no anomalous features within the MBES at this location, but the anomaly is situated within an area of natural geological outcropping at seabed and may be related, although it appears more distinct than the background geology. Interpreted as possible debris or a possible natural feature.	Backscatter	Backscatter_L15	L15	English Inshore Waters	-
70097	Bright reflector	597614	6114260	A2_I	3.5	2.5	-	An isolated, sub-rounded bright reflector identified in the Backscatter data. Tentatively observed in the MBES data as an irregular mound. Located in a wider area of large, natural disturbance. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L16	L16	English Inshore Waters	-
70098	Bright reflector	597606	6114163	A2_I	2.0	1.0	-	An isolated, rounded bright reflector identified in the Backscatter data. No anomalous features were identified in the MBES data at this location, though this position is within a wider area of irregular seabed. Interpreted as possible natural feature or may be possible debris.	Backscatter	Backscatter_L16	L16	English Inshore Waters	-
70099	Mound	597699	6113778	A2_I	3.5	3.5	0.3	An isolated and distinct small rounded mound within an irregular depression (approximately 10 x 10 m) identified in the MBES data. There appear to be several additional smaller mounds visible in the scour pit. Also identified in the Backscatter data as an elongate bright reflector surrounded by a dark reflector with diffuse edges. Located in a generally featureless area of the seabed. Interpreted as possible natural feature or may be possible debris.	MBES, Backscatter	MBES_L16, Backscatter_L16	L16	English Inshore Waters	-
70100	Dark reflector	597564	6114135	A2_I	3.0	1.5	-	An isolated sub-rounded dark reflector identified in the Backscatter data. A tentative small mound is visible in the MBES data at this location within a wider area of natural seabed features. Interpreted as possible natural feature or may be possible debris.	Backscatter	Backscatter_L16	L16	English Inshore Waters	-



ID	Class	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m LAT)	Description	Anomaly type	Dataset	Section	Jurisdiction	External reference
70101	Seabed disturbance	597529	6114172	A2_I	11.0	4.0	-	A seabed disturbance comprising four sub-angular bright reflectors in a curved line aligned north-west to south-east, each measuring approximately 2 m across, identified in the Backscatter data. No anomalous features were identified in the MBES data at this location, though this position is within a wider area of irregular seabed. Interpreted as possible natural feature or may be possible debris.	Backscatter	Backscatter_L16	L16	English Inshore Waters	-
70107	Dark reflector	595053	6111731	A2_I	4.0	1.5	-	An isolated elongate dark reflector, located in an area of rock outcrop at the seabed, identified in the Backscatter data. Visible in the MBES data as a short, straight and ridged linear mound with some slight scouring within an area of generally rounded rocks. Interpreted as a possible natural feature or may be possible debris.	Backscatter	Backscatter_L16	L16	English Inshore Waters	-
70022	Recorded wreck	618144	6197489	A3	-	-	-	The recorded position of UKHO record 4492 which reports the presence of a wreck at a general depth of -72 m and on a north-west to south-east alignment. Has been shown on fisherman's charts and surveyed in 1964, then again in 1972 and lastly surveyed in 2006, and was not located and has been amended to dead. No anomalous features were identified in the Backscatter/MBES data at this location. Any remains associated with this record are either buried or located elsewhere.	Historic record	-	L05	English Offshore Waters	UKHO 4492; CANMORE 322987
70072	Recorded wreck	626065	6157814	A3	-	-	-	The recorded position of British steamship <i>San Bernardo</i> , which was sunk on 9 August 1916 by a German submarine 17 miles from Longstone in a north-west position. It has a general depth of 85 m and was carrying a cargo of ballast. Last surveyed in 1999 but was not located and has been amended to dead. This record was not directly covered by the Backscatter or MBES dataset and therefore no comment can be made on its presence or condition in this assessment but retained within this gazetteer for recording purposes.	Historic record	-	L12 Buffer	English Offshore Waters	UKHO 4384; CANMORE 322883
70085	Recorded obstruction	607470	6124144	A3	-	-	-	The recorded location of a foul ground present within both the UKHO and Canmore records. The feature was last surveyed in 1999 and found to be a sonar contact measuring 15.0 x 0.3 x 0.1 m and interpreted as possible debris. No anomalies were identified within the current MBES or Backscatter data, and the feature may be buried at present.	Historic record	-	L15	English Inshore Waters	UKHO 4343, Canmore 322842
70088	Recorded wreck	607050	6121706	A3	-	-	-	The recorded location of the wreck of the Norwegian steamship <i>Ragnhild</i> (possibly), recorded in a number of sources. The ship was built in 1909 by Bergens MV, Bergen containing one boiler, a triple expansion engine and a single shaft, and at the time of loss was owned by N. H. Hartmary and Co. It sank on 27 April 1917 after detonating a German laid mine, whilst en route from Skien to Tyne. Norwegian sources suggest she was torpedoed by UC-19. The site was examined in 1967 and swept clear, with another clearance sweep undertaken in 1986 and the wreck depth amended to 42 m. The site was last examined 2000, when the wreck was located at a general depth of 52 m and reported to be well broken up. The wreck is located outside the coverage of the current MBES and Backscatter data, and so no comment on the condition of the site can be made at this time.	Historic record	-	L15 Buffer	English Inshore Waters	UKHO 4335, Canmore 322834, NRHE 943539



ID	Class	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m LAT)	Description	Anomaly type	Dataset	Section	Jurisdiction	External reference
70089	Recorded wreck	606709	6121553	A3	-	-	-	The recorded location of the wreck of the English collier <i>Bangarth</i> , a steel-hulled steamer that was torpedoed by the German submarine <i>UB-34</i> on 13 December 1917 while en route from Methil to Dunkirk with a cargo of coal. This wreck was formerly believed to be the remains of the Norwegian cargo vessel <i>Ragnhild</i> , and before that was believed to be the <i>Upcerne</i> . The wreck is reported to lie on a seabed of sand and mud in a general depth of 50 m. It is reported as being very substantial, but well broken up, with the two boilers, donkey engine, condenser, and engine block exposed and surrounded by a large pile of twisted, broken machinery, steel plates and girders. There are reported to be quantities of bent and flattened copper pipes, brass flanges, and valves intermingled with the pile of steel debris, but it appears that the wreck has been salvaged at some time or another (The Comprehensive Guide to Shipwrecks of the North East Coast, Vol 2 1918-2000, page 190). The site was dived on in 2008 (10 September) at the listed position and positively identified as the <i>Bangarth</i> (Digital marine geographic information derived from SeaZone Hydrospatial 05-Jan-17; United Kingdom Hydrographic Office (UKHO) wreck report 4336). Despite this positive identification of a substantial wreck, no anomalies were visible in the current MBES or Backscatter datasets at the recorded location. There do appear to be mobile seabed sediments at this location, but they are not considered sufficiently thick to completely cover a substantial shipwreck. As such, it is likely that the HER recorded position is erroneous and the actual wreck is located elsewhere close by, probably beyond the geophysical data coverage.	Historic record	-	L15	English Inshore Waters	HER 25537
70091	Recorded obstruction	604434	6116829	A3	-	-	-	The location of an unidentified seabed obstruction reported by fisherman and recorded in the NRHE database. Recorded as potentially indicative of wreckage or a submerged feature. No anomalous features were identified in the current MBES or Backscatter datasets at this location, suggesting the feature is either buried or located elsewhere.	Historic record	-	L15	English Inshore Waters	NRHE 1003622
70102	Recorded obstruction	597688	6113089	A3	-	-	-	The recorded position of a seabed obstruction (NHRE 1003614; HER 30302), reported by fishermen in 1976. Possibly indicative of wreckage or a submerged feature. This record was not covered by the Backscatter or MBES datasets and so no comment can be made on whether a feature is present at this location. Retained in this gazetteer as a precaution.	Historic record	-	L16 Buffer	English Inshore Waters	NHRE 1003614; HER 30302
70103	Recorded obstruction	596460	6112759	A3	-	-	-	The recorded position of a seabed obstruction (UKHO 4557; CANMORE 323019) which reports an obstruction consisting of pipes, tubes and diffusers marking the end of a completed outfall pipe, at a recorded depth of -12.2 m. This record was not directly covered by the Backscatter or MBES datasets, and so no comment can be made on whether a feature is present at this location. Retained in this gazetteer as a precaution for positional purposes.	Historic record	-	L16 Buffer	English Inshore Waters	UKHO 4557; CANMORE 323019
70104	Recorded obstruction	596024	6113361	A3	-	-	-	The reported location of previously identified debris (NHRE 1618665; HER 30299), comprising a rectangular timber with a metal strip attached with nails. Discovered in 2017 during a nearshore dive inspection whilst carrying out an investigating for potential unexploded ordnance on the North Sea Link Interconnector. It was found approximately 1.7 nautical miles south-east of Newbigging Bay. It measures 1.20 x 0.30 x 0.25 m and remains on the seabed. The discovery was reported via ORPAD. No anomalous features were identified in the Backscatter or MBES data at this location and may have since been buried in the surrounding seabed sediments.	Historic record	-	L16	English Inshore Waters	NHRE 1618665; HER 30299

1. Co-ordinates are in WGS84 UTM30N
2. Positional accuracy estimated  $\pm 2$  m



## Appendix 2: Intertidal heritage assets

### *Marine Scheme in English waters*

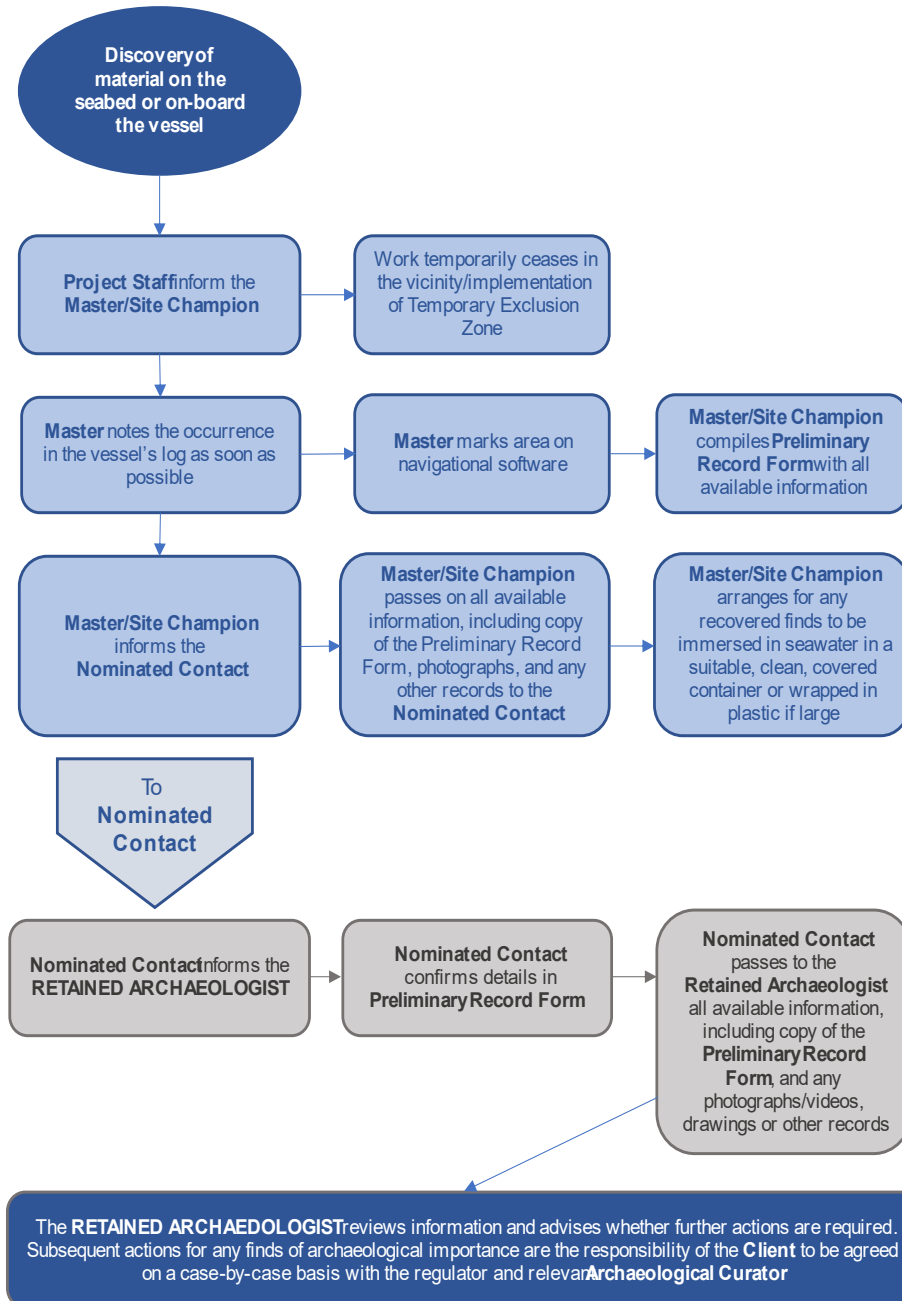
<b>WA ID</b>	<b>HER ID</b>	<b>NRHE ID</b>	<b>Date</b>	<b>Description</b>	<b>Eastings</b>	<b>Northings</b>
1003	19855	1421588	Second World War	Trench constructed during World War II in the sand dunes between 1940-1941 and was demolished before 1998. Was a part of the Northumberland coast line defence.	430580	584290



### Appendix 3: Protocol for Archaeological Discoveries

Actions on the vessel - anomalies on the seabed or finds recovered from the seabed- **(Vessel chain of command to be confirmed)**

#### Protocol for Archaeological Discoveries: actions for discoveries on the seabed or on-board a vessel





## Appendix 4: PAD Preliminary Recording Form

<b>Discoveries: Preliminary Record Form</b>	
<b>When and Where?</b>	
Where Found: Wharf <input type="checkbox"/> Vessel <input type="checkbox"/> Seabed (e.g. anomaly) <input type="checkbox"/>	
Name of Finder:	Date Found:
Seabed Development Area: Track plot of vessel provided? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Position (if possible): Datum: Accuracy: <input type="checkbox"/> GPS Fix <input type="checkbox"/> Approximate <input type="checkbox"/> Centre point <input type="checkbox"/> Estimated from Sources	
<b>What is it?</b>	
Description of the find(s):          	
<b>What Next?</b>	
Photographs taken <input type="checkbox"/> Treatment Given: Kept Wet <input type="checkbox"/> Kept Dry <input type="checkbox"/> Current Location: <input type="checkbox"/> Wharf: _____ <input type="checkbox"/> Other: _____ <input type="checkbox"/> Vessel: _____ <input type="checkbox"/> Seabed (for anomalies encountered)	
Any other notes:    	
<b>Form Complete</b>	
Name of compiler: <input type="checkbox"/> Site Champion <input type="checkbox"/> Vessel Master <input type="checkbox"/> Other _____	
Signed:	Date:





## **Appendix 5: PAD Guidelines for Identifying Finds of Archaeological Interest**

This text is based on the categories outlined in the Protocol for Reporting Finds of Archaeological Interest, published by the British Marine Aggregate Producer's Association (BMAPA) and English Heritage (now Historic England), 2005. The variety in significance across each type of find means that the day-to-day assessment of individual receptors as Major, Intermediate or Minor finds will be completed by an appropriately qualified archaeologist, either working directly on site with each receptor or remotely using images, dimensions and video stills.

### **Bone**

#### *Major Archaeological Finds*

Human bone is definitely of archaeological interest and is also subject to special legal requirements under the Burial Act 1857. Any suspected human bone should be reported and treated with discretion and respect.

Large quantities of animal bone may indicate a wreck (the remains of cargo or provisions) and should be reported.

Objects made out of bone – such as combs, harpoon points or decorative items – can be very old and are definitely of archaeological interest. All occurrences should be reported and recovered if feasible.

#### *Intermediate Archaeological Finds*

Individual fragments or small quantity/low densities of animal bone, teeth and tusks are of archaeological interest because they may date to periods when the seabed formed dry land, and should be reported. Such bones, teeth, tusks etc. may have signs of damage, breaking or cutting that can be directly attributed to human activity. Should any such anthropomorphic damage, breaking or cutting be identified then the find will be considered a Major Archaeological Find.

### **Pottery**

#### *Intermediate Archaeological Finds*

Any fragment of pottery is potentially of interest, especially if it is a large fragment. Individual fragments or small quantity/low densities of pottery are considered an Intermediate Archaeological Find and likely to date prior to 1750. Items with unusual shape, glaze or fabric should be reported. It is noted that there is the potential for residue analysis on ceramic sherds and vessels recovered from marine environments, and this should be considered where these are recovered (Historic England 2017).

As the area may have been used as a landing place for ships during the Roman period, there is also the potential for trade and exchange to be visible within the ceramic assemblage.

#### *Minor Archaeological Finds*

Items which look like modern crockery would be considered to be a minor archaeological find, until further assessment.



## **Brick**

### *Intermediate Archaeological Finds*

Bricks that do not have v-shaped hollows ('frogs') and/or are small, thin, or generally appear different than modern bricks could date back to the medieval or Roman period and should be reported.

### *Minor Archaeological Finds*

Bricks with modern proportions and 'frogs' are of little to no archaeological interest.

## **Wood**

### *Major Archaeological Finds*

If the material discovered on the seabed, or recovered to the surface, appears to represent material from a wreck site, it must be reported.

Pieces of wood that have been shaped or jointed may be of archaeological interest, especially if fixed with wooden pegs, bolts or nails. All occurrences should be reported. Objects made out of dark, waterlogged wood, such as bowls, handles, shafts and so on – can be very old and are definitely of archaeological interest. All occurrences should be reported.

### *Intermediate Archaeological Finds*

Roundwood that has clearly been shaped or made into a point should be reported.

### *Minor Archaeological Find*

Light coloured wood, or wood that floats easily, is probably modern and is unlikely to be of archaeological interest. 'Roundwood' with bark, such as branches – is unlikely to be of archaeological interest.

## **Peat and Clay**

### *Major Archaeological Find*

Peat is black or brown fibrous soil that formed when sea-level was so low that the seabed formed marshy land, on the banks of a river or estuary, for example. The peat is made up of plant remains, and also contains microscopic remains that can provide information about the environment at the time it was formed. This information helps us to understand the kind of landscape that our predecessors inhabited, and about how their landscape changed. It can also provide information about rising sea-level and coastline change, which are important to understanding processes that are affecting us today. Prehistoric structures (such as wooden trackways) and artefacts such as stone tools, including hand axes, are often found within or near peat, because our predecessors used the many resources that these marshy areas contained. As these areas were waterlogged and have continued to be waterlogged because the sea has risen, organic artefacts made of wood, leather, textile and so on often survive together with the stone and pottery which are found on 'dry' sites. Should evidence for trackways associated with peat be uncovered, this would constitute a Major Find and further investigations would be necessary.



Fine-grained sediments such as silts and clays are often found in the same places as peat. These fine-grained sediments also contain the microscopic remains that can provide information about past environments and sea-level change.

#### *Intermediate Archaeological Finds*

Isolated discoveries of peat or clay.

### **Stone**

#### *Major Archaeological Finds*

The recovery of numerous stones may indicate the ballast mound of a wreck or a navigational cairn, and all occurrences should be reported. Additionally, if a large concentration of stone material (as described below) is encountered, it would also be considered a major archaeological find.

#### *Intermediate Archaeological Finds*

Small to medium size stones that are shaped, polished and/or pierced may be prehistoric axes. Objects such as axe heads or knife blades made from flint are also of prehistoric date. Large blocks of stone that have been pierced or shaped may have been used as anchors or weights for fishing nets. All occurrences should be reported.

### **Rubber, Plastic, etc.**

#### *Major Archaeological Finds*

If rubber and plastic materials are discovered in the same area as aluminium objects and structures, they could indicate wreckage from a World War II aircraft, and therefore this material should be reported.

#### *Minor Archaeological Finds*

Except for the above, in most cases, rubber, plastic, Bakelite and similar modern materials are of little to no archaeological interest.

### **Iron and Steel**

The potential range and date of iron and steel objects is so wide that it is difficult to provide general guidance. However, the following provides an outline of what might constitute a major or intermediate find.

#### *Major Archaeological Finds*

If the material discovered on the seabed or recovered to the surface appears to represent material from a wreck site.

If an area contains numerous 'concretions' (iron and steel objects covered by a thick amorphous concrete-like coating), it could represent a wreck site, and should be treated as a major archaeological find.

A concentration of pieces of metal sheet and structure may also represent a wreck site and should be treated as a major archaeological find.



### *Intermediate Archaeological Finds*

The discovery of an isolated anchor would be considered to be an intermediate archaeological find, however, if it is discussed in association with timber or iron and steel material as discussed above, it could be part of a wreck site.

Isolated concretions, pieces of sheet metal and/or structure may also be of archaeological interest, and should be reported.

### *Minor Archaeological Finds*

Isolated modern material, such as lost fishing gear, would be considered a minor archaeological find.

## **Other Metals**

### *Major Archaeological Finds*

Aluminium objects may indicate aircraft wreckage from World War II, especially if two or more pieces of aluminium are fixed together by rivets. All occurrences should be reported.

Concentrations of copper and copper alloy (bronze, brass) objects, precious metal objects and coins are of interest, as they could indicate a wreck site.

### *Minor Archaeological Finds*

Items made of thin, tinned or painted metal sheet are unlikely to be of archaeological interest.

Isolated discoveries.

## **Ordnance**

Any ordnance that is discovered should be dealt with based on the company UXO policy, as safety takes priority over archaeological objectives. However, discoveries of ordnance may be of archaeological interest (including cannonballs, bullets and shells), and they should be reported.



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