



# **Spiorad na Mara Offshore Wind Farm Offshore Project Environmental Impact Assessment Report Appendix 15.1: Marine Archaeology Desk Based Assessment, Volume 2c**

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# 1 INTRODUCTION

## 1.1 OVERVIEW

1.1.1.1 This appendix of the Environmental Impact Assessment Report (EIAR) presents the marine archaeological desk-based assessment for the proposed Spiorad na Mara Offshore Windfarm (hereafter referred to as 'the Offshore Project') with respect to marine cultural heritage. This appendix is supplemented by **Annex 15.1.1: Historic Environment Gazetteer, Volume 2c**, **Annex 15.1.2: Archaeological Assessment of Geophysical and Hydrographic Data, Volume 2c** and **Annex 15.1.3: Stage 1 Geoarchaeological Review of Geotechnical Data, Volume 2c**. This appendix accompanies **Chapter 15: Marine Archaeology, Volume 2a** of the EIAR.

1.1.1.2 This appendix should be read in conjunction with the project description provided in **Chapter 3: Project Description, Volume 1a** and the relevant parts of the following chapters and appendices:

- **Chapter 15, Volume 2a;**
- **Annex 15.1.1, Volume 2c;**
- **Annex 15.1.2, Volume 2c;**
- **Annex 15.1.3, Volume 2c;**
- **Appendix 15.2: Offshore Cultural Heritage Settings Assessment, Volume 2c.**

### 1.1.2 PROJECT BACKGROUND

1.1.2.1 Spiorad na Mara Limited (hereafter referred to as 'the Applicant') is proposing to develop the Project. The Project is an offshore wind farm (OWF) that will consist of up to 60 fixed-bottom wind turbine generators (WTGs).

1.1.2.2 The Project will include both offshore and onshore infrastructure. This Offshore EIAR supports the application for the offshore components of the Project as outlined in **Chapter 1: Introduction, Volume 1a**. The offshore components of the Project (the Offshore Project) includes all infrastructure and activities located seaward of Mean High Water Springs (MHWS) within the Array Area and Offshore Cable Area of Search (OCAS) (**Figure 1.2: Offshore Project Location, Volume 1c**). Further detailed information is provided in **Chapter 3, Volume 1a**.

1.1.2.3 The Offshore Project is situated off the northwest coast of Isle of Lewis/*Eilean Leòdhais* and the Array Area is located approximately 5-13 km offshore and is approximately 161 km<sup>2</sup> in size. It will comprise WTGs, foundations, Offshore Cables, Offshore Substation Platform (OSP) (if required), and Landfall. The Array Area combined with the OCAS is defined as the Offshore Project Boundary. The water depths across the Array Area range from 37 m-67 m with the southwest corner of the Array Area reaching 72 m. The proposed WTGs and fixed foundations will be located within a Turbine Area of approximately 140 km<sup>2</sup>, within the Array Area.

## 1.2 PURPOSE OF THE APPENDIX

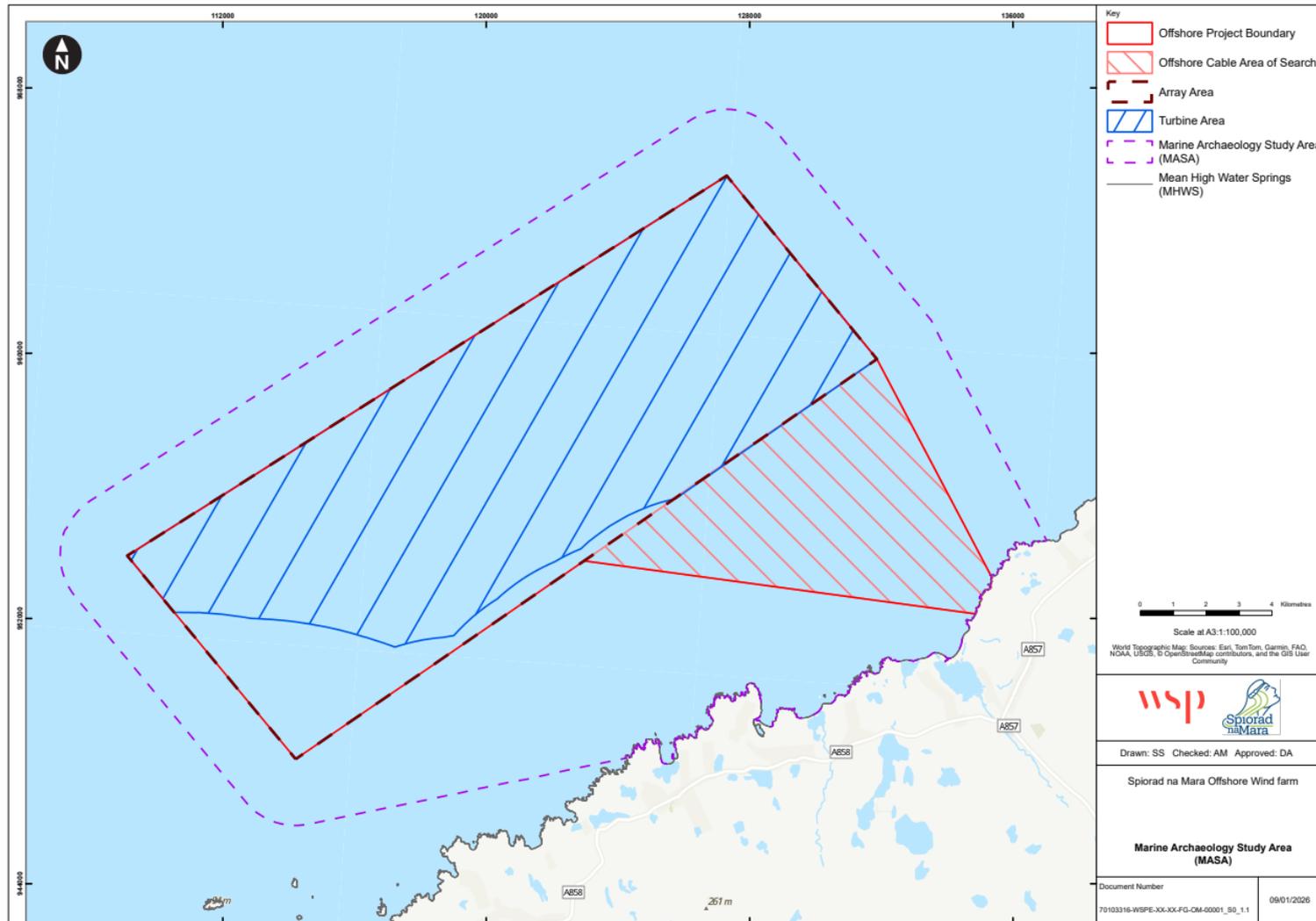
1.2.1.1 This appendix provides a marine archaeology assessment of all available and relevant data sources, to establish known or possible marine archaeological heritage in the Marine Archaeology Study Area (MASA), which is comprised of a 2 km buffer from the Offshore Project Boundary extending up to the Mean High Water Springs (MHWS) boundary (see **Plate 1-1**). These assets have been identified from a broad range of standard sources and are considered to have a degree of heritage value meriting consideration in planning decisions.

1.2.1.2 The specific aims of this assessment are to:

- Establish the known and potential marine cultural heritage and archaeology assets within the Offshore Project Boundary and MASA to define the historic baseline and support heritage significance assessment;
- Assess the significance of known and potential marine cultural heritage assets through weighted consideration of their valued components;
- Assess the historic seascape characterisation of the Offshore Project to inform the archaeological potential.

1.2.1.3 A search of the National Record of the Historic Environment (NRHE) and Historic Environment Scotland (HES) confirmed that no designated marine archaeological assets lie within the MASA. **Plate 1-1** therefore illustrates only non-designated features identified within the study area.

Plate 1-1 Marine Archaeology Study Area (MASA)





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## 1.3 LEGISLATIVE AND POLICY CONTEXT

### 1.3.1 LEGISLATION

1.3.1.1 The following legislation applies to marine archaeology and cultural heritage within both the UK Territorial Sea and the UK Exclusive Economic Zone:

- Ancient Monuments and Archaeological Areas Act 1979 (as amended);
- Protection of Military Remains Act 1986;
- Merchant Shipping Act 1995;
- Marine (Scotland) Act 2010;
- Protection of Wrecks Acts 1973;
- Treasure Trove Law (as revised Jan 2016; applicable on land to the mean low water springs boundary).

1.3.1.2 The above legislation provides protection for wrecks of high historical, archaeological or artistic value, as well as allowing military wrecks and aircraft remains to be protected. There are currently no known protected wrecks within the MASA (see Section 2.1). If encountered, all military aircraft crash sites must be protected under the Protection of Military Remains Act 1986. Ownership of any wreck remains will be determined in accordance with the Merchant Shipping Act 1995.

### 1.3.2 POLICY

1.3.2.1 The following UK and Scottish marine and heritage policies are relevant to the Offshore Project and offer clear guidance for identifying and protecting marine cultural heritage in offshore developments:

- UK Marine Policy Statement (MPS) (2011);
- Scotland National Marine Plan (NMP) (2015);
- Sectoral Marine Plan - Offshore Wind Energy (2020);
- National Planning Framework (NPF) 4;
- Historic Environment Policy for Scotland (Historic Environment Scotland, 2019);
- Scotland's National Marine Plan: A Single Framework for Managing Our Seas (March 2015);
- Our Past, Our Future: The Strategy for Scotland's Historic Environment (Historic Environment Scotland 2023);
- The Historic Environment Strategy for Scotland (Historic Environment Scotland 2022).

## 2 METHODOLOGY

### 2.1 STUDY AREA

2.1.1.1 The MASA comprises a 2 km buffer around the Offshore Project Boundary up to the MHWS boundary (**Plate 1-1**). This has been defined using professional judgment and communicated to and agreed with the stakeholders during the scoping process, in order to ensure a comprehensive search of all the relevant datasets and archive material associated with the Offshore Project Boundary.

### 2.2 DATA SOURCES

2.2.1.1 Information on marine cultural heritage and archaeology within the MASA was collected through a detailed desktop review of a number of data sources. These sources are summarised in **Table 2-1**.

Table 2-1 Data Sources Consulted

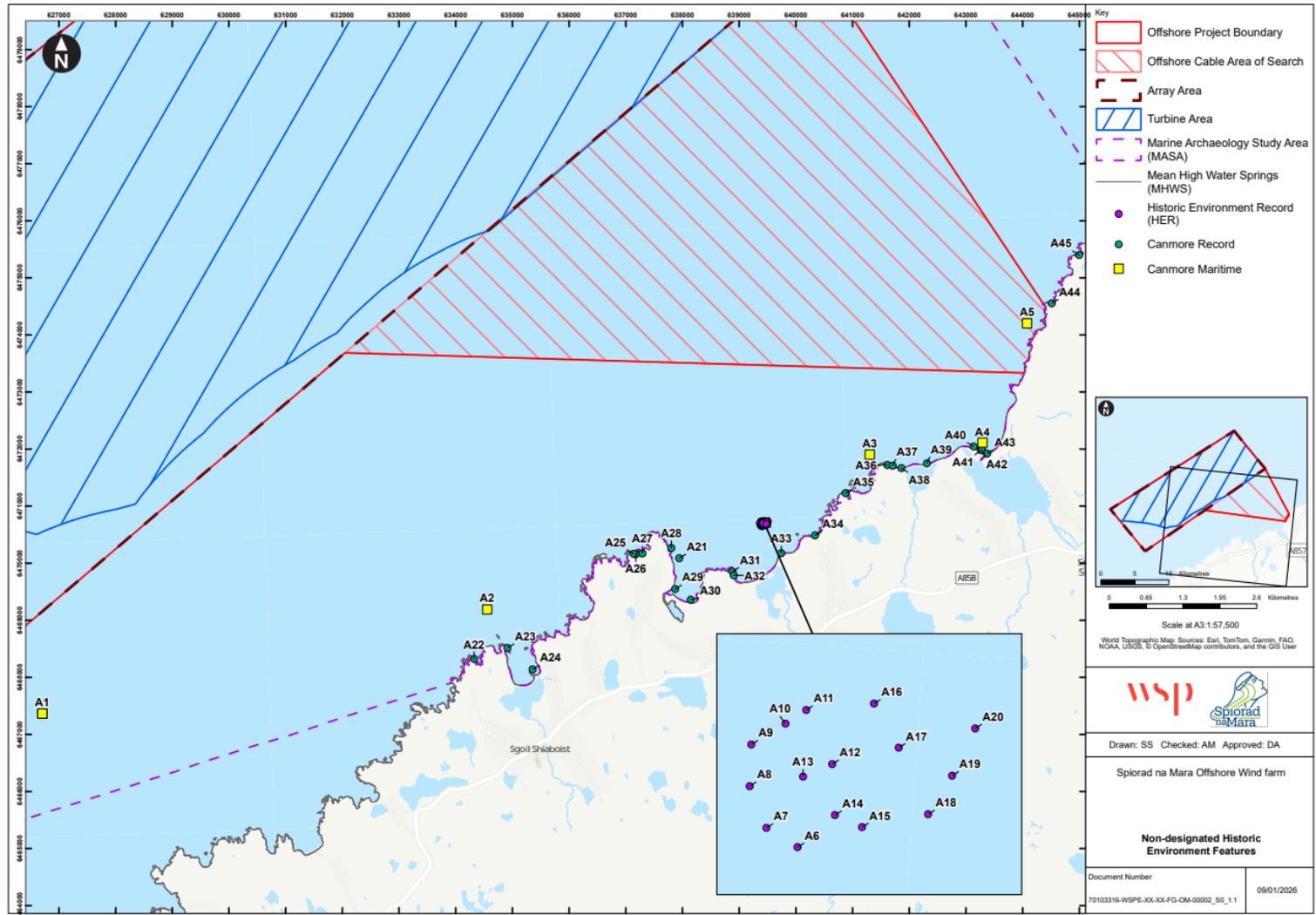
Title	Source	Year	Author
Records of known wrecks and obstructions (ships and aviation) within territorial and international waters	United Kingdom Hydrographic Office (UKHO)	2025	UKHO
Canmore (NRHE)	HES	2025	HES
Historic Environment Record (HER)	Western Isles Archaeology Service	2024	Western Isles Archaeology Service
Archaeological assessment report of marine geophysical survey data ( <b>Annex 15.1.2, Volume 2c</b> )	MSDS	2024 and 2025	MSDS
Geotechnical survey borehole logs	The Applicant	2024	
Stage 1 Geoarchaeological assessment of geotechnical borehole logs ( <b>Annex 15.1.3, Volume 2c</b> )	WSP	2024	WSP
GeoIndex (Offshore) Map Viewer	British Geological Survey (BGS)	2025	BGS
National Heritage List	HES	2025	HES
Web-published local history; Archaeological Data Service; National Library of Scotland historic maps database	Web-based resources (see Section 6)	Various	Various
Archaeological research frameworks	Scottish Archaeological Research Framework (ScARF)	2025	ScARF

Title	Source	Year	Author
Existing archaeological studies, reports, and published sources	Various (see Section 66)	Various	Various

2.2.1.2 A site visit was undertaken in 2024 to assess the onshore project area and the impact to onshore archaeology and cultural heritage assets resulting from changes in their setting. The coast and intertidal areas of the site were also observed during the visits to assess their potential for archaeological remains. Nothing of note within the coast and intertidal area was identified. The photographs from the site visits to the onshore designated assets are presented in **Appendix 15.2, Volume 2c**.

2.2.1.3 **Plate 2-1** shows the location of known historic environment features within the MASA, as identified by the sources above, the site visit, or during the course of research for this assessment. These have been allocated a unique 'assessment' reference number (A1, A2, etc.), which are listed in a gazetteer in **Annex 15.1.1, Volume 2c** and are referred to in this appendix. All distances quoted from the MASA in this appendix are approximate. Geophysical data positioning accuracy is expected to be between 0.5 and 2 m (see **Annex 15.1.3, Volume 2c**).

Plate 2-1 Non-designated Historic Environment Features





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## 2.3 ARCHAEOLOGICAL DESK-BASED ASSESSMENT METHODOLOGY

2.3.1.1 The desk-based assessment methodology follows best practice professional guidance outlined by the Chartered Institute for Archaeologists' (CIfA) Standard and Guidance for Historic Environment Desk-Based Assessment (2014, updated 2020).

## 2.4 ASSESSING THE LIKELIHOOD OF ARCHAEOLOGICAL REMAINS

2.4.1.1 Section 4 presents an assessment of the likelihood for archaeological remains for each chronological period, based on the archaeological and historical background of the area, its geology, topography, and hydrology, the probability for evidence of past activity, and considering past disturbance which may have affected survival. Section 4 also includes professional opinion on likely marine heritage value.

## 2.5 MARINE GEOPHYSICAL SURVEY METHODOLOGY

2.5.1.1 MSDS Marine Limited (MSDS Marine) undertook an archaeological assessment of the geophysical and hydrographic survey data acquired by Ondine Limited (Ondine), on behalf of Aratellus Subsea Solutions PTE Limited (Aratellus) in 2023. The instruments consisted of Sidescan Sonar (SSS), Multibeam Bathymetry (MBES), Magnetometer, Parametric Sub-bottom Profiler (SBP), and Ultra High Resolution Seismics (UHRS).

2.5.1.2 The methodology, data sources and technical specifications employed for the archaeological assessment of the geophysical and hydrographic survey datasets are detailed in **Annex 15.1.2, Volume 2c**.

### 2.5.2 GEOPHYSICAL DATA – DATA LIMITATIONS

2.5.2.1 Almost full data survey coverage was achieved across the OCAS, however there are areas where data collection was not possible along the nearshore extents along the coastline. This was due to the shallow water depths and underwater hazards preventing the survey vessel from operating safely in this area. This area equates to approximately 2% of the OCAS (for further information, see **Annex 15.1.2, Volume 2c**). As a result, the area not surveyed was not archaeologically evaluated.

2.5.2.2 A LiDAR survey was undertaken in October 2025 to address this nearshore data gap. The processed dataset has not yet been archaeologically assessed and is therefore not included within this Desk-Based Assessment. Once assessment is completed, the LiDAR outputs will be archaeologically assessed and a report will be issued. Following discussion with the regulators, any identified anomalies will be considered for Archaeological Exclusion Zone classification in any post-consent update to the WSI.

### 2.5.3 GEOPHYSICAL DATA – DATA QUALITY

- 2.5.3.1 The quality of SSS data was generally considered to be good. The high frequency OCAS data presented a drop in data quality at the outer extents of the range on both the port and starboard side, which was potentially due to the limitations of the instrument. This was mitigated by the line spacing that allowed a 100% coverage of the unaffected data. Striations which distorted some features were noted in the Array Area dataset and were likely due to snagging of the SSS cable caused by vessel movement; however, the data was still considered to be suitable for archaeological assessment. Small horizontal offsets noted in places between the SSS and MBES data were minor and within normal tolerances. Any obstructions from seabed features were mitigated by collecting MBES data from above the seabed, thereby ensonifying obscured areas in the SSS data.
- 2.5.3.2 The quality of the un-gridded MBES data was considered to be reasonable, with good density and the data was able to be gridded to 0.5 m, thus increasing the ability to detect smaller features. Small data gaps were visible in the data within the Array Area. The impacts of uncalibrated motion were visible along the outer edges of individual lines as well as height differences between individual lines; however, the data was still considered to be suitable for archaeological assessment. The anomalies detected from the MBES data corresponded to the anomalies identified in the SSS data.

## 3 HISTORIC ENVIRONMENT BASELINE

### 3.1 SITE LOCATION

3.1.1.1 The Site is located in the north Atlantic between 5-13 km off the west coast of the Isle of Lewis/*Eilean Leòdhais* (UTM29N: -6.768, 58.415) (**Plate 1-1**).

### 3.2 GEOLOGY AND PALAEOLANDSCAPES

#### 3.2.1 GEOLOGY

3.2.1.1 The underlying bedrock within the Offshore Project Boundary is comprised of the Lewisian Gneiss predominantly in the southeast and covering most of the proposed OCAS, and ironstained flowbanded basalt to the northwest covering most of the Array Area (BGS 2025). The results of the geotechnical investigation and sub-bottom profiler assessment within the Offshore Project Boundary show that gravels with a high density of boulders overlie the bedrock across much of the Array Area with sands in patches within the southwest and northeast of the Array Area. The OCAS is largely characterised by outcropping bedrock with distinct gullies extending from the shore with some sands and gravels.

3.2.1.2 8 boreholes were taken as part of the Project's geotechnical investigations; 4 lie within the Array Area, 2 within the MASA and 2 lie within the OCAS. The borehole logs record glaciofluvial moraine sediment overlying the bedrock comprised of basalt, gneiss or sandstone. The sediment would have accumulated during glacial activity and been deposited through glacial retreat. None of the boreholes contained organic material. There are no boreholes taken within the near shore, the closest borehole to the Lewis coast line is approximately 1.5-2 km offshore.

3.2.1.3 For a full discussion of the geotechnical results and the palaeolandscapes assessment results see **Annex 15.1.2, Volume 2c** and **Annex 15.1.3, Volume 2c**.

#### 3.2.2 PALAEOLANDSCAPES

3.2.2.1 This section summarises the baseline for submerged prehistoric landscapes within the Offshore Project Boundary and MASA during the glacial and post-glacial cycles within the Quaternary geological period which spans the last 2.6 million years and encompasses the Pleistocene and Holocene geological epochs. Full assessment of the palaeolandscapes identified within the Offshore Project Boundary is presented in **Annex 15.1.2, Volume 2c**.

##### **Pleistocene (2,400,000 to 9,700 BCE)**

3.2.2.2 The Quaternary period is dominated by alternating glacial and interglacial cycles that have affected northwest Scotland/*Alba* (Ballantyne 2009). During these glacial periods, the ice sheets covered

across the Outer Hebrides/*Na h-Eileanan Sìa* and extended into the modern marine environment which can be seen in the survival of evidence of moraines, glacial debris/till deposits, in the west of the Array Area. Substantial variation in sea level corresponded to the glacial-interglacial epochs reaching a maximum amplitude of 120 m, with sea level at or above present level, during the short warm stages (Bailey and Flemming 2008).

- 3.2.2.3 Evidence shows that the Anglian (c. 476-422,000 BCE) glaciation was the most expansive and severe glacial cycle in the Outer Hebrides/*Na h-Eileanan Sìa* (Lee *et al.* 2011). The expansion of the ice sheet across the Lewisian landscape resulted in kilometre-thick ice heavily scouring the landscape, eroding much of the land surfaces and depositing sediment, in addition to creating new geomorphological features such as fjords, glacial troughs, drumlins, moraines, rock basins and till deposits (Peacock 1984; Ballantyne 2009). The glacial erosion would have exposed the ancient Lewisian gneisses that underlie most of the Outer Hebrides/*Na h-Eileanan Sìa* and influence the geological characteristics of both terrestrial and submerged landscapes (Peacock 1984). The presence of the ice sheet and associated harsh climatic events during the glacial periods would have made any exposed land within the Isle of Lewis/*Eilean Leòdhais* inhospitable for Palaeolithic peoples. The sea levels were lower during the interglacial period that followed the Anglian potentially exposing areas of the now-drowned Lewisian landmass for habitation but there has been no evidence of Palaeolithic activity found within the region.
- 3.2.2.4 The Wolstonian (c. 372,000-121,000 BCE) glaciation occurred with ice sheets once again covering much of the Isle of Lewis/*Eilean Leòdhais*. The scouring caused by the Wolstonian glaciation eroded terrain features and deposited sediments including glacial tills (Lee *et al.* 2011). This activity would have removed or obscured remains from earlier glacial and interglacial activity.
- 3.2.2.5 The Last Glacial Maximum (LGM) occurred from c. 21-17,000 BCE during the Devensian glaciation cycle (c. 107,000- 9,500 BCE) coincides with the Upper Palaeolithic period of human history. The ice sheet reached its maximum extent during this time advancing across the Outer Hebrides/*Na h-Eileanan Sìa* and much of the British mainland and Ireland. Similar to earlier glaciations, the ice sheet significantly transformed the Lewisian topography, eroding and shaping the landform through various glaciation processes and other depositional features. The Isle of Lewis/*Eilean Leòdhais* was largely uninhabitable as it was under ice but shell deposits dating to the Late Devensian identified in the north of Isle of Lewis/*Eilean Leòdhais* suggest that part of the island was ice-free (Bradwell *et al.* 2019). This area would have been subject to harsh climatic conditions and is unlikely to have been utilised for settlement or sustained activity.
- 3.2.2.6 The sub-bottom profiler data shows evidence of 2 narrow, deep basins of up to 110 m in depth and moraines within the Offshore Project Boundary. The Annie Formation has been identified within the basins and better understanding of these deposits would aid understanding of the development of the palaeolandscape and the timing of inundation events.

### Holocene (9,700 BCE to present)

3.2.2.7 The sudden and dramatic cooling in the Loch Lomond Stadial or the Younger Dryas (12,900-11,700 BCE) in the Late Devensian (27,000-9,700 BCE) led to a re-advance of the glaciers and a colder, drier climate. This temporarily slowed sea level rise and delayed human settlement until the improved climatic conditions of the Holocene (commencing c. 9,700 BCE), which is characterised by warming climate and regression of the ice sheets resulting in rapid sea-level rise until c. 5,000 BCE. The melting of major ice sheets globally, particularly the Laurentide Ice Sheet in North America and the Fennoscandian Ice Sheet in Europe caused rapid sea level rise (Bell *et al.* 2024), but this was moderated by regional isostatic adjustments (Bell *et al.* 2024). The rising sea levels in this period inundated the continental shelf encircling the British Isles, which would have included any surviving exposed areas of the MASA. The nearshore was not able to be surveyed so the potential for deposits containing palaeoenvironmental remains within that area is not well understood; however, intertidal peats have been extensively identified along the Outer Hebrides/*Na h-Eileanan Sià* coastline and the possibility of their presence cannot be discounted.

## 3.3 OVERVIEW OF PAST ARCHAEOLOGICAL INVESTIGATIONS

3.3.1.1 The MASA has not been subjected to a focused, systematic programme of archaeological investigation previously. As such, the baseline information provided here relies on available data and broad interpretations drawn from previous investigations around the Western Isles more generally, including examples of known sites identified in the intertidal area and on land outside the MASA. While the MASA has formed part of a broader area of focus for the Outer Hebrides/*Na h-Eileanan Sià* and Scottish Atlantic fringe for the Outer Hebrides Coastal Community Marine Archaeology Pilot Project (OHCCMAP; WA Coastal and Marine 2012, 2013) and Scottish Atlantic Maritime Past: Heritage, Investigation, Research & Education (SAMPHIRE; McCarthy and Benjamin 2013, McCarthy, Roberts and Benjamin 2014 and 2015), none of the specific surveys carried out by either project reached the MASA.

## 3.4 OVERVIEW OF THE ARCHAEOLOGICAL ASSESSMENT OF THE GEOPHYSICAL SURVEY RESULTS

3.4.1.1 A total of 25 seabed features of archaeological potential were identified in the archaeological assessment of geophysical survey data, of which 9 are within the Array Area and 6 within the OCAS. The remaining 7 anomalies are located within the Offshore Project Boundary and 3 are located outside the Offshore Project Boundary but within the data extents. Of the 22 seabed features identified in the Offshore Project Boundary, 5 are located within the Array Area (AA) and the OCAS of the Offshore Project Boundary and are considered to be of possible anthropogenic origin (MSDS reference numbers SP24\_002, SP24\_009, SP24\_020, SP24\_021, and SP24\_026).

- 3.4.1.2 Anomalies SP24\_002, SP24\_009, and SP24\_021 were interpreted as potential debris with low potential to be comprised of remains of archaeological importance. MSDS considered that these are likely to consist of discarded modern debris, such as rope, cable, chain, or fishing gear, or small, isolated anomalies with no wider context.
- 3.4.1.3 Anomaly SP24\_020 was interpreted as potential debris with medium potential to be comprised of remains of archaeological importance. The anomaly is characterised by 3 prominent and irregular features that are noticeably larger in scale than the surrounding bedrock. It is not certain if the anomaly contains ferrous material as the igneous bedrock masks smaller magnetic anomalies within this area of the Offshore Project Boundary. Without further information, it is not possible to determine the nature or archaeological importance of the remains in the anomaly.
- 3.4.1.4 Anomaly SP24\_026 was interpreted as a mound with medium potential to be comprised of remains of archaeological importance. The anomaly is characterised as a large, prominent, feature that is larger and more irregular than the surrounding outcrops of bedrock. It is not certain if the anomaly contains ferrous material as the igneous bedrock masks smaller magnetic anomalies within this area of the Offshore Project Boundary. Without further information, it is not possible to determine the nature or archaeological importance of the remains in the anomaly.

## 3.5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

- 3.5.1.1 The terms 'archaeology' and 'cultural heritage' are, in general, perceived as interchangeable. Strictly though, 'archaeology' refers to the process of obtaining information from the material culture of past societies. For the purposes of this document, 'archaeology' refers to cultural heritage that has the potential to provide information about the past through scientific and academic research, whereas 'cultural heritage' refers more broadly to all aspects of the material and the intangible culture of past societies. The term 'marine archaeology' refers to the scientific study of the material remains of man and his activities on the sea (Muckleroy, 1978) and 'marine cultural heritage' encompasses tangible remains such as submerged and coastal settlements, maritime infrastructure such as ports, harbours, and shipwrecks as well as integral intangible elements such as artistic and linguistic expressions, traditional and historical knowledge, cultural practices and local skills (Henderson, 2019).
- 3.5.1.2 Marine archaeology in this report comprises:
- Submerged prehistoric landscapes which are former areas of dry land that have been inundated due to sea-level rise since the end of the LGM (c. 26,500 and 19,000-20,000 years ago). These landscapes hold the potential to contain evidence related to prehistoric human activity, palaeochannels and/or environmental change;
  - Archaeological remains of watercraft (shipwrecks and associated features), aviation sites (aircraft crash sites and associated debris) and structural remains other than watercraft (maritime infrastructure, defensive structures, etc).

3.5.1.3 The desk-based assessment has identified 45 non-designated assets within the MASA and 1 non-designated asset within the OCAS (**Plate 2-1**). The single non-designated asset within the Offshore Project Boundary is a wreck record for the Maju (A5), a mid-19th century iron ship, that wrecked in 1874 while carrying a cargo of coal. Records suggest that the wreck was partially broken up during the wrecking process with 6 of the reported 24 crew on board washing up on the coast of the Isle of Lewis/*Eilean Leòdhais*, though all hands were considered lost (Whittaker 1998). The location for the wreck is considered to be tenuous and the records state that the hull of the ship was not recovered but was present a short distance from the shore.

### 3.5.2 PREHISTORIC (800,000 BCE – 400 CE)

- 3.5.2.1 The Lower Palaeolithic (800,000-250,000 BCE) and Middle Palaeolithic (250,000-40,000 BCE) archaeological periods broadly correlate to the Anglian and Wolstonian, while the Upper Palaeolithic (40,000-10,800 BCE) coincides with the LGM that occurred during the Devensian glaciation. These periods witnessed intermittent, likely seasonal, Hominin occupation within southern Britain as the climate oscillated between glacial and interglacial stages but there is no evidence of human occupation or activity in the early periods of the Palaeolithic in Scotland/*Alba* or the Western Isles.
- 3.5.2.2 The archaeology of the Upper Palaeolithic (40,000-10,800 BCE) is characterised by new stone-working techniques, the use of bone and other materials, art and the presence of anatomically modern humans (*Homo sapiens sapiens*) who were nomadic hunter-gatherers. The earliest confirmed evidence of human activity in Scotland/*Alba* are lithic scatters deposited between 12,300-12,000 BCE at Howburn Farm in Biggar/*Bigear* (Canmore ID 216532; outside of the MASA) and in Kilmelfort Cave (Canmore ID 22882; outside of the MASA) in Argyll/*Earra-Ghàidheal*, both approximately 300 km to the southeast of the Offshore Project Boundary and MASA. The distribution of the lithic material at Howburn Farm suggests the presence of 2 temporary tent structures while the size of the assemblage suggests reuse of the site as part of a seasonal hunting camp and suggests that there was activity within Scotland/*Alba* exploiting the natural resources (Ballin 2024). It is considered that Palaeolithic activity is unlikely within the Isle of Lewis/*Eilean Leòdhais* or the Offshore Project Boundary given the harsh climatic conditions and distance from known areas of activity and temporary settlement during this period. There is no known evidence of maritime activity from this period in Scotland/*Alba* and no Palaeolithic remains have been identified within the Offshore Project Boundary and MASA.
- 3.5.2.3 Evidence from archaeological and geotechnical investigations within the Outer Hebrides/*Na h-Eileanan Sià* suggests that the environment on the Isle of Lewis/*Eilean Leòdhais* in the Mesolithic period was comprised of mixed woodland with little evidence of predatory animals due to its early separation from the mainland (Rivett 2021). The island mass was larger on account of lowered sea levels which gradually rose to modern levels during the Mesolithic and early Neolithic; however, the inundation of coastal regions was mitigated locally as a result of isostatic rebound. The

colonisation of islands, including the Isle of Lewis/*Eilean Leòdhais* in the Outer Hebrides/*Na h-Eileanan Sià*, would have required suitable watercraft (Bell *et al.* 2024). Dugout canoes and skin boats were most likely employed for maritime travel. There is no known direct evidence of marine activity within Scotland/*Alba* at this time; however, the majority of the Outer Hebrides/*Na h-Eileanan Sià* and Inner Hebrides/*Na h-Eileanan a-staigh* were impacted by Mesolithic activity and occupation suggesting that the technology existed to facilitate safe travel and exploitation of the marine environment.

- 3.5.2.4 Early evidence of Mesolithic activity in the Isle of Lewis/*Eilean Leòdhais* is limited to lowered pollen levels and increases in charcoal within environmental samples dated to the period (Gregory *et al.*, 2005). The closest known evidence of Mesolithic occupation to the Offshore Project Boundary is a shell midden site at Traigh Na Beirigh on the Uig peninsula (Canmore ID 348338; outside the MASA), 10 km southwest of the Offshore Project Boundary. Fish bones were also found within the midden suggesting exploitation of the marine environment for food at this time. There is no known evidence of Mesolithic activity within the Offshore Project Boundary or MASA. Potential for archaeological remains relating to evidence of Mesolithic resource exploitation activity would likely be limited to the nearshore and intertidal.
- 3.5.2.5 Sea levels were near modern levels by the Neolithic period (4,100 BCE-2,500 BCE) and the coastline had retreated to near its modern position, not accounting for later isostatic rebound which saw coastlines in the Isle of Lewis/*Eilean Leòdhais* rise slowly. This period saw a transition from nomadic hunter-gatherer subsistence to agriculture and permanent settlement. Evidence in the Outer Hebrides/*Na h-Eileanan Sià* suggests that animals, namely cattle, sheep and red deer, were introduced to the islands during this period with barley and wheat for cultivation. The importance of marine resource exploitation can be seen in the material record through this period as fish continued to be an important part of the local diet (MacLeod Rivett, 2021).
- 3.5.2.6 The Early Neolithic period (4,000 BCE-3,300 BCE) is generally defined by new funerary practices utilising long and round barrows and cairns. Investigations of 6 Neolithic crannog sites in inland lochs on the Isle of Lewis/*Eilean Leòdhais* have found evidence that they were constructed c. 3,500 BCE for use in ritual or feasting activities (Calanais, 2025). The crannogs contained Neolithic pottery fragments with some components appeared to have been in use during later periods as indicated by iron rings installed in the crannog walls (Blankshein *et al.* 2024). The Later Neolithic (3,300 BCE-2,500 BCE) saw more complex structures erected in the landscape such as standing stones, henges, and stone circles, with these monuments usually erected in conspicuous locations. The most notable of these within the Isle of Lewis/*Eilean Leòdhais* are the Calanais stones and the ritual landscape they sit within. During this period, material culture also became more elaborate and complex.
- 3.5.2.7 The potential for Neolithic seafaring is suggested by faunal remains from shell middens containing deep-water fish at Neolithic sites (Gardiner and Christensen, 1996). Boats produced through basket-weaving technology similar to later coracles and stretched skin boats like *currachs* have

been used in Scotland/*Alba* since the prehistoric times (Doherty, 2005) for inland travel and were known to have been used in ocean navigation into the post-medieval period in the Irish Sea and the Atlantic.

- 3.5.2.8 There is no evidence of Neolithic activity within the Offshore Project Boundary or MASA. The closest evidence of Neolithic activity to the Offshore Project Boundary is a possible Neolithic to Bronze Age stone alignment and a shell midden deposit (Canmore ID 335347; outside the MASA) that are likely part of a larger settlement, 95 m east of the eastern edge of the MASA near Rubh' a' Bhiogar in Barvas/*Barabhas*. The Offshore Project Boundary would have been utilised at this time for marine resources and for maritime travel and trade. There is evidence of dispersed settlement across the island with no known concentration that could suggest trade centres or dedicated harbours during this period. Watercraft at the time would not have required dedicated deep water harbours given their limited size and breadth. Any remains would likely be found near or on shore and eroding out of the cliffsides.
- 3.5.2.9 The Bronze Age (2,500-800 BCE) is generally characterised by technological innovation and exchange as well as the expansion of trade links. Settlements within the Outer Hebrides/*Na h-Eileanan Sià* shifted from earlier upland sites to coastal sites on the machair as a result of the formation of peats on previously fertile soils due to a combination of woodland clearance and the colder and wetter climatic conditions (Taigh Chearsabhagh Museum and Arts Centre, 2025). The closest known late Neolithic and Bronze Age coastal settlement is located at Dalmore Bay (HES reference SM6292; outside of the MASA) 4.1 km south of the southwest end of the OCAS. The reduction of wood available within the islands may account for a gradual shift in building material preference to stone in the Outer Hebrides/*Na h-Eileanan Sià* during this period. It is not entirely clear how interconnected the Isle of Lewis/*Eilean Leòdhais* was with surrounding islands and the mainland and how the network was organised during the Bronze Age; however, indirect evidence of widespread trade has been found in the types of remains present on the Isle of Lewis/*Eilean Leòdhais*.
- 3.5.2.10 There is no direct evidence of Bronze Age watercraft within the Offshore Project Boundary and MASA or on the Isle of Lewis/*Eilean Leòdhais* and such evidence is rare in the British Isles as a whole. The lack of woodland resources would have made resource intensive forms of technology including logboats rare on the Isle of Lewis/*Eilean Leòdhais* and there was likely to have been more emphasis locally on other forms of watercraft technology. The Offshore Project Boundary would have been utilised at this time for marine resources and for maritime travel and trade. There is no evidence suggesting trade centres or harbours on the Isle of Lewis/*Eilean Leòdhais* and the concentration of settlements along the coasts, including the western coast of the Isle of Lewis/*Eilean Leòdhais* would have made it likely that local trade routes would have utilised any reasonable landing place for this activity. Watercraft at the time would not have required dedicated deep water harbours given their limited size and breadth.

- 3.5.2.11 By the Iron Age (800 BCE-400 CE), maritime vessels were comparatively larger, more robust and better suited for open sea journeys than in earlier periods. Trade routes were more complex with a wider variety of goods such as salt, metal and textiles across coastal and inland regions, reflective of a sophisticated economy and heightened cultural interaction (ScARF, 2025). The Atlantic seaways likely played a crucial role in this network, connecting Scotland/*Alba*, including Lewis/*Eilean Leòdhais*, with other Atlantic societies.
- 3.5.2.12 Indirect evidence of local cultural intermingling can be observed in the proliferation of the building types throughout the Western Isles, the Orkneys/*Arcaibh*, and Shetland/*Sealtainn*, and along the western coast of the Scottish mainland in the early centuries of the Iron Age, particularly the broch and the wheelhouse. The intended purpose of the broch is unclear as, although it has been traditionally assumed by archaeologists and historians to be defensive in nature and to have served dual roles in trade and defence, recent arguments have been made that the broch's use and status in society was more complicated than defence. Its size and stature within the landscape would have been a visual representation of the occupant's prestige and it is thought that they also served as boundary markers and allowed for observation of coastal shipping routes and shallow beaches (MacLeod Rivett, 2021). The wheelhouse is a continuation of the earlier roundhouse building type that utilised radial stone walls as supports, effectively minimising the amount of wood within its roof and construction (MacLeod Rivett, 2021, 88-89). Wheelhouses continued as a building type into the 5<sup>th</sup> Century CE while brochs faded in use in the 3<sup>rd</sup> Century CE. Known settlement areas dating to the Iron Age near the Offshore Project Boundary include 2 settlement mounds overlaid with a later medieval church and graveyard, one at Port Mhór Bragar/*Bhràdhagair* called Teampull Eoin (HES reference SM3926; outside of the MASA) 155 m south of the Offshore Project Boundary and another at Shader/*Siadar an Rubha* called Teampull Pheadair (HES reference SM5341; outside of the MASA), 3.2 km northeast of the northeastern end of the Offshore Project Boundary.
- 3.5.2.13 Although no direct evidence of Iron Age activity has been found within the Offshore Project Boundary and MASA, Iron Age settlements and brochs in nearby areas suggest the potential for evidence of maritime trade and marine resource exploitation. Possible examples of later prehistoric settlement and marine resource exploitation have been found within the MASA but the remains have not been dated or confirmed archaeologically. The remnants of a cairn (A40), noted by the Scottish National Record of the Historic Environment as a potential Atlantic roundhouse, is recorded within the intertidal zone 1.3 km to the southwest from the proposed landfall of the Offshore Project Boundary. The cairn has not been the subject of an archaeological investigation and its identification and date have not been confirmed. A possible midden evidenced by a find of 12 later prehistoric pottery sherds from 5 vessels (A33) in conjunction with shell remains was found at the bottom of a sandy cliff within the intertidal zone 1.7 km south of the Offshore Project Boundary.

3.5.2.14 Broader patterns of Iron Age maritime activity across Scotland/*Alba* and the Atlantic suggest a dynamic technological and cultural exchange, which the Isle of Lewis/*Eilean Leòdhais* would have experienced as part of this network. Any remains would likely be found near or on shore adjacent to or within areas where settlements were located.

### 3.5.3 ROMAN (70–165 CE)

3.5.3.1 The Roman occupation of Scotland/*Alba* was short-lived with activity concentrated in southern Scotland/*Alba*. Initial invasions in circa 80 CE and again in circa 138 CE left a lasting mark on the landscape where the Romans occupied an area. Under the direction of Antoninus Pius, the frontier barrier was advanced across the Forth-Clyde isthmus in 142 CE and the Antonine Wall, a 60 km long fortification stretching from the Forth estuary to the Clyde estuary, was constructed to protect the newly conquered border (Macinnes, 1985). A heavily garrisoned series of Roman fortifications was constructed between 80 CE and 83 CE to guard the crossing point of the River Carron and act as the southern fort of the Roman Gask Ridge between the Highlands and Lowlands. The Romans utilised the marine environment to facilitate troop deployment, supply, and for trade. There is little evidence of extensive Roman settlement in Scotland/*Alba* and their presence appears to have been predominately militaristic in nature. Most of the evidence of Roman activity and occupation is located to the south or east of the Antonine Wall and Gask Ridge fortifications. There is no evidence found to date of Roman activity or occupation in the Isle of Lewis/*Eilean Leòdhais* or within the Offshore Project Boundary, though there is evidence of Roman material culture in Iron Age settlement sites suggesting the possibility of trade between the native population and the Romans.

### 3.5.4 MEDIEVAL (400 – 1560 CE)

3.5.4.1 In the 5<sup>th</sup> Century, the older building practices were abandoned and an architectural style seen more commonly in the areas of Scotland under Pictish control began to proliferate in the Outer Hebrides/*Na h-Eileanan Sià*. The Pictish kingdoms were a group of kingdoms culturally and politically aligned, based in the northeast of Scotland/*Alba* and the Orkneys/*Arcaibh*. The Picts had gradually expanded their control across much of the north of Scotland/*Alba* in the centuries of the late Iron Age and early medieval. Documentary evidence suggests that the Picts possessed strong naval capability and exhibited dominance over sea routes in the north of Scotland/*Alba* (Cessford, 2005). Around 500 CE, the kingdom of Dál Riata was established encompassing territory from Ulster in Northern Ireland to the coastal regions of Argyll/*Earra-Ghàidheal* and the Inner Hebrides (Foster, 2001). The sea played a crucial role in this expansion, facilitating the transportation of people and goods, as well the transmission of ideas and Christianity. Dál Riata was characterised by a robust seafaring culture that included maritime trade and naval warfare.

3.5.4.2 It is likely that the island residents were influenced by the Picts through the marine trade routes, which allowed for proliferation of ideas and practices as well as goods and people. It is unclear if

the Isle of Lewis/*Eilean Leòdhais* was ever politically aligned with the Picts or experienced an influx of Pictish settlement but evidence from the 5<sup>th</sup> and 6<sup>th</sup> Centuries suggests that the Outer Hebrides/*Na h-Eileanan Siar* were independent at this point and evidence of influence from both the Picts and the Scots of the Dál Riata in the early centuries of the medieval has been found (MacLeod Rivett, 2021, 96-97). By the 10<sup>th</sup> Century, the Picts and the Scots had merged in response to pressure from Viking activity forming a new Scoto-Pictish polity, the Kingdom of Alba, that dominated the west and north of Scotland/*Alba* carrying aspects of both cultures into the creation of the Scottish identity (McDonald, 2019).

- 3.5.4.3 Battles between the Norse Vikings and the Scoto-Pictish forces ended in defeat with death of the leaders of the Scoto-Pictish forces in the mid-9<sup>th</sup> Century. The split of the territory following this defeat left the Isle of Lewis/*Eilean Leòdhais* as part of the *Innsi Gall* meaning 'islands of the foreigners' and under Norse control (McDonald, 2019, 20). Known evidence of Viking settlement and activity within Lewis/*Eilean Leòdhais* dates from the 10<sup>th</sup> Century and documentary evidence suggests that there was a period of cultural assimilation throughout the *Innsi Gall* in which aspects of both native cultures and Norse culture survived to shape the emerging Kingdom of the Isles with its centre on the Isle of Man (McDonald, 2019, 22). The majority of the maritime trading activity on the Isle of Lewis/*Eilean Leòdhais* shifted from the more local harbours and landing points to the growing settlement of Stornoway/*Steòrnabhagh* on the eastern coast of the Isle of Lewis/*Eilean Leòdhais*. Stornoway/*Steòrnabhagh* was situated to take advantage of a deep natural harbour which was more amenable to the larger and deeper keeled boats of the later centuries of the medieval period.
- 3.5.4.4 The closest evidence of Viking settlement to the Offshore Project Boundary or MASA is the multi-period settlement of Bosta/*Bostadh* (HES Reference SM7335; outside of the MASA) on Great Bernera/*Beàrnaraigh Mòr*, a small tidal island, 7.6 km southwest of the southeast end of the Offshore Project Boundary. This site further suggests an overlap between the Norse and earlier local inhabitants through remnants of Pictish or Iron Age houses discovered beneath the Viking structures (Medieval Histories, 2015). The abundant shellfish remains and other indicators show that the Vikings depended heavily on maritime resources in and around the Isle of Lewis/*Eilean Leòdhais*.
- 3.5.4.5 The Isle of Lewis/*Eilean Leòdhais* continued under the control of the Norse Manx kings until 1266 when Norway ceded the Hebrides and Isle of Man to the Kingdom of Scotland/*Alba* with the Treaty of Perth culminating the Norse rule in mainland Scotland/*Alba* (Woolf, 2007). The Isle of Lewis/*Eilean Leòdhais* became part of the Lordship of the Isles, a semi-autonomous Gaelic kingdom centring around Clan MacLeod and Clan MacDonald, whose focus was primarily on small-scale subsistence maritime activity. The relationship between the Lord of the Isles and the Scottish king was an uncertain one resulting in the forfeit of the position to the crown and an end to the semi-autonomous activities in 1493. This removal destabilised the tenuous relationships of the ruling

families in the Isle of Lewis/*Eilean Leòdhais*, the MacLeods and the MacKenzies, which led to nearly 100 years of contained civil warfare ending in the MacKenzies' victory (MacLeod Rivett, 2021, 160).

3.5.4.6 No direct evidence of medieval activity has been found within the Offshore Project Boundary and MASA. There is a single example of possible medieval settlement comprised of 4 square structures (A44) within the MASA located 100 m to the northeast of the proposed landfall of the Offshore Project Boundary along the coast at the MHWS. The remains have not been archaeologically investigated to confirm date and extent. Continued use of earlier settlements in nearby areas suggest the potential for evidence of local maritime trade and marine resource exploitation. Any remains would likely be found near or on shore, adjacent to or within areas where settlements were located.

### 3.5.5 POST-MEDIEVAL (1540 – 1900 CE)

- 3.5.5.1 The post-medieval period is considered to be one of the most important periods for maritime activity given the rapid innovations in ship technology, including the gradual shift from traditional wind-powered ships to steam and petrol engines. This was driven in part by the demands of the increasingly global maritime trade and naval activity, and the innovations of the Industrial Revolution (Wessex Archaeology, 2011).
- 3.5.5.2 The first textual description of the Isle of Lewis/*Eilean Leòdhais* was undertaken by Martin Martin in 1695 and first published in 1703 following his travels through the Western Islands. The island retained its rural aspects with most of the activities centred on subsistence farming or maritime endeavours including trade and resource exploitation. Martin (1703) describes the use of marine resources for food and fodder for domesticated livestock. He also details the connections with the surrounding smaller islands including the Flannen Isles/*Na h-Eileanan Flannach*.
- 3.5.5.3 Regarding the Flannen Isles/*Na h-Eileanan Flannach*, Martin (1703, 24) states that the '*inhabitants of the adjacent lands of the Lewis, having the right to these islands, visit them once every summer and there make a great purchase of fowl, eggs, down, feathers, and quills*'. The journey to the Flannen Isles/*Na h-Eileanan Flannach* seems to have been a perilous one from Martin's description of the locals' accounts and there were many actions that needed to be taken, including religious observance at the ruins of the chapel of St Flannen on the biggest of the islands (Island More), to facilitate a successful voyage and not give offence to the nature of that place. One of Martin's local informants added about the Flannen Isles/*Na h-Eileanan Flannach* that '*these remote islands were places of inherent sanctity; and that none ever yet landed in them but found himself more disposed to devotion there, than anywhere else*' (Martin, 1703, 26). This suggests that the connection between the local population in Lewis and the more remote Flannen Isles/*Na h-Eileanan Flannach* was felt profoundly and was considered to be uniquely important during the early centuries of the post-medieval period.

- 3.5.5.4 The Isle of Lewis/*Eilean Leòdhais* was part of the county of Ross and Cromarty/*Ros agus Cromba* through the post-medieval period which predominately lay on the Scottish mainland's northwest coast. The Offshore Project Boundary and MASA lie adjacent to and to the west of the Ross and Cromarty/*Ros agus Cromba* county's Barvas/*Barabhas* parish. The Highlands and islands of Scotland/*Alba* underwent a reorganisation of landholdings and power in the 18<sup>th</sup> and 19<sup>th</sup> Centuries which lead to instability within the local population. This left them vulnerable to the Clearances and poverty, both of which lead to high emigration and a depletion of the population from the parish (MacLeod Rivett, 2021, 195-196). This was exacerbated on the Isle of Lewis/*Eilean Leòdhais* by the removal of the traditional landowner, the MacKenzies, in the early 18<sup>th</sup> Century due to their support of the Jacobite cause. The political instability lead to a deterioration of living standards, religious observance, and education on the island which is noted within the Statistical Accounts from 1797 (MacDonald, 1797). The MacKenzies, specifically Lord Seaforth, regained control in the early 19<sup>th</sup> Century but ultimately sold the island to Sir James Matheson in the mid-19<sup>th</sup> Century. Matheson's reorganisation of the land and tenants on the island increased emigration and created a more desperate situation for the inhabitants (MacLeod Rivett, 2021, 198). Demonstrations and riots in response to the increasingly tenuous situation of the crofters lead to the passing of the Crofters' Holdings Act 1886 which provided more security for the crofting population of the Isle of Lewis/*Eilean Leòdhais* (MacLeod Rivett, 2021, 195-196).
- 3.5.5.5 Stornoway/*Steòrnabhagh* developed into a central hub for the expansion of fishing, trade and vessel design on the Isle of Lewis/*Eilean Leòdhais* between the 16<sup>th</sup> and 19<sup>th</sup> Centuries. Small open boats such as *sgoths* and modified Norse-inspired *birlinns* had been utilised by Isle of Lewis/*Eilean Leòdhais* inhabitants to facilitate local travel and fishing throughout the post-medieval period (Fenton, 1997). These were able to be pulled on shore in sheltered locations or in dedicated boat nausts, an example of which is noted within the MASA at Port Mhor Bragar (A30) located 1.9 km south of the Offshore Project Boundary. Commercial deep sea fishing was started on the island in the early 18<sup>th</sup> Century on the behest of Lord Seaforth who compelled the local population to participate through threats of expulsion for their land (MacDonald, 2004). Previously, fishing was used to supplement other subsistence activities but was not undertaken at scale. The local commercial fishermen had to compete with vessels from mainland Scottish ports as well as Dutch fishing vessels. Dutch fishing methods and the herring trade had a significant impact on the Hebridean maritime customs during this time, and fishing for herring and cod gradually became the mainstay of the local economy (Withers and Dodgshon, 1999). Local fishing and kippering practices were possibly influenced by Dutch vessels that frequently operated in the Hebridean waters, such as the herring busses, which were big, robust fishing ships built for herring (Withers and Dodgshon, 1999). Evidence of fishing activities within the MASA is limited to a loss record of a wooden lugsail fishing vessel, the *Standard* built in 1875, which is recorded as having foundered and sank at Shawbost/*Siabost* in the Isle of Lewis/*Eilean Leòdhais* in 1882 (A2). Shawbost/*Siabost* is a small bay with a long shingle beach that was utilised as temporary anchorage and to beach smaller boats when necessary for the transport of smaller goods.

- 3.5.5.6 The kelp industry, although brief, was a remunerative industry in the Isle of Lewis/*Eilean Leòdhais* from 1760-1836, with the parish of Uig/*Ùige* becoming the first significant kelp-producing area in the Isle of Lewis/*Eilean Leòdhais* (MacDonald, 2004). Deep waters around Vuia Bheag located between Uig/*Ùige* and Great Bernera/*Beàrnaraigh Mòr* were used to enable boats to dock with the seaweed and load the finished product for transportation (Hebridean Connections, 2024; MacDonald, 2004). Records suggest that, although Lord Seaforth supported the kelp industry and pushed the local populations to participate, it was not an activity that the locals were keen to pursue as it was physically demanding and noxious. Additionally, the emphasis on production of kelp limited the amount of seaweed that could be harvested to fertilise crops and redirected locals' activities and limited funds (MacDonald, 2004, 125-126).
- 3.5.5.7 The ocean off the west coast of the Isle of Lewis/*Eilean Leòdhais* was part of the north area of the Western Approaches into the North Atlantic. The waters were part of trade routes between Scandinavian countries, Russia, and the northeastern ports of Britain and the territories within Iceland, Greenland, and the North American continent. There are loss records for 19 ships dating between 1796 and 1874 located within the MASA (A1, A3-A5, A9, A10, A12-A14, and A16-A20). The locations are not known and none of these wrecks have been relocated through archaeological investigation. The loss records for 6 further undated wrecks are also noted within the coastal waters within the MASA (A6-A8, A11, A14, and A15). It is likely that these ships also dated from the post-medieval but could be early modern in date given the rise of more accurate recordkeeping in the post-medieval period.

### 3.5.6 MODERN (1901 CE - PRESENT)

- 3.5.6.1 The maritime activity on the Isle of Lewis/*Eilean Leòdhais* after the post-medieval period, particularly during the early 20<sup>th</sup> Century, was shaped by a complex interplay of military conflicts and advancements in maritime technology.
- 3.5.6.2 Tensions between the landowner and the tenants continued into the modern period with the crofters needing to supplement their income and food resources with fishing and other marine resources as much of the desirable arable land on the Isle of Lewis/*Eilean Leòdhais* was being left fallow by Matheson's staff on his orders. Altercations over crofting land sizes lead to the passage of the Small Landholders (Scotland) Act in 1911 but the implementation of the land schemes provided for under the act was delayed as a result of the outbreak of the First World War.
- 3.5.6.3 More than 6,000 men joined the war effort equating to the majority of the able-bodied men on the Isle of Lewis/*Eilean Leòdhais* (Hebridean Connections, 2025). Of those, 1,151 were lost during the war and a further 181 were lost on their return to the island in the wrecking of the HMY *Iolaire*, just outside of Stornoway/*Steòrnabhagh* Harbour, in 1919 (The Iolaire Centre, 2025). Records suggest that the population was further depleted when the Prime Minister urged the returning men to find land abroad within foreign British territories as the land that was promised was not forthcoming (Hebridean Connections, 2025). The local fishing industry was also decimated by the population

depletion and the shift in markets caused by the war which made it difficult to recover from in the interwar period (MacDonald, 2004, 152). To complicate the situation, in 1918 Lord Leverhulme, an English industrialist in the soap-making business, purchased the Isle of Lewis/*Eilean Leòdhais* and the Isle of Harris/*Na Hearadh* from Matheson with intentions of industrialising the land and people to take advantage of the marine resources (MacDonald, 2004, 257). This was largely unsuccessful in the Isle of Lewis/*Eilean Leòdhais* as the focus remained on the acquisition of crofting land and Leverhulme decided to divest himself of his property in the Isle of Lewis/*Eilean Leòdhais* through both gifts of the land to councils and individual crofters, as well as selling parcels.

- 3.5.6.4 The remoteness of the Isle of Lewis/*Eilean Leòdhais* left it vulnerable during the Second World War. The protection of the Western Approaches, which would have included the Offshore Project Boundary, was undertaken by the Western Approaches Command out of Liverpool. A Royal Air Force base was established in Stornoway/*Steòrnabhagh*, RAF Stornoway, on a 1930s civilian airstrip in 1941 to facilitate maritime patrols within the area during the war (ABCT, 2025). RAF Stornoway offered a staging point for long-range patrol aircraft, including Short Sunderland flying boats. To supplement the activities, a watcher's hut was established on the cliffs at Gallan Head utilised by men in the local branch of the Auxilliary Coastguard Service during the war to monitor the Northwest Approaches. The watcher's hut, now called RAF Aird Uig, was replaced with a type R10 radar station in 1954 to maintain the monitoring of the approaches (Comann Eachdraichd Uig, 2025). Following the war, fishing and other resource extraction activities have continued within the Offshore Project Boundary but on a smaller scale.
- 3.5.6.5 There are no known sunken military watercraft or aircraft remains within the Offshore Project Boundary and MASA.

## 4 LIKELIHOOD OF ARCHAEOLOGICAL REMAINS AND STATEMENT OF SIGNIFICANCE

### 4.1 PALAEOLANDSCAPES AND PALAEOENVIRONMENTAL

- 4.1.1.1 The Offshore Project Boundary has a moderate likelihood for palaeolandscape remains. The Offshore Project Boundary and MASA was impacted by the advance and retreat of the last ice sheet during the LGM in the Late Devensian glaciation c. 21-17,000 BCE. Prior to this, there are indications that the ice sheet was also present in the northwest sector between c. 42,000-36,000 BCE and 30,000-28,000 BCE during previous glaciation events during the Devensian glaciation cycle (Bradwell *et al.*, 2021). Numerous stages of deglaciation subsequently took place in the northwest sector between c. 26,000-23,000 BCE, indicated by ice-retreat features and ice-marginal sediments deposited close to the present-day coastline.
- 4.1.1.2 Available data has indicated that the majority of the Offshore Project Boundary and MASA is characterised by pre-Quaternary bedrock close to, or at, the modern seabed, with <5 m Quaternary cover. A discrete increase of the Quaternary thickness (>50 m) is seen in the centre of the Array Area within 2 basins, thought to contain Pleistocene glaciomarine sediments which are unlikely to contain archaeological material but may inform on palaeoenvironmental change.
- 4.1.1.3 The southeast extent of the Offshore Project Boundary and MASA intersects with part of the northwest coast of the Isle of Lewis/*Eilean Leòdhais* Geological Conservation Review (GCR) database and is recognised as a nationally and internationally important earth science (geological and geomorphological) site in Great Britain. Any sites identified within this area would be important for providing evidence of past sea level changes and palaeoenvironmental conditions.
- 4.1.1.4 Palaeolandscape remains, including landforms and deposits, have evidential value for the past environment in which prehistoric and later people lived and would be of up to **medium** heritage value, derived from archaeological and historical interest, depending upon the survival and extent.
- 4.1.1.5 The nearshore SBP data was poor and neither depths of sediments nor horizons were able to be resolved, therefore, the likelihood of palaeoenvironmental remains is not entirely clear but estimated as moderate. Remains of submerged post-glacial landscapes, including intertidal peat deposits and buried tree stumps, have been recorded along the western shores and further investigation within this area of the Offshore Project Boundary is needed to clarify the potential within the Offshore Project Boundary (for further information see **Chapter 15, Volume 2a** Section 15.8.2). Palaeoenvironmental remains, if present, would be of up to **medium** heritage value. The use of aircraft-mounted LiDAR and the interpretation of this data (see paragraph 2.5.2.2) will help to mitigate coverage and quality issues and identify features of interest that can potentially be avoided, reducing risk to UCH receptors.

## 4.2 PREHISTORIC

- 4.2.1.1 The Offshore Project Boundary has a low likelihood to contain Palaeolithic remains. There is the possibility that land within the Offshore Project Boundary was sub-aerial during the Palaeolithic though the extent is currently undetermined. The climate would have been harsh and the exposed land would not have been desirable for extensive use or settlement though may have been exploited intermittently for resources. There are no known Palaeolithic sites in the MASA and the closest known sites are on the Scottish mainland. Isolated findspots of stone tools or faunal remains dated to this period are possible within or at the interface between Pleistocene deposits and later geological deposits but are considered unlikely.
- 4.2.1.2 Remains of lithic material would be of **low** value if comprised of isolated lithic remains or of **medium** value if comprised of lithic scatters, derived from archaeological interest.
- 4.2.1.3 The Offshore Project Boundary has a moderate likelihood to contain Mesolithic prehistoric remains. The earliest evidence for human habitation on the Isle of Lewis/*Eilean Leòdhais* is associated with peat samples. Evidence of Mesolithic activity is generally limited to lithic scatters, but it is possible that evidence of temporary settlement is present in response to the abundant natural resources, both marine and terrestrial, that would have been available during the period.
- 4.2.1.4 If present, Mesolithic temporary settlement remains would be of **high** or **very high** value, depending on preservation and extent, derived from their archaeological interest. Remains of lithic material would be of **low** value if comprised of isolated lithic remains or of **medium** value if comprised of lithic scatters, depending upon the type and extent.
- 4.2.1.5 The Offshore Project Boundary has a moderate likelihood to contain evidence of marine resource exploitation during the Neolithic, Bronze Age and Iron Age. Although there is no direct evidence of watercraft from these periods within the Offshore Project Boundary and MASA, historic environment records onshore along the coast, including assets, indicate potential sites of archaeological interest in the intertidal region, and thus may be used as a proxy for potential offshore activity.
- 4.2.1.6 If present, evidence of later Prehistoric remains would be of up to **medium** value, depending on preservation and extent, derived from their archaeological interest. Isolated remains would be of **low** significance derived from archaeological value.

## 4.3 ROMAN

- 4.3.1.1 It is not likely that the Offshore Project Boundary will contain Roman remains. There is no evidence of Roman activity in the Isle of Lewis/*Eilean Leòdhais* or the wider Outer Hebrides/*Na h-Eileanan Sià*. Evidence of the use of ships for coastal trading and Roman military activity is possible but is considered unlikely as they were not known to have included the region within their trade network.

4.3.1.2 If present, evidence of Roman activity within the Outer Hebrides/*Na h-Eileanan Siar* would be of up to **very high** value, derived from their archaeological and historical interest, given the common understanding that Roman activity did not extend to this area. Evidence of Roman trade goods, likely in the form of isolated remains, would be of **low** significance derived from archaeological value.

## 4.4 MEDIEVAL

4.4.1.1 The Offshore Project Boundary has a moderate likelihood to contain medieval remains. Evidence suggests that coastal trading, international trading, and local resource exploitation continued into the medieval period. Although there is no direct evidence related to the Vikings within the Offshore Project Boundary or MASA, the multi-period settlement of Bostadh on Great Bernera/*Beàrnaraigh Mòr*, a small tidal island adjacent to the Isle of Lewis/*Eilean Leòdhais*, provides archaeological evidence of Viking inhabitation within the area.

4.4.1.2 If present, remains of medieval ships would potentially be of **high** value derived from their archaeological and historical interest if present. Remains of medieval coastal infrastructure would be of **high** or **medium** value, depending on preservation and extent, derived from archaeological and historical interest. Isolated remains would be of **low** value derived from archaeological interest.

## 4.5 POST-MEDIEVAL

4.5.1.1 The Offshore Project Boundary has a high likelihood to contain post-medieval remains. From the 16<sup>th</sup> to 19<sup>th</sup> Century, maritime activity on the Isle of Lewis/*Eilean Leòdhais* expanded significantly. As well a local increase in maritime travel and trade around the island and mainland Scotland, Dutch vessels frequently operated in Hebridean waters. Although recordkeeping improved through the period, the ubiquitousness of maritime vessels for trade, travel and resource exploitation, the lack of comprehensive records in the early centuries of the period and the dangers of maritime activity suggest that there remains substantial potential for unknown shipwrecks throughout the Offshore Project Boundary. The 19<sup>th</sup> Century was a transitional period in shipbuilding technology as shipbuilding became more regional with less local construction. Technology changed from wood as the primary building material to iron, for a period of 30 years (from 1860-1889), to steel in the last decade of the period.

4.5.1.2 Remains of early post-medieval ships would potentially be of **high** value derived from their archaeological and historical interest if present. Remains of later wooden and iron post-medieval ships would be of **high** or **medium** value, depending on type, preservation and extent, derived from archaeological and historical interest. Early steel shipwrecks would likely be of **medium** value depending on type, preservation and extent, derived from archaeological value. Isolated remains would be of **low** value derived from archaeological and historical interest.

## 4.6 MODERN

- 4.6.1.1 The Offshore Project Boundary has a moderate likelihood to contain modern remains. Although no designated or known sites were identified within the Offshore Project Boundary and MASA, the area was utilised during the First and Second World Wars, as well as having RAF bases on the Isle of Lewis/*Eilean Leòdhais*. Submarine activity during both World Wars resulted in numerous wrecking events of commercial, military and personal vessels.
- 4.6.1.2 Remains of modern shipwrecks would likely be of **medium** value derived from archaeological and historical interest. Aircraft remains would be of **high** value derived from archaeological and historical interest. Submarine remains would be of **high** value derived from archaeological and historical interest. Isolated remains would be of **low** value derived from archaeological interest.

## 5 GLOSSARY OF TERMS AND ABBREVIATIONS

5.1.1.1 A list of key terms and acronyms used in this appendix are provided in **Table 5-1** and **Table 5-2**.

Table 5-1 Acronyms and abbreviations

Term	Definition
BGS	British Geological Survey
CIfA	Chartered Institute for Archaeologists
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
GCR	Geological Conservation Review
HER	Historic Environment Record
HES	Historic Environment Scotland
HIS	Hebridean Ice Sheet
LGM	Last Glacial Maximum
MASA	Marine Archaeology Study Area
MBES	Multibeam Bathymetry
MHWS	Mean High Water Springs
MPS	Marine Policy Statement
NMP	National Marine Plan
nT	nanoTesla
OCAS	Offshore Cable Area of Search
OHCCMAP	Outer Hebrides Coastal Community Marine Archaeology Pilot Project
OSP	Offshore Substation Platform
OWF	Offshore Wind Farm
SAMPHIRE	Scottish Atlantic Maritime Past: Heritage, Investigation, Research & Education
SBP	Sub-bottom Profiler
ScARF	Scottish Archaeological Research Framework
SNRHE	Scottish National Record of the Historic Environment
SSS	Sidescan Sonar
UHRS	Ultra-High Resolution Seismics
UKHO	United Kingdom Hydrographic Office
WTG	Wind Turbine Generator

Table 5-2 Glossary

Term	Meaning
the Applicant	Spiorad na Mara Limited (the Project owner).
Array Area	The offshore area within which the offshore wind turbine generators (WTGs), associated foundations, Offshore Cables, and Offshore Substation Platform (OSP) (if required), will be located. This area

Term	Meaning
	encompasses the Turbine Area that will contain all above water surface infrastructure (WTGs / OSP) and an additional area within which further below water infrastructure (foundations and cables) may also be located.
Environmental Impact Assessment Report (EIAR)	The Environmental Impact Assessment Report (EIAR) prepared to assess the likely significant effects of the Project on the environment.
Historic Seascape Characterisation	A method that maps and describes the past and present cultural influences shaping coastal and marine areas, using GIS to integrate historical data with current features for informed marine planning, management, and public understanding of seascape heritage.
Impact	Change that is caused by an action; for example, foundation installation (action) during construction which results in habitat loss (impact).
Landfall	This consists of works from offshore Horizontal Directional Drill (HDD) exit pits (located below MLWS) to onshore at the Transition Joint Bays (TJB) (located above MHWS). The infrastructure and installation methods associated with the Landfall involves both onshore and offshore components.
Offshore Cable Area of Search (OCAS)	The area within which the offshore electrical and communication cables between the Array Area and Landfall up to Mean High Water Springs (MHWS) will be located.
Offshore Project Boundary	The 'red line boundary' encompassing the Offshore Project.
Project	The Sporad na Mara offshore wind farm development. This term describes the whole development, including all offshore and onshore components.
Study Areas	Study Areas are determined for each technical discipline and are described within each technical chapter.
Turbine Area	A reduced area within the Array Area where above water surface infrastructure would be located i.e. wind turbine generators (WTG) and Offshore Substation Platform (OSP) (if required). This area has been developed and refined through stakeholder engagement and environmental assessment.

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