



# England's Historic Seascapes

**Historic Environment Characterisation  
in England's Intertidal and Marine Zones**

**Proposal for Pilot Project**

**ENGLAND'S HISTORIC SEASCAPES**  
**HISTORIC ENVIRONMENT CHARACTERISATION**  
**IN ENGLAND'S INTERTIDAL AND MARINE ZONES**

**Project Design**

**Wessex Archaeology**  
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**English Heritage**

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# ENGLAND'S HISTORIC SEASCAPES

## HISTORIC ENVIRONMENT CHARACTERISATION IN ENGLAND'S INTERTIDAL AND MARINE ZONES

### Project Design

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## 1. INTRODUCTION

- 1.1. In August 2004, English Heritage asked WA and others to submit a proposal to develop a new method and pilot projects for Historic Landscape Characterisation (HLC) of the seascape of England's intertidal and marine zones, out to the 12 nautical mile limit of territorial waters. This document is an abridged version of the original tender document which was specifically written to address the requirements of *England's Historic Seascapes: a project brief for piloting historic landscape characterisation in England's inter-tidal and marine zones* (English Heritage Characterisation Team, June 2004). English Heritage's Project Brief requires HLC to be piloted initially in NW England, with a Project Design for a further four Pilot Areas to be prepared as part of this project.
- 1.2. *England's Historic Seascapes* project is designed to develop a method for combining historical data and scientific data to produce character areas representing historical sea-use and the potential impacts of human activity and the environment on the archaeological record. It therefore seeks to find ways of improving the representation of historical data on the seabed in order to develop a methodology for creating historic character areas in a marine environment, which is repeatable so that it can be accurately applied to other coastal areas. This will inevitably raise issues arising from integrating marine and terrestrial datasets. In order to approach problems which are also experienced in other areas of the marine industry and by stakeholders in heritage management, input from other interested parties will form an intrinsic part of the methodological development of the Geographic Information System (GIS) for *England's Historic Seascapes*.

## 2. BACKGROUND

- 2.1. Historic Landscape Characterisation (HLC) is a key EH programme and a leading method for managing change (Aldred and Fairclough 2002). The initial concept arose from the 1990 White Paper, *This Common Inheritance*, where it was proposed that a comprehensive characterisation of the whole landscape was preferable to generating a list of landscapes of special importance. *England's Historic Seascapes* complements the characterisation of England's land area and promotes an integrated approach to marine resource management for EH's responsibilities under the *National Heritage Act 2002*. The initiative marries well with the Government's first

Marine Stewardship Report *Safeguarding our Seas* (DEFRA 2002a) which committed the government to consider the role of spatial planning, to build on existing seabed mapping and develop an integrated assessment of the seas by 2004.

- 2.2. The first terrestrial HLC project was undertaken for the county of Cornwall and pioneered many of the detailed techniques. The methodology has continued to evolve and its principles have been extended to other characterisation programmes projects, for example towns. The Cornish project's guiding principles were:
- to characterise the whole landscape, in the present day;
  - to be straightforward, consistent, repeatable and verifiable with further assessment;
  - to be as far as possible objective, with areas of subjectivity made transparent;
  - to consider no part of the landscape to be of greater value than another;
  - to identify dominant historic landscape character;
  - to use a pre-defined classification;
  - to produce a common, easily understandable language for users and a starting point for further research.
- 2.3. Terrestrial projects have utilised geo-referenced historic maps to produce 'time slices', extrapolating from map to map the ways in which the landscape has changed over time. The characterisation of the present day landscape then forms a benchmark against which future changes can be gauged and monitored.
- 2.4. One of the most immediate management issues is marine aggregate extraction and the desire to continue the co-operation between industry and curators that lead to the publication of Guidance Note: *Marine Aggregate Dredging and the Historic Environment* (BMAPA and English Heritage 2003). *England's Historic Seascapes* will enhance the quality and effectiveness of the curatorial response to marine aggregate licence applications.

### **3. AIMS AND OBJECTIVES**

- 3.1. The aims of the proposed pilot, as set out in the Project Brief, are as follows:
- A1 To define, test in the Liverpool Bay and Flyde pilot area, review and finalise a desk-based methodology for extending historic landscape characterisation to the present landscape in the intertidal and marine zone of England to the limit of UK territorial Waters.
  - A2 To create a GIS-based characterisation of the historic and archaeological dimension in the present landscape of the intertidal and marine zones of England to the limit of UK Territorial Waters.
  - A3 To contribute to government agendas in favour of integrated spatial planning of the intertidal and marine zones by creating a historic environment GIS database for the project area which will readily integrate with analogous databases for the natural environment.

- A4 To create a framework of understanding which will structure and promote well-informed decision-making relating to the sustainable management of change and conservation planning assessing the historic environment in the intertidal and marine zones.
- A5 To enhance and contextualise the Maritime Record of the National Monuments Record and those County SMR/HERs working within the project area.
- A6 To structure, inform and stimulate future research programmes and agendas relating to the project area.
- A7 To improve the awareness, understanding and appreciation of the historic dimension of the project area to professional and non-professional users of the database.
- A8 To be a demonstration project and specifically to produce a model for extending its methodology to further project areas encompassing a greater diversity of environmental and management conditions.
- 3.2. The project's key objectives, as set out in the Project Brief (numbered by WA), are as follows:
- O1 To produce a GIS-database structure capable of accommodating the distinctive qualities of the project area while retaining compatibility of that database with the interfacing or partly overlapping terrestrial characterisation databases.
- O2 To produce a GIS-based HLC characterising the project area's landscapes in historic and archaeological terms by means of:
- identifying and gaining access to the range of data sources relevant to understanding the historic and archaeological dimension of the project area, placing greatest emphasis on sources with consistent national coverage;
  - using GIS polygons to define areas having similar historic character;
  - defining polygons on the basis of combined shared values of dominant character attributes, with secondary attributes recorded in a consistent, structured manner;
  - identifying trends and recurrent groupings among the attributes to define historic landscape types which will, together, encompass all of the polygons and reflect the differing historical processes in their information.
- O3 To record the sources and datasets supporting each stage of characterisation, to meet the needs of transparency and assist future updates against the initial benchmark characterisation.
- O4 To analyse and interpret HLC to produce preliminary syntheses from it.
- O5 To produce a Project Design for applying the project's HLC methodology to a further four areas in subsequent projects which will validate that methodology against major contrasts in coastal and marine environmental and management context.
- O6 To assess present uses and potential for the HLC in informing sustainable management of change and spatial planning issues surrounding marine aggregates extraction in the project area.

- O7 To assess present uses and potential for the HLC in informing broader sustainable management of change, spatial planning, outreach and research programmes.
- O8 To produce an archive and a report reviewing the methodological development and practical application of HLC in the project area and assessing the benefits of extending such characterisation more widely to the historic environment in the intertidal and marine zones to the limit of UK territorial waters.
- O9 To disseminate information to on the progress and results of the project through professional popular publication and other media.

#### 4. PILOT AREAS

- 4.1. Pilot Area A comprises Liverpool Bay and the Ribble and has been mapped by WA (see Figure 1) on the basis of the following boundaries:

Landward boundary	MHW, including the Normal Tidal Limit of rivers, as mapped by the OS (Boundary-Line dataset, 1:10 000).
seaward boundary	the 12 nautical mile limit of UK territorial waters, calculated as a 12 nm buffer to the Extent of Realm (MLW and seaward local authority boundary extensions) mapped by the OS (Boundary-Line dataset, 1:10 000).
south-western boundary	the line between the territorial waters adjacent to England and Wales extending from the Dee Estuary, as defined in <i>The National Heritage Act (Territorial Waters Adjacent to England) Order 2002</i> (Statutory Instrument 2002 No. 2427).
northern boundary	a line perpendicular to the general lie of coast at the point at Rossall Point, Fleetwood, out to the 12 nm limit.

- 4.2. The Pilot Area will provide the basis for developing a reproducible draft methodology for Maritime HLC, which may later be applied to other coastal areas. A technical definition of Pilot Area A is set out in the methodology below, and its provisional boundaries are illustrated in Figure 1.
- 4.3. The Project Brief suggests that MHW should not be taken as an arbitrary landward line to truncate character polygons. Bearing this in mind, and with a view to understanding coastal activities that have a direct bearing on the character of intertidal and marine areas, WA proposes to include a strip of coastal land above high water, calculated as a 2 km buffer landward of MHW.
- 4.4. Pilot Area A extends from the boundary between territorial waters off Wales and off England in the south and west, to just north of Lytham St. Anne's in the north. It extends out to the limit of UK Territorial Waters, encompassing the Hamilton Gas Field. Its inner limits comprise the indented estuaries of the Dee, Mersey and Ribble

and their tributaries, with open coast off the Wirral and Formby-Southport. Large areas of the Ribble and Dee dry at low water, while the Mersey has deep water to its tidal limit at Warrington. Spits and banks that dry at low water, many of which are mobile, dominate the coast below Formby. The water is shallow to a considerable distance offshore, being typically not more than 20m below Chart Datum (CD) except towards the seaward limit of Pilot Area A where depths occasionally approach c. 25m below CD. Above Formby, the seabed is similarly shallow, though without the convoluted banks and spits, other than the mobile and hazardous flats of the Ribble itself.

- 4.5. There are authoritative charts of Pilot Area A dating back to the time of Mackenzie (1776) at least, but even his work is limited in detail, especially offshore. It is worth noting that current published Admiralty Charts of Pilot Area A are still based on surveys dating back to the Nineteenth Century in some areas.
- 4.6. The chronological extent of the project encompasses the earliest human occupation of Britain (c. 500,000 BC or Lower Palaeolithic) to the present day (as defined by the most recent edition of available mapping).
- 4.7. Four other Pilot Areas (B-E) have been proposed for subsequent projects, which will be the subject of a Project Design to be prepared as part of this project.

Pilot Area B	Durlston Head to Selsey Bill, including the Solent, the Isle of Wight and adjacent Territorial Waters.
Pilot Area C	Withernsea to Skegness including Humber Estuary and adjacent Territorial Waters.
Pilot Area D	Aldeburgh to Clacton-on-Sea and adjacent Territorial Waters
Pilot Area E	Scarborough to Hartlepool and adjacent Territorial Waters

## 5. ENVIRONMENT

- 5.1. On the basis of BGS offshore mapping (*Liverpool Bay: seabed sediments and quaternary geology*, 1984) the seabed in Pilot Area A is dominated by sand, with some mud and gravel components. There are muddy sands on the margins of the Ribble and Dee. Beneath the surface there are typically 20m of Quaternary deposits, though there are some pre-Quaternary highs. There are also some deeply incised cuts into the pre-Quaternary deposits, approaching 100m below OD, off Formby. Offshore, thick deposits of Devensian Till dominate which may reflect the former course of the Mersey and/or Dee, potentially containing archaeological and palaeo-environmental material of Lower, Middle and Early Upper Palaeolithic date. Inshore areas are characterised by considerable depths of superficial sediments of late Devensian and Holocene date to more than 30m below OD, typically covered by tidal flat deposits and/or sand.
- 5.2. Archaeological and palaeo-environmental investigations within Pilot Area A have demonstrated the presence of peats and other deposits of archaeological and palaeo-

environmental relevance, associated with Constable Bank off Llandudno. Late Upper Palaeolithic activity is demonstrated by finds at Poulton-le-Fylde, and at this time much of Pilot Area A is likely to have comprised inhabitable landscape. Fluctuations in relative sea-level during the late Devensian and early Holocene would have had a considerable impact on the human settlement patterns during these periods.

- 5.3. Closer to the shore and in the estuaries, Pilot Area A clearly includes areas that are known or likely to comprise relics of early prehistoric landscapes. From the Mesolithic onwards, as the coastline approximated its current position, coastal communities have continued and developed their dependency on the sea for subsistence, trade and cultural identity.

## **6. METHODOLOGY**

### **6.1. FAMILIARISATION AND ANALYSIS OF TERRESTRIAL HLC METHODOLOGIES**

- 6.1.1. English Heritage undertook a review of HLC methodologies in 2002, and noted that four broad types of project have been undertaken in the past (English Heritage 2002);
- Classification-led
  - Document-led
  - Attribute-led
  - Multi-mode

The conclusions of the review noted that the predominant method is now 'multi-mode' utilising attribute based approaches with advanced GIS. The review further notes that there are two types of 'multi-mode' differing in data structure and in transparency. It is anticipated that a review of all four methodologies will be extremely beneficial to the development of marine and intertidal HLC drawing together on the best elements of each.

- 6.1.2. It is also noted that terrestrial HLC has been undertaken in Lancashire and is currently underway in Cheshire and on Merseyside. Some HLC of intertidal zones has already been undertaken (e.g. Lancashire project - definition of rough coast (coastal): dunes, saltmarsh, sand, mudflats and shingle, other coastal rough land). As one of the aims of *England's Historic Seascapes* is to develop marine and intertidal HLC that is complementary, WA will review the data structure and methodology being undertaken in these adjacent areas in order to facilitate a seamless approach.
- 6.1.3. A series of meetings have been undertaken to discuss end-user requirements, explore current curatorial decision-making practices, and address curators' aspirations for seascape characterisation.

### **6.2. FAMILIARISATION WITH REGIONAL INTERTIDAL AND MARINE MANAGEMENT ISSUES**

- 6.2.1. It is noted that there are several marine initiatives that have the potential to illuminate the possible IT solutions for seascape characterisation. Notable amongst these is the progress that has been made in developing a national classification of marine habitats

for the shores and seabed around Britain and Ireland, published in 2002 by the Joint Nature Conservation Committee (JNCC). This classification may be useful in determine type classifications, performing the same function as the monument type thesaurus in MIDAS/Inscription.

- 6.2.2. Other initiatives include the recently completed *Irish Sea Pilot*, which aimed to develop a strategy for marine nature conservation that could be applied to all UK waters (DEFRA 2004). The pilot tested the concept of 'marine landscapes' based on geophysical and hydrographical data to identify habitat types. The pilot project identified 18 coastal and seabed marine types and 4 water-column marine landscape types within the Irish Sea as a whole.
- 6.2.3. This review will consider the *Guide to best Practice in Seascape Assessment* (Countryside Council for Wales, 2001), noting that the seascape characterisation has a different meaning in this instance.
- 6.2.4. Researchers in the UK and elsewhere (e.g. Australia, USA and Denmark) are utilising or working towards definitions of 'maritime cultural landscapes' (Westerdahl 1992, Stuart 1998). As a consequence, WA will undertake an international literature review and make contact with practitioners in order to benefit from their experiences.
- 6.2.5. The project team will undertake bibliographic searches to locate relevant reports (e.g. Shoreline Management Plan 11A: Great Orme to Formby, April 1999) that will help to shed light on the most pertinent and pressing management issues in the marine and intertidal areas of Pilot Area A. This review will help to clarify the likely day-to-day application of the resulting characterisation.

### **6.3. REVIEW OF SOFTWARE/HARDWARE OPTIONS**

- 6.3.1. Within Pilot Area A it has already been established that both MapInfo and Arc View (differing releases) are being utilised by local authority curatorial staff. One of the underpinning principles of the GIS system developed by WA will be its interoperability at national and local levels. Hence, WA's project team will undertake liaison with coastal members of ALGAO, the NMR IT section and the NMR's SMR Liaison Officer to assess appropriate file formats and software.
- 6.3.2. The pace of IT developments suggests that it would be sensible to undertake a review of technological developments before embarking on the subsequent Pilot Areas (B-E) and for subsequent phases as the marine and intertidal HLC as it is promulgated national. WA will review trends and useful developments in terms of 1, 2 and 3 years ahead.

### **6.4. REVIEW OF DATA STANDARDS**

- 6.4.1. WA will revisit standards documentation including MIDAS (including annexes), Inscription wordlists, and *Informing the Future of the Past: Guidelines for SMRs*.
- 6.4.2. WA will review current initiatives in coastal and marine mapping, including *Delivering Integrated Marine Mapping for the UK*, CEFAS 2003.

- 6.4.3. WA will liaise with the NMR and the Archaeological Data Service regarding applicable standards for accepting, using and archiving digital data.

## **6.5. DATA COLLATION**

- 6.5.1. WA is compiling bibliographic and documentary references to previous sea-usage, coastal industries and activities, and settlement (e.g. historic sailing pilots and rutters, assessments of local fisheries, port activity, centres of salt production, development of seaside resorts, etc).
- 6.5.2. Bibliographic reference to coastal change will be collated. The information contained in Shoreline Management Plans and initiatives such as *Futurecoast* (Halcrow/DEFRA 2002) will be accessed to gain an understanding of coastal cells, sediment transport systems, and areas of experiencing erosion or accretion. The locations of relative sea level indicator points within Pilot Area A will be collated from bibliographic sources.
- 6.5.3. To assist with the identification of former landsurfaces and palaeochannels within the marine zone, the availability of sub-bottom profiling survey data and borehole data from offshore developers will also be assessed.
- 6.5.4. A metadata database will be developed to record details of useful datasets (for example topography, bathymetry, geology, habitats, land-use, ownership and management initiatives) held by external bodies such as the Proudman Oceanographic Laboratory (POL), the Joint Nature Conservation Committee (JNCC), Liverpool Bay's offshore developers, and harbour authorities. The database will be devised on the Dublin Core standard.
- 6.5.5. The terrestrial and maritime datasets provided by the NMR and local authority HERs will be incorporated into the project dataset. It is anticipated that the HER data will be downloaded into WA's licenced copy of the HBSMR software, whilst the short summary report from the NMR will be converted into simple attribute database attached to a GIS layer. It is not anticipated that the two datasets will be combined to form one historic environment layer. Rather they will be used as independent layers within the GIS project.
- 6.5.6. Selected datasets relating to topography, bathymetry, geology, habitats, coastal land use, sea and seabed use, and management will be incorporated as a whole into the project GIS.
- 6.5.7. Relevant cartographic material will be scanned, geo-referenced and incorporated into the whole project GIS.
- 6.5.8. Vertical Aerial Photographs showing features not previously recorded in the NMR and SMR records, on which extents of monuments and activities are most readily apparent will be scanned and geo-referenced for use in characterisation.
- 6.5.9. A series of field visits will be carried out at selected accessible points on the coast of Pilot Area A, to inform the characterisation process.

- 6.5.10. Where appropriate, organisations holding key secondary sources will be visited. The potential usefulness of sources will be assessed and the entries in the meta-data database will be updated. Where appropriate, sources will be copied to the project archive.
- 6.5.11. Where appropriate, organisations holding key non-documentary sources will be visited. The potential usefulness of sources will be assessed and the entries in the meta-data database will be updated. Where appropriate, sources will be copied to the project archive.
- 6.5.12. An overview of coastal change since the Devensian Glacial Maximum will be developed on the basis of Relative Sea Level (RSL) indicators, documentary sources, and information about the likely levels of pre-inundation surfaces in Pilot Area A. A bathymetry-based model will not be prepared, unless further work indicates that its results are likely to be useful notwithstanding current reservations. A schematic overview will also be prepared for coastal change in earlier prehistory, from c. 500,000 BC to the Devensian Glacial Maximum.
- 6.5.13. Place-name polygons will be defined on the basis of modern and historic charts, taking the NMR thesaurus of maritime place-names – as used in respect of Named Locations – as a starting point.
- 6.5.14. The place-name polygons will be assessed in terms of Present and Previous Character Types, and one or more of each type will be ascribed to each place-name polygon. It is anticipated that this will provide a first indication of the likely extent of HLC polygons. On the basis of queries of Present and Previous Character Types as ascribed to place-name polygons, it is anticipated that a first iteration of HLC polygons will be drawn. These HLC polygons will then be ascribed to Historic Seascape Character Types, with supporting and secondary attributes, on the basis of the draft Method Statement and User Manual.
- 6.5.15. WA will undertake a review of the average size of polygon with regard to nearshore and offshore characterisation and with regard to terrestrial characterisation. Terrestrial characterisation sets supplied for areas adjacent to Pilot Area A will be uploaded and abutted to marine and intertidal characterisation for comparison.
- 6.5.16. In the light of the above comparison, any required revisions of marine and coastal polygons and attribution to Types will be undertaken. It is anticipated that this process may take several iterations. The draft method Statement and User Manual is likely to undergo continuous updating and development during this process.
- 6.5.17. The methodology will continue to evolve through the main phase of characterisation. Consequently, WA will sample polygons to assess consistency of approach and make changes as necessary.
- 6.5.18. Methodological developments will be incorporated in a revised version of the Method Statement and User Manual. Illustrations of characterisation reflecting various types and sub-types will be selected to accompany the written definitions.

## 6.6. MAPPING ISSUES

- 6.6.1. Although sharing certain challenging attributes with coastal archaeology, it also has to be recognised – from the point of view of characterisation – that the maritime historic environment has additional complexities. First, and excepting relatively fixed structures such as beacons, buoys, perches, harbour works and so on, the medium that bears maritime activity – the water column and the sea's surface – generally retains little visible trace of that activity for more than a few minutes or hours. Furthermore, the seabed – which can retain traces and sometimes preserves them to an incredible degree – was not generally the intended sphere of action of the people whose relics are so preserved. With the exception of benthic fishing and various extractive activities targeted on the seabed, the intentionality between human action and its material result, which is the core of archaeological endeavour, is indirect and disrupted so far as seabed remains are concerned. Wreck sites, and patterns of wrecks, on the seabed in the present are not necessarily reliable indicators of past usage. Considerable care has to be taken in acknowledging both the cultural and natural formation processes that scramble the meaning of the ships, of which only some became wrecks. Again, the challenges to characterisation are substantial.
- 6.6.2. The sea and its use are resonant with cultural meaning. Even in the present, when society is distanced from and yet still highly dependent upon the sea, a multiplicity of rich associations are made by the public in all their variety. Characterisation, as proposed in English Heritage's initiative, has far greater potential to capture and represent that cultural vitality than more traditional techniques of heritage conservation. At the same time, the technologies that enable characterisation could have an unintentionally deadening effect if they reduce humanity to polygons and attributes. Consequently, Wessex Archaeology will seek to develop methodologies for incorporating additional forms of historical cultural expression relating to Pilot Area A within its mapping and characterisation by exploring the development of a multimedia facet to accompany the GIS. This would allow the incorporation of data such as photographs, personal accounts and artistic representations which could be looked at, listened to or read through CD- or web-based multimedia.
- 6.6.3. As at sea, rights of access and usage in intertidal areas and on coastal land are often partial, non-exclusive, and not necessarily territorial. Neither access and usage, nor the physical qualities of such areas, lend themselves to marked boundaries, the relics of which are to be found in terrestrial landscapes as mapped or mapable features. The likely complexity of past uses and present survivals, and the white space of historic mapping, will be a considerable challenge to seascape characterisation.
- 6.6.4. As set out above, the sources upon which characterisation of Pilot Area A is based are likely to be complex, of indirect application, and provisional. It is therefore fundamental to the approach proposed by WA that the layers of data supporting characterisation are structured with as much care and transparency as the resulting characterisation of layers. WA will avoid conflating these supporting datasets where such conflation may disguise assumptions that, in the light of further work, become untenable. The supporting layers are likely to fall into two main groups, namely Present Seascape Datasets and Past Seascape Datasets. The distinction between layers will be rigorous; for example wrecks sourced from the UKHO wreck index will be ordered as a Present Seascape Dataset, because such wrecks are manifest as

seabed features in the present. In contrast, casualties (recorded losses) sourced from the NMR will be ordered as a Past Seascape Dataset, because casualties represent events in the past which have at present no known manifestation on the seabed.

- 6.6.5. While the supporting datasets may be numerous and heavily structured, WA intends that the resulting characterisation layer(s) be simple, to facilitate their routine use by archaeologists, coastal managers and others. It is currently anticipated that each HLC polygon will be ascribed to one or more Present Character Types (with Descriptions), to reflect the dominant uses and processes currently pertaining to the polygon, and the elements of the historic environment known or likely to survive within the polygon. Further, each HLC polygon will be ascribed to one or more Previous Character Types (with Descriptions), to reflect the kinds of usage and processes that have occurred within the polygon in the past. Both the Present and Previous Character Types will be supported by (secondary) fields summarising the factors taken into account in ascribing them to Types. These factors will encompass the sea surface, the water column, and the seabed. Where relevant, these factors will be accompanied by from-to fields, in order to represent sequences of different character and to enable temporal (period-based) queries.
- 6.6.6. Based on an analysis of the combined effect of Present Character Types and Previous Character Types, each HLC polygon will be ascribed to a single Historic Seascape Character Type, with a Description, the Types belonging to broader Groups. Each ascription of a Type – Present Character, Previous Character and Historic Seascape Character – will be accompanied by a confidence rating and by audit (compiler and time/date) details.
- 6.6.7. In order to facilitate mapping of items referenced only by place-names or descriptions – as is often the case at sea – WA will also develop a polygonised place name map for Pilot Area A, bearing in mind that place-names at sea often denote major physiographic features such as banks and channels. The map and its associated database will include provision for hierarchical relationships between place-names, and variations on names as well as the preferred name. The place-name polygons will offer an additional spatial mechanism for accessing and querying the datasets underlying characterisation. It is anticipated that by attributing Present and Previous Character Types to place-name polygons, WA will achieve the first iteration in defining HLC polygons.
- 6.6.8. It is noted that many terrestrial HLC projects have used a simple flat-file data structure (a single attributes table held within the GIS software) rather than a GIS underpinned by a relational database. WAs review of methodologies will assess the relative benefits and development difficulties associated with developing GIS with relational capabilities.
- 6.6.9. It is also noted that terrestrial HLC projects have also made extensive use of abbreviations to define characterisation terms and to speed data entry. WAs review of methodologies will assess the relative benefits of abbreviations versus full-terms for end-users who may not be overly familiar with marine terminology.
- 6.6.10. WA will develop a data model and structure for GIS and database elements of the system that takes into account the typologies developed for the project, and the

supporting layers and secondary attributes that are necessary for assigning these types to sea areas.

- 6.6.11. The project will be run via within the parameters defined by the Project Management Group (PMG), supported by an advisory group. Potential interested parties have been identified for the project and invited to join a Stakeholders Group (SG). Further interest groups may be identified via feedback from the Internet. In order to address the issues of data management and methodological development arising from the project, several seminars will be arranged to gather feedback from stakeholder.

## **6.7. PRODUCING A DRAFT METHODOLOGY**

- 6.7.1. On the basis of secondary sources and digital datasets, WA will review the range of present-day seascape character and usage, in order to develop a methodology for producing polygon layers and a series of preliminary character layers reflecting modern sea use, historic sea use and environmental conditions.
- 6.7.2. On the basis of the preliminary lists of present-day and previous character and usage, and in the light of the key questions referred to above, a typology will be developed of Present Character Type and Previous Character Type. Each Type will be given a scope note, and non-preferred alternative terms will be listed. Provision will be made for Types to be group, or for some other form of hierarchical relationship between types to be developed.
- 6.7.3. The typology of Historic Seascape Character Types will be accompanied by scope notes, and will include provision for Groups and Sub-types or other hierarchical arrangement.
- 6.7.4. A series of key questions reflecting the anticipated applications of the GIS are being developed to gauge the practical application of the results of seascape characterisation. Key questions are likely to fall into four categories, as follows:

### **Development Control**

“Aggregate extraction is proposed for Liverpool Bay. In terms of likely impacts on the historic environment, what areas should be avoided?”

“XXX are seeking curatorial advice for the proposed XXXX offshore wind farm. What is the potential of the historic environment within the development’s proposed footprint? What advice should be given to the company regarding the scope of environmental assessment and mitigation?”

### **Management**

“How well does the proposed marine protected area match key areas of marine historic environment?”

“Where were the historic fisheries located, and how well do they match the modern pattern of trawling activity?”

### **Research**

“There are XX documentary references to medieval shipping losses in the Dee Estuary. Are these losses likely to be focussed on navigational hazards that are known today?”

“What does HLC indicate about the potential for developing models of wreck formation processes at regional scales?”

**Raising Public Awareness**

“Can marine and intertidal HLC help demonstrate the importance of salt production as a local industry in the 18th century?”

**6.8. TESTING**

- 6.8.1. WA will prepare three case studies within Pilot Area A to assess the benefits of maritime HLC to curatorial decision making.
- 6.8.2. Although the impetus for the Pilot Project is assistance with curatorial decision-making linked with regard to marine aggregate extraction, the characterisation may highlight processes, activities and impacts requiring more urgent intervention. WA will undertake to highlight such cases in subsequent reporting.
- 6.8.3. Following the completion of the project GIS, an overlay of proposed aggregate extraction areas will be viewed in conjunction with characterisation layers to assess the inferences that can be made and the degree of confidence that can be ascribed to the results of characterisation.
- 6.8.4. A Method Statement and User Manual will be developed to account for the design decisions made and the methodologies and recording practices to be applied. It is anticipated that the draft Method Statement and User Manual will have a dual function as both documentation of the system and training manual. The first draft will be a working document designed to be annotated, revised and enhanced with examples (illustrations of characterised areas) as the project progresses.

**7. OUTREACH**

- 7.1. WA will devise a publicity schedule for *England's Historic Seascapes*. The schedule will review the timings of key opportunities such as the annual IFA conference, CoastNET seminars, local initiatives promoted by external partners, and special activities planned for the 2005 Year of the Sea. The level of possible and desired participation (e.g. presence; presentation; provision of poster sets) will be established through consultation with the PMG.
- 7.2. WA will also generate a list of key journals and newsletters, both nationally and in Pilot Area A, and obtain their editorial guidelines and deadlines. WA will ascertain whether any forthcoming issues are to have themes that could accommodate articles or news items about *England's Historic Seascapes*.
- 7.3. WA will prepare text and illustrations that can be displayed as a series of posters at seminars and conferences. The material will set out the aims, objectives, methods and results of the project, and draw attention to the project web pages as a source of further information.
- 7.4. A project webpage has been developed by WA announcing the start of the project, together with its aims and objectives. The page includes links to the English Heritage website and such other websites as are suggested by Project Management Group. Further web pages will be developed and launched as the project progresses and can

be accessed at <http://www.wessexarch.co.uk/>. Regular progress reports will be posted on the web throughout the project.

- 7.5. WA will prepare an interim note on the Pilot Project for publication in the primary scholarly journal identified in the Publicity Plan. The article will set out the objectives, methods and results.
- 7.6. WA will prepare text and illustrations for articles in journals and popular publications identified in the Publicity Plan. Articles will set out the objectives, methods and results of project.
- 7.7. The programme of talks and lectures is being developed to inform interest groups of the project's development and to disseminate results. WA will attend seminars after the end of the project where commitments have been agreed in advance.

## 8. REFERENCES

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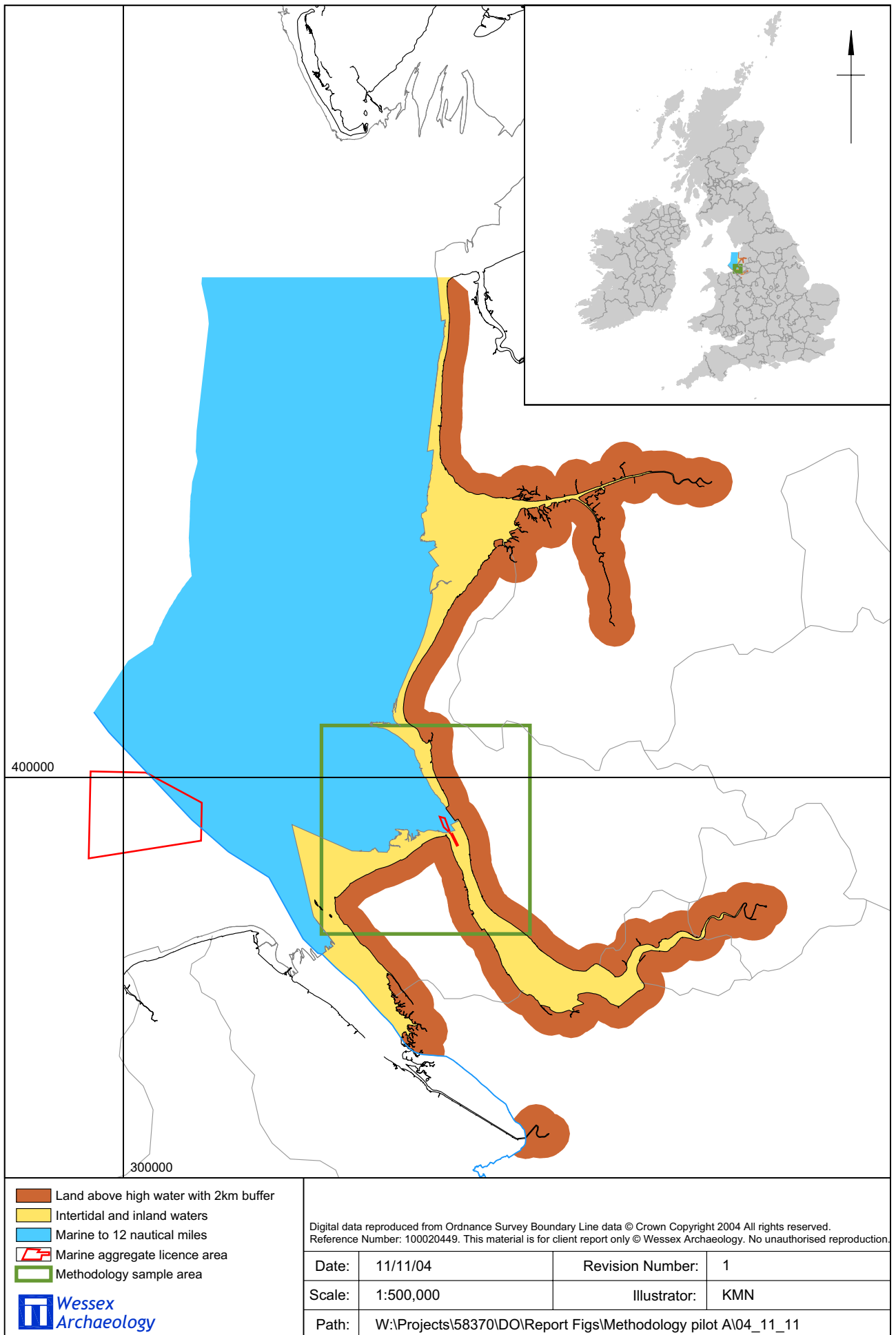
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Pilot Area A

Figure 1



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