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Historic Seascape Characterisation South West Peninsula

Section 2
Applications Review and Case Studies

Historic Environment Projects

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CORNWALL COUNCIL

ENGLISH HERITAGE

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Report Structure

The project report for the South West Peninsula Historic Seascape Characterisation (HSC) is divided into three sections for ease of use. The first section documents the project's implementation. This, the second section, contains the Application Review and Case Studies, while the third contains the HSC Character Type text descriptions.

This document comprises Section 2 of the South West Peninsula Historic Environment Characterisation Project Report.

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The Project Manager was Charles Johns and the Project Officers were Peter Dudley and Megan Val Baker, in the early stages of the project the HSC Advisor was Bryn Tapper.

The views and recommendations expressed in this report are those of Historic Environment Projects and are presented in good faith on the basis of professional judgement and on information currently available.

Freedom of Information Act

As Cornwall Council is a public authority it is subject to the terms of the Freedom of Information Act 2000, which came into effect from 1st January 2005.

Historic Environment, Cornwall Council is a Registered Organisation with the Institute for Archaeologists

Cover illustration

Penzance Harbour (Cornwall Council)

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1 Introduction

This Applications Review is designed to identify and demonstrate some of the capabilities of Historic Seascape Characterisation (HSC) and its potential for application to a range of planning and outreach scenarios. The review seeks to illustrate how HSC can enable the historic character of our present coastal and marine seascapes to play its full part in shaping culturally distinctive and comprehensible seascapes for the future, using two case-study scenarios to support the discussion and illustrate some particular roles for HSC in the preparation of local government maritime strategies and in processing licenses for offshore aggregates related extraction.

2 Background

2.1 HLC and HSC

Characterisation is designed to be a constructive and effective method for informing the management of change in the whole environment. It can provide frameworks for informed conservation and management at many levels and scales, from local to national, complementing rather than replacing methods of selective designation and protection but capable of giving context to designation decision-making too where that is appropriate.

Historic Landscape Characterisation (HLC) and Historic Seascape Characterisation (HSC) share common principles and are based on a process of creating a comprehensive and generalised, largely neutral and descriptive understanding of the cultural and historic character of an area or a topic. The approach involves bringing together existing, often unconnected, knowledge, normally at a high level of generalisation, to create a broad understanding of the essential characteristics of parts of the historic environment such as the townscape, the rural landscape, the military heritage, or coastal and marine seascapes (Clark *et al* 2004; Fairclough 2007a; Hooley 2011, 2012).

Focusing at the scale of the landscape/seascape carries many particular advantages. Among these it:

- Promotes new perspectives relating to the individual records of the historic environment;
- Enables and justifies a proactive approach focussing on historic processes and extending beyond the limits of sites already known; and
- Corresponds with the scale of analysis already used by most agencies and spatial planners concerned with the natural environment, allowing the historic environment to take its place within an integrated approach to sustainable environmental management.

The HLC methodology has now been implemented across almost all of England's land area and in multiple contexts. Much coverage is by county-wide HLCs but there are also urban HLCs of towns and the larger metropolitan conurbations, while others focus on the areas of AONBs and National Parks.

The National Heritage Act (2002) extended English Heritage's statutory curatorial responsibilities to English territorial waters. English Heritage's initial policy for the transition of responsibility under the 2002 Act was set out in '*Taking to the Water: English Heritage's Initial Policy for the Management of Maritime Archaeology in England*' (English Heritage 2002). In its priorities for research and development, this policy document identified the need for 'national evaluation studies to characterise poorly recorded or little understood elements of the seamless maritime cultural landscape. Such studies are a proactive way of identifying sites and site types or related activities

and industries likely to merit protection and management, including sites and landscapes not currently represented in the record'.

Historic Seascape Characterisation fulfils that need for characterisation, with comprehensive coverage across the marine cultural landscape, contextualising its special features and enabling the better-informed management of the whole marine historic environment.

English Heritage also aims to broaden, enhance and make more widely available knowledge about our maritime culture, whether it is in the form of discrete remains such as shipwrecks, harbours, coastal defences, fish-traps, etc or extensive areas of seascape and landscape. In order to relate to our maritime cultural heritage and understand how it has shaped our perceptions today it is necessary to identify and understand the imprints of maritime activity in the coastal and marine environment. This needs to be done in a way which integrates seamlessly with our understanding derived from terrestrial investigations and initiatives.

Sharing common principles, HSC is designed to integrate fully with the national land-based HLC programme. A nationally applicable method for Historic Seascape Characterisation (HSC) was developed through pilot projects, method-review and consolidation, then fully documented in 2008 in a Method Statement (Tapper 2008) and Report (Tapper and Johns 2008). Project-based implementation of the HSC method at a strategic level to England's coastal zone and the English inshore and offshore regions will, by early 2014, complete national coverage by HSC, making it available to inform its range of coastal and marine applications.

By the start of this HSC project, that national HSC implementation covered approximately 60% of England's coasts, inshore and offshore regions by five ALSF-funded HSC projects (Merritt and Dellino-Musgrave 2009; Oxford Archaeology South 2011; Dagless and Dellino-Musgrave 2011; Taylor et al 2011; Newcastle University 2011). Together these offered a substantial body of practical experience to complement the HSC Method Statement as guidance to future projects. Meanwhile, the Method Statement itself, while maintaining its approach and overall structure, has undergone some inevitable updating in the light of the same experience to produce a revised working draft (Tapper and Hooley 2010), reflecting feedback from that practical implementation and the major ongoing developments in marine planning contexts. The South West Peninsula and adjacent inshore and offshore regions was one of the three major areas commissioned in 2012 to complete England's national coverage by strategic level HSC.

2.2 UK policy and legislative frameworks

2.2.1 UK Coastal and Marine Policy 1990s to 2009

Since the 1990s, EU and UK Governments have sought better understanding of coastal and marine environments and their processes to provide the necessary information base for prospective strategic planning and long-term management of the marine environment.

From the late 1990s, European and UK legislation for the management of coastal and marine environmental resources has focused increasingly on an integrated spatial approach to marine planning. A series of reviews and reports dating from the Marine Stewardship Report '*Safeguarding our Seas*' in 2002 and the '*Seas of Change*' Government response in 2003 indicated that a new approach to managing activities in the marine environment was needed. In particular, better integration and more effective spatial management of conflicting pressures were identified as prerequisites for conservation and sustainable development and have subsequently become crucial aspects of delivering the UK Vision for the marine environment characterised by '**clean, healthy, safe, productive and biologically diverse oceans and seas**' (UK Government *et al* 2009).

2.2.2 The Marine and Coastal Access Act 2009

The Marine and Coastal Access Act was enacted on 12 November 2009 (UK Government 2009). It provided for a new system of marine planning to fulfil the UK Government's marine objectives and priorities for the future, and directed decision-makers and users towards more efficient, sustainable use and protection of our marine resources. *The Coalition: our programme for government*' was published in May 2010 and in it the present government confirmed that it would take forward the Marine and Coastal Access Act and make sure its conservation measures are implemented effectively.

The Act's key features were:

- Establishment of the Marine Management Organisation (MMO);
- Preparation of a Marine Policy Statement (MPS);
- Provision for a Marine Planning System;
- Provision for a streamlined marine licensing system;
- Designation of Marine Conservation Zones (MCZs);
- Provision of the coastal access duty.

The MMO started work on 1 April 2010, and are delivering UK marine policy objectives for England's inshore and offshore regions through a series of statutory Marine Plans and other measures. The Marine Policy Statement was published on 18 March 2011 (UK Government 2011) and is based on the High Level Marine Objectives for the marine planning system which were set by the UK Government (UK Government 2009b). In April 2011 MMO embarked on a programme of Marine Plan preparation for the 11 Marine Plan Areas, to be completed in 2021, with Seascape Character Assessment (SCA) being used to inform those Marine Plans.

Historic Seascape Characterisation is designed to assist the delivery of a long-term and sustainable system for managing our marine environment, as expressed within the Marine Policy Statement, by providing a strategic scale characterisation of human activity across England's inshore and offshore regions. The resulting HSC has relevance well beyond heritage management, informing a broad range of marine planning applications concerned with creating sustainable and distinctive future seascapes and coastal landscapes. The relevance of HSC to the implementation of the Marine and Coastal Access Act 2009 is discussed more fully below in section 3.2.3.1

2.3 European frameworks and legislation

European marine planning policy closely mirrors the UK approach to seeking more sustainable management of the seas (EC 2007a; EU 2008; Defra 2008), giving a broader EU context for area-focussed GIS databases to convey historic cultural character at a strategic level (Hooley 2012).

The key policy documents which reflect EU marine planning direction include the EC Integrated Maritime Policy (EC 2007a) and the Marine Strategy Framework Directive (EC 2008) which provides the environmental pillar in support of the Policy.

The Action Plan for the EU Integrated Maritime Policy (EC 2007b), seeks to coordinate the management of maritime activity using common principles for marine spatial planning and ICZM to achieve an integrated approach to meeting economic, social and environmental commitments. This approach is fundamental to achieving sustainable development and meeting the aims of the Marine Strategy Framework Directive.

EU Maritime Policy (EC 2007a, 3.2.3), recognises the need for comprehensive and interoperable mapped information to optimise the effectiveness of marine spatial planning; the outputs from the HSC programme are fully in accord with that. It also recognised the need for integration and involvement of coastal communities in the

sustainable management of the marine and coastal environment (EC 2007a, 4.3). In this regard, the HSC Character Type texts will provide an excellent base from which to build a flexible and accessible resource for engaging coastal communities.

The Marine Strategy Framework Directive aims to provide the framework for achieving good environmental status for Europe's marine environment by 2020 (EC 2008), tackling the deterioration of Europe's marine environment, the poor knowledge base about that environment and the institutional barriers to addressing these problems that exist at European level.

Implementation of the European Landscape Convention (ELC) which came into force in the UK on 1 March 2007 highlights the Council of Europe's recognition of the need to take account of cultural landscape during the development of EU marine strategy. (www.coe.int/t/e/Cultural_Cooperation/Environment/Landscape/)

The ELC is underpinned by a requirement 'to recognise landscapes in law as an essential component of people's surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity' (*ibid*, Article 5). In emphasising the central roles of human perception in defining landscapes and of human activity in creating them, the ELC embodies concepts already at the heart of all HLC and HSC work (*Conservation Bulletin* **47**; Clark *et al* 2004, Hooley 2007).

English Heritage published an Action Plan for implementing ELC (English Heritage 2009), currently under review for the 2014-19 period (D Hooley, pers comm). This seeks better recognition of the historic dimension of landscape in the marine zone through the deployment of HSC and the development of new legislation and procedures.

3 Applications Review

3.1 Introduction

Historic Seascape Characterisation (HSC) is designed to inform the management of change affecting the coastal and marine areas of our landscape through the provision of an archaeologist's perspective of the historic dimension of their character. It uses the same principles and complements the application of Historic Landscape Characterisation (HLC) to terrestrial landscapes.

The application review's discussions below consider how the HSC can inform the following areas:

- Management and planning.
- Data management.
- Research.
- Outreach and education.

3.2 Management and planning

3.2.1 Landscape and seascape management

The current HSC programme was designed to meet English Heritage's requirements to inform the management of change in the marine environment on multiple scales through a broad range of applications.

English Heritage is the UK Government's statutory adviser on all aspects of the historic environment, including the English area of the UK Territorial Sea, as provided for under the National Heritage Act 2002. English Heritage is an Executive Non-Departmental Public Body sponsored by the Department for Culture, Media and Sport (DCMS) and reports to Parliament through the Secretary of State for Culture, Media and Sport. In the delivery of its duties English Heritage works in partnership with central government departments, local authorities, voluntary bodies and the private sector. It aims to carry out its duties within the framework of a set of '*Conservation Principles*' (English Heritage 2008). These principles can be summarised as follows (English Heritage 2010):

- The historic environment is a shared resource;
- Everyone should be able to participate in sustaining the historic environment;
- Understanding the significance of places is vital;
- Significant places should be managed to sustain their values;
- Decisions about change must be reasonable, transparent and consistent; and
- Documenting and learning from decisions is essential.

The management of change in the historic environment connects with a broad range of policies and legislative structures, designed to meet the needs of the UK Government and the EU to understand the impacts of pressures on the marine environment, assessing whether those impacts are of significance, and evaluating alternative management strategies. Those needs are clearly expressed in the MMO's public information about marine planning.

http://www.marinemanagement.org.uk/marineplanning/about/index.htm

But English Heritage's roles in the management of change extend well beyond the negative and concerns over impacts; they include using an understanding of historic character of places to inform the positive management of change, retaining cultural distinctiveness and legibility for future generations and quality of life.

The historic environment extends everywhere and up to the present: it is a dimension of the whole, as is its character. With that comprehensive expression, it is inevitable that management of the historic environment also falls within the scope and remit of many other policy makers than English Heritage, other curators of the marine and coastal environment as well industrial stakeholders through the implementation of UK and EU laws, Directives, agreements and policies, such as the EIA Directive, the European Landscape Convention (Council of Europe, 2000) and the Marine and Coastal Access Act 2009 (UK Government 2009; Defra 2011). The applications review discusses the potential roles of the HSC in fulfilling their objectives too.

The National HSC Method Statement (Tapper 2008, Tapper and Hooley 2010) details the historic characterisation principles underpinning HSC and shared with Historic Landscape Characterisation.

The HSC methodology allows for the interpretation of seascape character to take place, combining the sensory and the cognitive, across different levels of the marine and coastal environment, enabling an understanding, for example, of the dominant cultural processes taking place in the water column, to be differentiated from or compared to those taking place on the sea surface. The assessment of historic character at each level allows the user to tease out the complex relationships between those tiers in respect of the cultural and historic activities and their material imprints.

Historic characterisation approaches, including HSC, have found considerable application in respect of the European Landscape Convention (ELC), one of the Council of Europe conventions. The ELC was adopted on 20 October 2000 in Florence (Italy), entering into force in the UK on 1 March 2007. It concerns the protection, management and planning of European landscapes and fosters European co-operation on landscape issues. It was the first international treaty to be exclusively concerned with all dimensions of the European landscape, whether considered cultural or natural. Both HSC and HLC substantially contribute towards fulfilling UK commitments under the Convention (Council of Europe 2004, Treaty Series no. 176).
(http://www.coe.int/t/dg4/cultureheritage/Conventions/Landscape/

The ELC defines landscape as '*an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*' (Council of Europe 2000, Article 1): the recognition of landscape as a matter of people's perception and of the human cultural roles in creating it has considerable resonance with historic characterisation approaches (*Conservation Bulletin* **47**; Clark *et al* 2004; Hooley 2007; 2011; 2012). The ELC also recognises landscape as a reflection of the diversity of shared cultural and natural heritage, and a foundation of their identity (Council of Europe 2000, Article 5).

The ELC requires us to engage in the understanding and management of our dynamic landscapes everywhere in a manner which recognises them to be as diverse as the human perspectives which consider them and the complexities of cultural and natural forces apparent to those perspectives. Again, the concepts underpinning HLC and HSC strongly mirror the principles upon which ELC is founded.

The scope of the ELC specifically includes 'marine areas' as well as 'land' and 'inland water' and, in common with HLC and HSC, it takes a holistic approach, concerning 'landscapes that might be considered outstanding as well as everyday or degraded landscapes': the commonplace and poorly regarded as well as the special (Council of Europe 2000, Article 2).

The ELC requires each party where it is in force 'to identify its own landscapes throughout its territory' and 'to analyse their characteristics' (*ibid*, Article 6): those are fundamental tasks of any HLC and HSC and the applications which HLC/HSC are designed to inform (e.g. Clark *et al* 2004; Fairclough 2007a; Hooley 2012) are directly aligned with the requirements in the ELC to analyse 'the forces and pressures

transforming [those characteristics]' (Council of Europe 2000, Article 6) and 'to establish and implement landscape policies aimed at landscape protection, management and planning' (*ibid*, Article 5).

Historic characterisation approaches, including HSC, provide effective tools giving that necessary comprehensive landscape understanding, capable of accommodating a range of perspectives and queries beyond those of historic environment specialists, and inter-operable with natural environment datasets (Fairclough 2002; 2007a and b). In applying such approaches to England's coastal and marine zones, HSC makes a substantial contribution towards meeting our commitments under the ELC (Hooley 2007; 2011; 2012).

3.2.2 Meeting English Heritage management requirements

3.2.2.1 Policy requirements

English Heritage and local planning authorities represent a first point of contact for advice on many proposals for change affecting the historic environment. The provision of that advice is dependent on a sound information base from which to formulate it.

The National Heritage Act (OPSI, 2002) extended English Heritage's statutory curatorial responsibilities to the 12nm limit of England's share of UK Territorial Waters. Across most of that area, English Heritage is the sole statutory advisor regarding the historic environment. Beyond that, to the full extent of UK Controlled Waters, English Heritage's Marine Planning Unit also provides historic environment advice on a 'without prejudice' basis to Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) of plans, programmes, licence and development proposals as required by EU Directives.

Historic Seascape Characterisation contributes substantially towards the needs of English Heritage to manage and advise on the marine historic environment in the following respects:

- *'Taking to the Water'* (English Heritage 2002) outlined a strategic approach and recommendations for managing maritime archaeology in England. It highlighted the need for an approach which was tailored to the needs of the marine environment to be adopted, beyond the legislative and planning regime regarded as routine in terrestrial heritage. HSC contributes towards that by providing a strategic level framework for its understanding and management underpinned by the same historic characterisation principles as applied on land in HLC.
- National HSC coverage is identified in the '*National Heritage Protection Plan*' (NHPP) as part of the prioritised survey and mapping necessary to address our present poor baseline understanding of marine heritage assets (English Heritage 2011b, Measure 3, Activity 3A1). In contributing to that NHPP Activity, and in its explicit objectives of building understanding of our coastal and marine historic environment, among the wider public as well as professional audiences, HSC also engages directly with Aims 01 and 04 in the English Heritage Corporate Plan 2011-2015 (English Heritage 2011c, 12) and Sub-programme No 11111.240: 'Understanding Place: Historic Seascape Characterisation of English Heritage's SHAPE project framework.
- Providing an evidence base for accounting for the historic environment during marine planning, meeting the requirements of the Marine and Coastal Access Act 2009 and its implementation through the High Level Marine Objectives, the Marine Policy Statement and the MMO's programme of Marine Plan preparation.

- Supporting the development of a European marine planning infrastructure to enable sustainable management and development of the marine environment (EC 2007a and b).
- Meeting the obligations on the UK in respect of the European Landscape Convention (http://www.coe.int/t/dg4/cultureheritage/Conventions/Landscape).
- Contributing towards the implementation of Integrated Coastal Zone Management (ICZM) (Defra 2008) as now embedded within the Marine and Coastal Access Act 2009 and its implementation by the MMO.

3.2.2.2 Marine Planning

Marine and Coastal Access Act 2009

The Marine and Coastal Access Act 2009 initiated a strategic marine planning system intended to clarify our marine objectives and priorities for the future, and direct decision-makers and users towards more efficient, sustainable use and protection of our marine resources. Of particular relevance to the historic environment and HSC is Section 54 of the Act which imposes a duty to keep certain matters under review within the marine plans, described in sub-sections 54 (2) and 54 (5):

'the physical, environmental, social, cultural and economic characteristics of the authority's region and of the living resources which the region supports'.

'the cultural characteristics of the authority's region includes a reference to the characteristics of that region which are of a historic or archaeological nature'.

High Level Marine Objectives

The High Level Marine Objectives for the marine planning system were set by the UK Government, following consultation in 2009 (see UK Government 2009b).

The objectives are driven by an overall vision for 'clean, healthy, safe, productive and biologically diverse oceans and seas'. The objectives have been expressed within the context of the UK's five sustainable development principles:

- Achieving a sustainable marine economy
- Ensuring a strong, healthy and just society
- Living within environmental limits
- Promoting good governance
- Using sound science responsibly

The Marine Policy Statement

The Marine Policy Statement UK (MPS), published on 18 March 2011 (UK Government 2011), was the first part of new system of marine planning being introduced around the UK. It is designed to provide the strategic level policy direction within which Marine Plans are being developed, and sets the direction for marine licensing and other relevant authorisation systems. The Marine Policy Statement UK is the overarching policy framework for the UK marine area. The Marine and Coastal Access Act 2009 gave the MPS a legal effect on decision-making by Public Authorities. This means that licensing (or other authorisation) of activities which affect or might affect the marine areas and enforcement of licensing conditions need to be in accordance with the MPS, unless relevant considerations indicate otherwise.

In respect of 'seascape' the MPS states 'There is no legal definition for seascape in the UK but the European Landscape Convention (ELC) defines landscape as an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors. In the context of this document, references to seascape

should be taken as meaning landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other' (Paragraph 2.6.5.1).

Historic Seascape Characterisation has direct relevance to Section 2.6.6 of the MPS '*Historic environment'*: 'Marine activities have the potential to result in adverse effects on the historic environment both directly and indirectly, including damage to or destruction of heritage assets. In developing and implementing Marine Plans, the marine plan authority should take into account the available evidence, including information and advice from the relevant regulator and advisors, in relation to the significance of any identified heritage assets (or the potential for such assets to be discovered), and consider how they are managed. It should also take into account the historic character of the plan area, with particular attention paid to the landscapes and groupings of assets that give it a distinctive identity'.

The Marine Planning System

The Marine and Coastal Access Act 2009 Section 322 divided UK Controlled Waters into two marine regions: an inshore region (0-12 nautical miles) and offshore region (12 – *c* 200 nautical miles) under each of the four Administrations (England, Northern Ireland, Scotland and Wales). In April 2011 the Marine Management Organisation (MMO) embarked on a programme of Marine Plan preparation for the 11 Marine Plan Areas, to be completed by 2021, with the North West Inshore and Offshore areas to be processed as a single Area (Fig 1).

Marine Plans have relevance to a wide range of issues relating to human activities, their associated infrastructure, and their effects on resources, features and processes in the marine and coastal environment. This gives considerable roles for HSC's deployment in the marine planning system. As a comprehensive area-based database, inter-operable with analogous databases for marine natural processes and expressions, HSC can demonstrate the relationships between historic human activities, cultural processes and the present expressions of the environment, informing our seascape perceptions with a better understanding of the impact of man's activities through time.

In the management of the coastal and marine historic environment itself, HSC conveys the typical historic processes that have borne upon any given area, setting into broader context the known sites of the rare and the special, thereby guiding the development of area-wide conservation strategies and decision-making on the attachment of value, significance and zoning based on archaeological potential. Understanding those typical historic processes through HSC will also allow estimation of the typical suites of material remains likely to be revealed in any given area, of considerable value to those planning development in areas previously poorly explored.

Preparation for first Marine Plans, the East Inshore and East Offshore Areas, began on 1 April 2011. It provided an opportunity for first strategic-level seascape characterisation, applied to those East Marine Plan Areas as a rapid pilot project for Natural England's developing approach to Seascape Character Assessment (URS/Scott Wilson 2012).

The second round of Marine Plans to be prepared by the MMO cover the South Inshore and Offshore Plan Areas (Fig 2), whose preparation commenced early in 2013. The area follows the coast broadly from Folkestone in Kent to Dartmouth in Devon; the inshore boundary terminates at the Mean High Water Mark, although the supporting seascape character assessment considers a wider coastal and terrestrial area of some 40km beyond this (MMO 2013a, 1, fig 1).

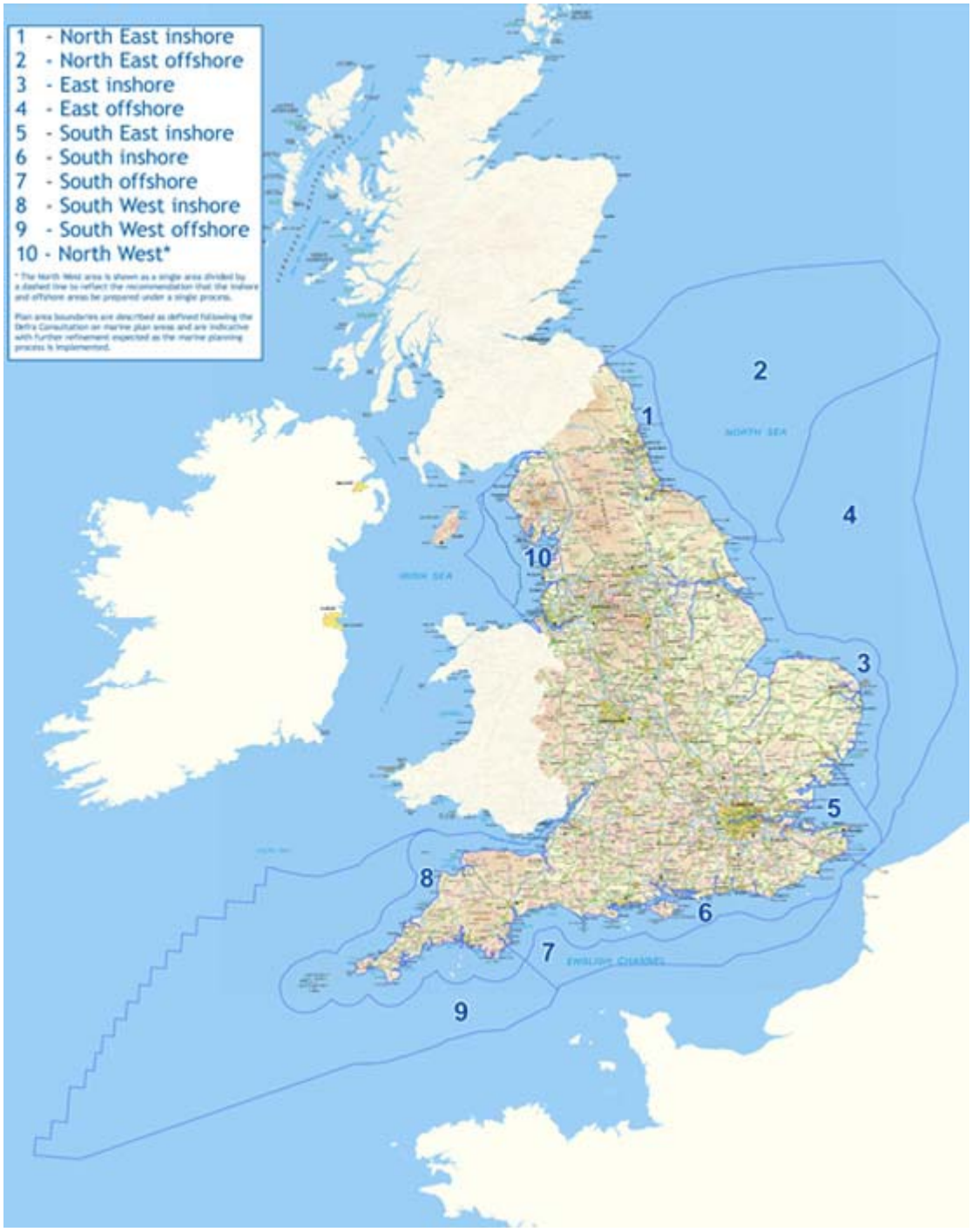

Fig 1: The ten proposed Marine Plan Areas (contains Ordnance Survey and UK Hydrographic Office data. © Crown copyright and database rights. Marine Management Organisation)

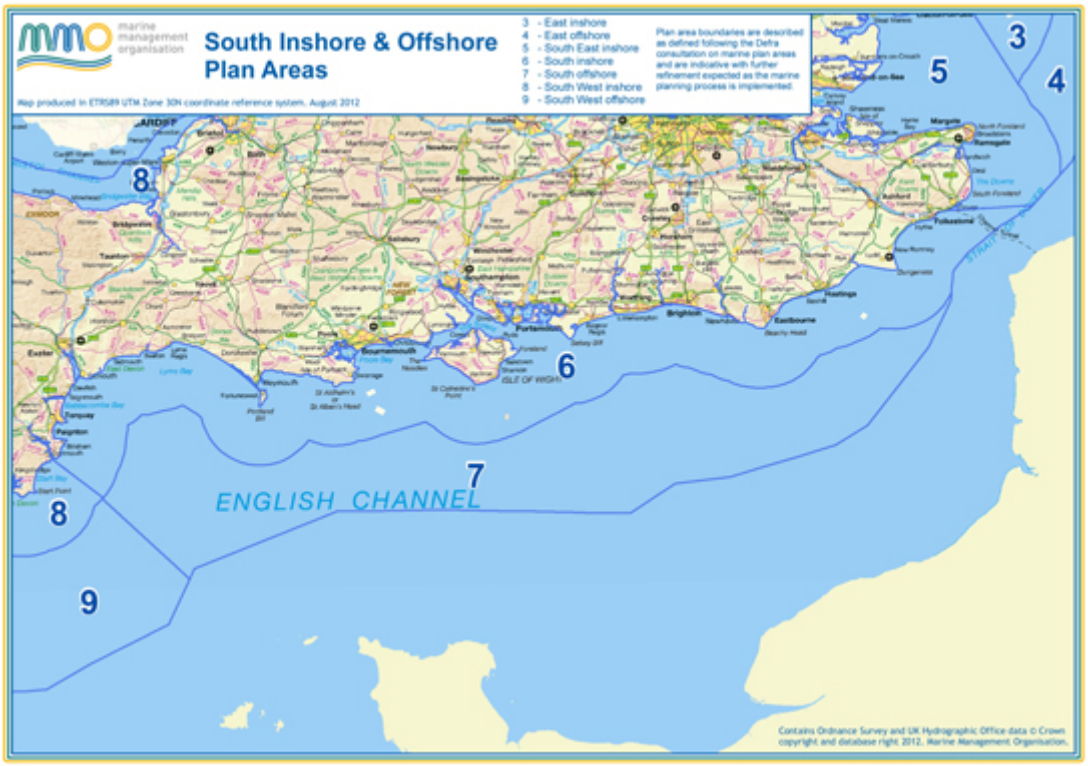

Fig 2: The South Inshore and Offshore Plan Areas (Marine Management Organisation)

Natural England's '*An Approach to Seascape Character Assessment*' was published in October 2012, its stated workflow including both HLC and HSC as core datasets in the Stage 2 Desk Study (Natural England 2012, fig 3). The MMO have indicated that this approach will guide future seascape character assessment for Marine Plan preparation, with the Seascape Assessment for the South Marine Plan Areas as the first to apply that approach (MMO 2013a).

The Seascape Assessment is divided into two strands 'Character Assessment' and 'Visual Resource Mapping'. The methodology for the Character Assessment has paid attention particular attention to the national approach document developed by Natural England and also English Heritage's work in developing a national method for HSC. The lead officers from Natural England and English Heritage responsible for these two national approach documents were members of the project's Steering Group and helped inform the method. This approach taken to the Character Assessment will form the basis of the approach to future strategic-scale character assessments in other marine plan areas around the English coast (MMO 2013a, 62).

The area-based character assessment provided by HSC was well placed to provide baseline archaeological and historical evidence for input into marine plan preparation. Accordingly, in 2013 the data outputs from the South West Peninsula HSC project, the Hastings-Purbeck HSC project and the Thames Estuary and Kent HSC project were used to inform the Character Assessment of the South Marine Plan Areas (MMO 2013a, fig 11).

3.2.2.3 Development control

The National Planning Policy Framework

The Department for Communities and Local Government published the National Planning Policy Framework in 2012 setting out Government planning policies for England and replacing the former Planning Policy Guidance (PPG) 16 and 20, and Planning Policy Statement 5 (PPS5) with immediate effect.

The NPPF is an important part of the government's reforms to make the planning system less complex and easier to understand. It sets out the Government's planning policies for England and how they are expected to be applied (Department for Communities and Local Government 2012, section 1, paragraph 1).

The NPPF states that the purpose of the planning system is to contribute to the achievement of sustainable development which has three dimensions: economic, social and environmental. These dimensions give rise to the need for the planning system to perform a number of roles: the environment role includes 'contributing to protecting and enhancing our natural, built and historic environment' (Department for Communities and Local Government 2012, section 1, paragraph 7).

The NPPF includes among its core principles the need to 'conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations' (Department for Communities and Local Government 2012, section 1, paragraph 17). 'Landscape' is included among the potential types of 'Heritage Asset' in the definition given in the NPPF Glossary (*ibid*, Annex 2).

Under the NPPF, local planning authorities should make information about the significance of the historic environment gathered as part of plan-making or development management publicly accessible. They should also require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted (Department for Communities and Local Government 2012, section 12, paragraph 141).

The NPPF states that local plans should also be consistent with the NPPF, including those aspects relating to the historic environment, and therefore should include strategic policies to deliver conservation and enhancement of the historic environment, including landscape (Department for Communities and Local Government 2012, section 13, paragraphs 156 and 157).

Plans should set out a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats. In doing so they should recognise that heritage assets are an irreplaceable resource and conserve them in a manner appropriate to their significance. They should take into account: the desirability of putting heritage assets to a viable use consistent with their conservation; the contribution conservation makes to wider sustainability aims; the desirability of new development contributing to local character; and opportunities to draw on the contribution made by the historic environment to the character of a place (Department for Communities and Local Government, 2012, section 12, paragraph 126).

Local plans should also be based on up-to-date evidence about the historic environment (Department for Communities and Local Government, 2012, section 13, paragraph 169). Local and neighbourhood plans should also develop robust and comprehensive policies that set out the quality of the development that will be expected for an area. Such policies should be based on stated objectives for the future of the area and an understanding and evaluation of its defining characteristics. Amongst other criteria, planning policies and decisions should aim to ensure that developments 'respond to local character and history, and reflect the identity of local surroundings and materials' (*ibid*, section 7, paragraph 58).

The NPPF sets requirements about the character of place that can only be implemented by referring to a clear and consistent evidence base about what that character comprises. HLC, and for coastal land areas, HSC too, can offer such an evidence base on the cultural character of place.

Marine Licensing

The new Marine Licensing System for England's Inshore and Offshore Regions was introduced by the Marine and Coastal Access Act 2009 was launched in spring 2011. The MMO is responsible for administering the new licensing system and is also involved in consents for those nationally significant projects which are partly or wholly in the sea or may impact on the marine area and were formerly handled by the Infrastructure Planning Commission (IPC) (Defra 2010b).

In respect of the MMO's marine licensing roles and its need to take account of the historic environment during their execution, HSC provides extensive coverage of areas otherwise containing little point data relating to the more traditionally understood marine historic environment. HSC gives evidence for the historic processes that have shaped a study area and produced the present expressions of its cultural dimension. It also provides an indication of the historic environment potential of any area within it and contextualises other datasets such as the UKHO or English Heritage wreck records, in a similar way to that which HLC has been used in Cornwall to contextualise HER point data (cf Herring 1998).

Environmental Impact Assessment (EIA)

Until April 2011 the Government controlled most development applications in UK waters, for example for marine aggregate extraction, through the non-statutory Government View procedure. This is changing radically as the marine planning system becomes fully implemented and Marine Plans are compiled in line with the provisions of the Marine and Coastal Access Act 2009. However, the marine planning process is bound to observe the requirements of European Community EIA Directive 85/3337/EEC and the European Habitats Directive 92/43/EEC which requires all such applications to be accompanied by an Environmental Statement.

As noted in the *'Guidance on the Historic Environment for the Offshore Renewable Energy Sector*' published by COWRIE (Wessex Archaeology 2007), developers of offshore renewable energy schemes are under the same obligation to undertake EIA as the aggregate industry. The guidance specifies the need to review baseline information as part of this process, recommending a broad study area encompassing sources such as SEAs and Historic Landscape Characterisation (Wessex Archaeology 2007).

The COWRIE Guidance was published before several significant developments affecting landscape and seascape considerations for EIA. Of the various EIA Environmental Statement (ES) input themes, the Guidance's consideration of the historic environment for EIA relates exclusively to the 'Cultural Heritage' input (Wessex Archaeology 2007, 28). It makes brief passing references to 'landscape' at 5.12 but does not note 'Landscape' as a separate environmental theme for Environmental Statement input. Neither does the Guidance make reference to the ELC (ratified by UK in 2007) and while mentioning HLC, it touches only briefly on 'seascape': its publication pre-dated finalisation of the HSC method and only anticipated HSC as a future development. With the ELC now in force in the UK and both HLC and HSC coverage largely completed across England's land, coast and seas, there is ample opportunity now to complement the COWRIE guidance with EIA ES inputs on the historic cultural dimension of the 'Landscape' theme for marine development proposals, informed by use of HLC and HSC accompanied by visual impact assessment. Applying the approach to Seascape Character Assessment (SCA) published by Natural England (Natural England 2012) provides a suitable framework in which this can be achieved.

Such a broader approach, in conjunction with the COWRIE Guidance, would provide a valuable addition in meeting the offshore renewable industry's requirements for information on a regional scale, and is discussed below in Case Study 2 (Section 4.2).

In addition to informing English Heritage's own responsibilities to advise during the production of Environmental Statements, HSC at the strategic level can be utilised by developers as initial baseline information for informing scoping studies, with more detailed HSC assessment as appropriate, as already happens with HLC for some developments on land. In similar manner, HSC can inform curators and archaeological contractors in preparation for desk-based assessments, briefs and evaluations for development proposals such as offshore wind farms, aggregate license areas, coastal defences or harbour developments.

The HSC Character Type text descriptions provide an overview of coastal and marine historic cultural character in a consistently structured format and comprehensible language designed to communicate readily with planners and other specialists. As such, they provide a good basis for providing positive engagement, advice and comment on proposed development and mitigation schemes. For most development proposals it is likely that assessment of a more detailed HSC for the development area will be necessary, probably as a planning requirement but in the interests of the developer anyway to inform their own forward planning for the historic environment considerations their proposed development will generate.

3.2.3 Cross-disciplinary marine environmental management

3.2.3.1 Coastal management

Coastal access

Delivery of the England Coast Path, under the Marine and Coastal Access Act 2009, is governed by a 'Coastal Access Scheme', approved by the Secretary of State. The Scheme is an important document as it sets out the methodology that Natural England must use when carrying out its Coastal Access Duty. It contains the key principles on which their access proposals are based at the local level, and explains how these are applied in each of the main coastal scenarios.

The Act requires Natural England to review the Scheme within three years of its first approval. The first review of the Scheme was completed in March 2013 and the revised version, approved by the Secretary of State on 9 July 2013, is the one now followed by Natural England (Natural England 2013).

Already in place and foreshadowing many aspects of the Scheme's coastal access provision for England, the South West Coast Path is 630 miles/1,105km long and by far the longest National Trail in England (Fig 3). The opportunities for applying Historic Seascape Characterisation to good effect in the national extension of such coastal access are considerable, both for planning the coastal access route and informing the information provision for the route's users. In conjunction with HLC, HSC can highlight the breadth of cultural landscape character through which the route is being planned, provide information on what that character comprises, and help identify key optimal situations where information for route users would be most beneficial in raising awareness of the cultural and historical landscape and seascape through which the route passes. The Character Type text descriptions produced in conjunction with the HSC GIS offer a particularly useful resource in the development of public information for users along the route.

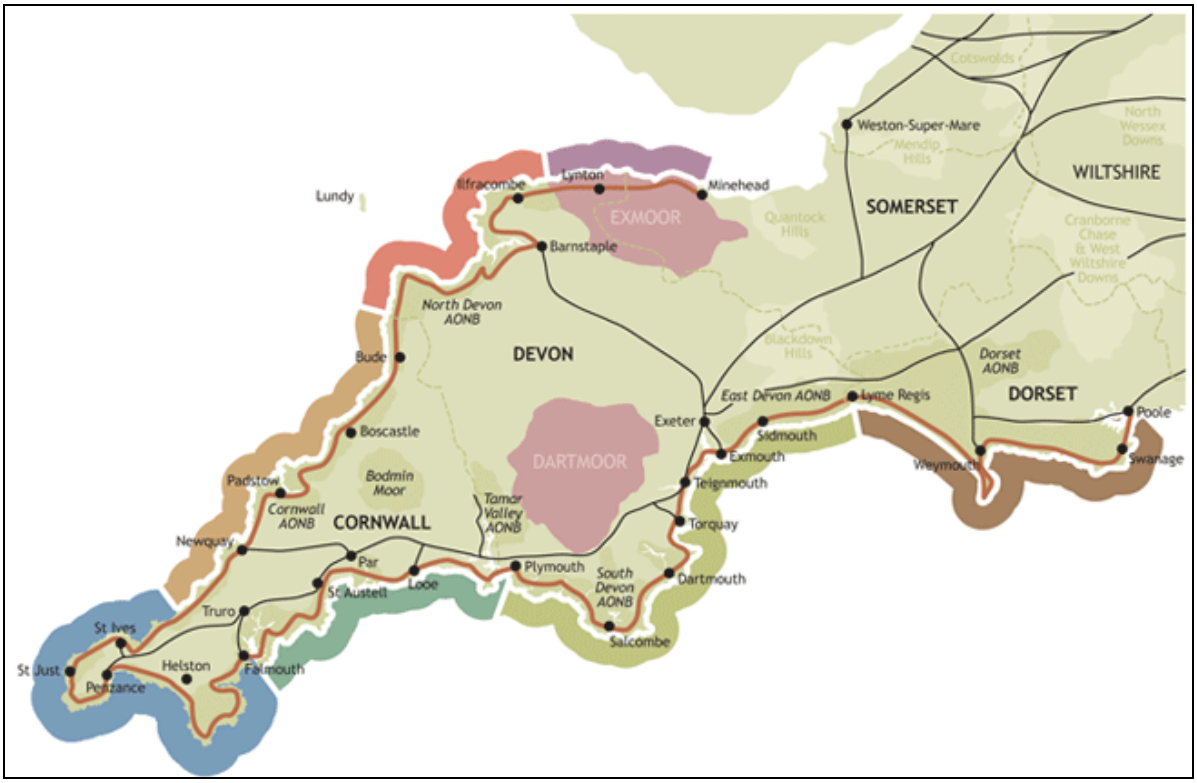

Fig 3: The South West Coast Path

Coastal management frameworks

In addition to the Marine and Coastal Access Act 2009, a broad range of management frameworks exist for coastal, estuarine and inter-tidal areas although they often limit themselves to near-shore areas when making assessments below Mean High Water. English Heritage and in many cases, individual local authorities, are statutory consultees for initiatives towards the implementation and review of Integrated Coastal Zone Management (ICZM) and Shoreline Management Plans (SMPs), both designed to integrate long-term policy decision-making and strategic planning relating to the coastal zones. English Heritage's Rapid Coastal Zone Assessment Surveys (RCZAS) are being undertaken across all of England's coastal areas to enhance the coastal historic environment record and inform such initiatives.

Many of Europe's coastal zones face deterioration of their environmental, socio-economic and cultural resources. Integrated Coastal Zone Management is an approach promoted by the European Commission through the EU ICZM Recommendation (EU 2002) to bring together consideration and management strategies to address the many inter-related biological, physical and human problems presently facing these zones. The approach aims to promote a collaborative approach to planning and management of the coastal zone, within a philosophy of governance by partnership with civil society.

The principles of ICZM are integrated into the Marine and Coastal Access Act 2009 and the current UK Government sees ICZM as something that the implementation of the Act will in itself fulfil, in particular through marine planning.

https://www.gov.uk/government/policies/protecting-and-sustainably-using-the-marine-environment

Historic Seascape Characterisation is the only available source of comprehensive baseline data on the typical historic character of our coastal zone. It is essential to feed evidence on that character into ICZM considerations as it provides a key to understanding coastal distinctiveness, diversity and cultural legibility. HSC is particularly relevant to integrated management of the coastal zone not only in sharing

common principles with HLC but in providing the 'view from sea' to complement HLC's 'view from land': capturing those overlapping perspectives that occur within the coastal zone.

Shoreline Management Plans provides a large-scale assessment of the risks associated with coastal processes and present a long term policy framework to reduce these risks to people and the developed, historic and natural environment in a sustainable manner. SMPs are developed at a strategic level to provide a basis for developing long-term policies for coastal management (McInnes 2003, 50-61).

A second round of SMPs is currently under way to ensure full account is taken of latest information and future challenges. HSC provides a valuable tool for giving context to all aspects of the environment evaluated in the plan. From a heritage perspective, while SMPs currently focus primarily on the risk assessment of individual historic assets along the coast, HSC puts those assessments in a broader context, enabling assessment of threats to the broader character of a coastal landscape as well as to individual sites. In doing so, it is analogous to the consideration of both species and habitats in current SMP ecological assessments.

Defra's revised '*Shoreline Management Plan Guidance'* (Defra 2006) highlights the need for more consistent, integrated datasets, specifically noting the scarcity and inconsistency of data on archaeological potential and value and lack of information on a strategic level (Defra 2006, Appendix B.2). The consideration of historic character types will enable a better understanding of the historic processes that have taken place in a given area, hence suggesting the likely ranges of archaeological features that may be present in accord with those processes, whether or not they have yet been confirmed by actual discoveries. HSC on a broad scale will improve the considered assessment of these issues, with explicit justifications, and provide a context for site-specific assessments of potential during localised investigations.

Defra's 2006 SMP Guidance was supported by '*Shoreline Management Plan Review and the Historic Environment: English Heritage Guidance'*, which notes the role of HLC in understanding the historic dimension of landscapes (English Heritage 2006).

The programme of Rapid Coastal Zone Assessment Surveys (RCZAS), funded by English Heritage, is designed to enhance and update the coastal HER, through a two-phased approach. Phase 1 (Desk-based Assessment) assesses the data available on the character of historic environment within the project area, and potential threats to heritage assets, in order to design a strategy for Phase 2 (Field Assessment) which prioritises areas where heritage assets may be most at risk.

Historic Seascape Characterisation can provide area-based context during the interpretation of available data during Phase 1, supplying a perspective on the typical cultural character of the present coastal environment and the processes that have helped to form it, improving our understanding of the patterns of survival of the rare and the special. It also highlights the processes which determine the suites of site types likely to be present and to survive as yet unrecognised along the coastal and intertidal zones. Working in a complementary manner, HSC provides the landscape-based contextualisation of the coastal HER enhancement resulting from the current programme of RCZAS. The data outputs from South West Peninsula and Hastings-Purbeck HSC projects are now being used to inform the Dorset to Hampshire RCZAS.

3.2.3.2 Designations

Marine Conservation Zones

The Marine and Coastal Access Act 2009 (Part 5) enables Defra Ministers to designate and protect Marine Conservation Zones (MCZs). These are a type of marine protected area, which will exist alongside European marine sites [Special Areas of Conservation (SACs) and Special Protected Areas (SPAs)], SSSIs and Ramsar sites to form an

ecologically coherent network of marine protected areas. Similar schemes are operating in Wales and Scotland and soon in Northern Ireland to contribute to a UK wide network of Marine Protected Areas.

http://www.naturalengland.org.uk/ourwork/marine/mpa/mcz/default.aspx

In a broader sense and of very clear relevance for HSC and HLC, under the Nagoya Protocol for Biodiversity in October 2010, the UK Government made the commitment in its 2020 targets that the global network of Marine Protected Areas (MPAs) will be 'integrated into the wider landscape and seascapes' Confirmation of the Nagoya commitment was made by Defra Minister Richard Benyon MP in January 2011.

http://www.publications.parliament.uk/pa/cm201011/cmhansrd/cm110119/text/110119w0001.htm#11011955000020

As the European Landscape Convention (ELC) is also in force in the UK, under ELC Article 7, its definition of landscape comes into play here for the UK's work in respect of both domestic and international MPAs.

On 21 November 2013 the Marine Environment Minister George Eustace announced the creation of 27 new MCZs and also plans to designate two more phases of MCZs over the next three years to complete the contribution to the network of MPAs. A consultation on the next phase is expected to be launched in early 2015.

https://www.gov.uk/government/policies/protecting-and-sustainably-using-the-marine-environment/supporting-pages/marine-protected-areas

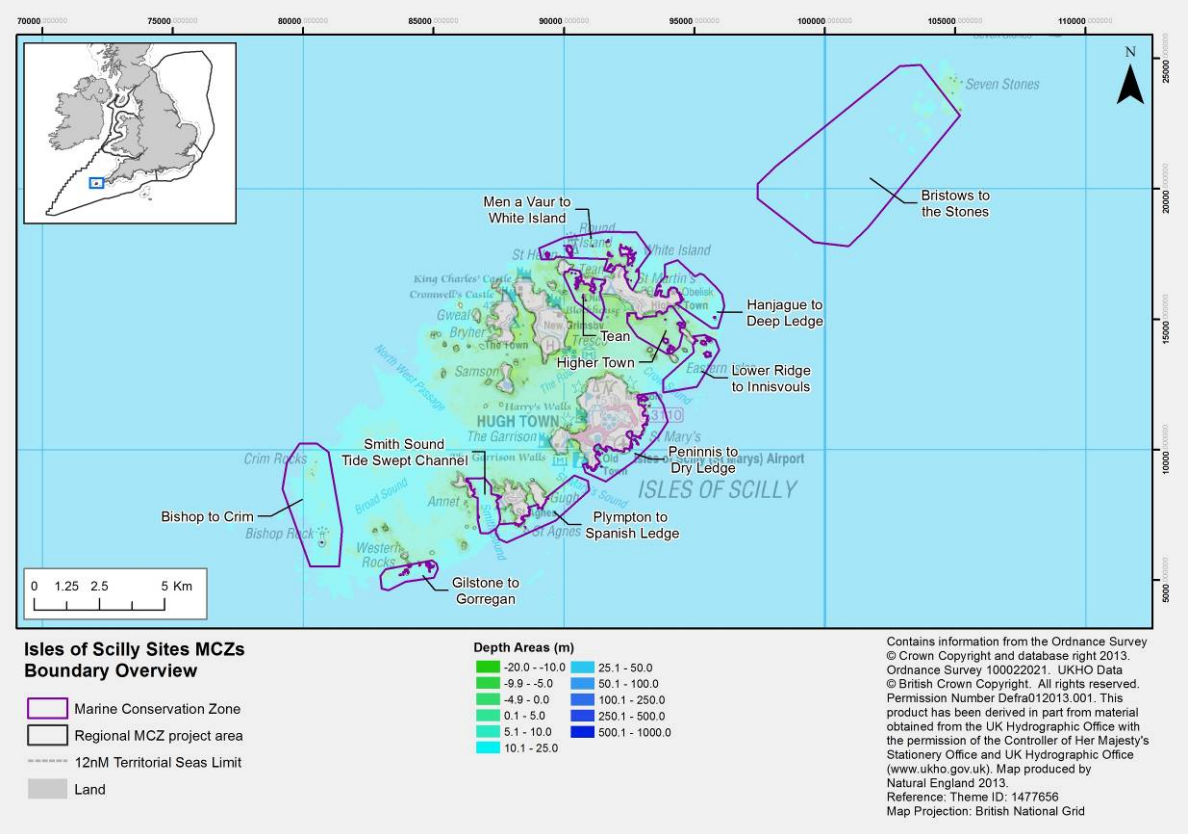

Fig 4: Isles of Scilly MCZ areas (contains, or is based on, information supplied by Natural England)

Thirteen of the 27 new MCZs are in the SW Peninsula HSC project study area: (inshore sites) Chesil Beach and Stennis Ledges, Isles of Scilly (Fig 4), The Manacles, Padstow

Bay and Surrounds, Skerries Banks and Surrounds, South Dorset, Tamar Estuary, Torbay, Upper Fowey and Pont Pill, Whitsand and Looe Bay; (offshore sites) The Canyons, East of Haig Frais and South West Deeps (West).

Historic Seascape Characterisation can contribute to MCZ designation in several ways. It can contribute directly to the social consequences of such designation referred to in subsection 7(8) by providing the cultural context in which known sites of historic or archaeological interest are embedded: the background against which their interest and, if applicable, their heritage designation, has been adjudged and which may well be directly pertinent to the inherent setting and survival of the site of such interest themselves. The application of HSC to the MCZ designation process is illustrated by Case Study 2 of the Bristol Channel and Severn Estuary HSC project report, using as an example the waters around Lundy Island which were designated as the first MCZ in England in January 2010 (Taylor and Johns 2011, vol 2, 34-41).

As HLC and HSC directly address cultural landscape and seascape issues, underpinned by common principles and directly in accord the ELC Articles and definitions throughout land, coast and sea, the extensive coverage by HSC and HLC databases will make a major contribution in providing a framework and content for MCZs' landscape/seascape integration. HSC can contribute strongly to the evidence of broader seascape character needed by the UK Government to fulfil its Nagoya commitment as confirmed by Richard Benyon. It can also provide an understanding of the cultural processes which have shaped the present ecological disposition of MCZ areas — whether its riches or problems — so contributing to an understanding necessary to underpin further management strategies for the MCZs.

Particularly relevant to HSC are paragraphs 7 and 8 in Section 117 'Grounds for designation of MCZs' of the Marine and Coastal Access Act 2009.

> (7) In considering whether it is desirable to designate an area as an MCZ, the appropriate authority may have regard to any economic or social consequences of doing so.
>
> (8) The reference in subsection (7) to any social consequences of designating an area as an MCZ includes a reference to any consequences of doing so for any sites in that area (including any sites comprising, or comprising the remains of, any vessel, aircraft or marine installation) which are of historic or archaeological interest.

Areas of Outstanding Natural Beauty

Areas of Outstanding Natural Beauty (AONBs) were brought into being by the National Parks and Access to the Countryside Act of 1949. The Countryside and Rights of Way Act 2000 strengthened the conservation and management of AONBs in partnership with local authorities. Characterisation of cultural dimension of marine and coastal landscapes plays a key role in the development of coastal AONB management plans, especially with the legal recognition that 'Natural Beauty' includes the results of man's management of the land.

The intimate inter-relationships between historical and natural processes in shaping our landscape perceptions are recognised by the ELC and widely by those charged with managing the coastal and marine environment. The extension of that inter-relationship to seascape, as also noted by the ELC, is perhaps less fully recognised. The impact of human activities over time has affected a wide range of aspects of the environment including those commonly thought of as 'natural', such as biodiversity, the movement of sand along beaches and dunes, or the habitats along rivers and estuaries. Similarly coastal and marine habitat management is a historic cultural action, in the same way that management of the historic environment has effects on habitats that must be taken into account. Just as the effects of man's management have left a cultural imprint on the *environment* everywhere, so too that cultural imprint has shaped the

cultural perceptions in our minds of *landscape* and, where it involves the coast and marine, *seascape*.

The character of that cultural imprint is conveyed within the HSC approach to characterising the coastal and marine landscape, reflecting not only the more obvious human activities such as industry and leisure, but all those which have played roles in shaping the present, everywhere, whether deliberate or unintentional, active or passive. HSC recognises the imprints of historic cultural processes as a dimension of the environment and our cultural perceptions of it. It is necessary for informing broader environmental understandings, highlighting the advantages, through HSC's GIS platform, of enabling its interoperability with other environmental spatial databases.

Characterisation of the marine and coastal landscapes therefore is central to the development of management plans for coastal AONBs. HSC can help establish what are the special qualities of an AONB by providing baseline information on the cultural dimension of landscape character and its variation across the AONB itself and by showing how the typical qualities within the AONB area stand in contrast with the typical beyond: a contrast underpinning what is special about the AONB.

Cornish Mining World Heritage Site

The Cornwall HLC performed a valuable role in informing the preparation of the nomination of Cornish Mining for World Heritage Site (WHS) status, and this is cited within the WHS Nomination document. Within chapter 3a 'Description of property' (Cornwall Council 2005 60–70), the use of HLC is described as the method used to assist selection the individual WHS Area boundaries (A1-A10), and the maps of each Area of the nominated site are shown with the HLC layer depicting mining settlements, smallholdings, etc. Also within chapter 3c, again 'Description of Property', the concept of HLC is explained (*ibid*, 163) and a map shows the basic classifications including Recently Enclosed Land, which is of particular relevance to the WHS, as this captures the development of mineworkers' smallholdings during the latter 18th to early 19th century as a response to the need for more land for agriculture.

http://www.cornishmining.net/pdf/Cornwall_west_devon_Mining_Landscape_WHS_Nomination_Document_Part3a.pdf

http://www.cornishmining.net/pdf/Cornwall_west_devon_Mining_Landscape_WHS_Nomination_Document_Parts3b_c_d_e.pdf

Sea transport was crucial to the Cornish mining industry and nowhere in the WHS is much more than 20km from the sea. Proximity to the coast counterbalanced the industry's geographically peripheral position in the far south-west of Britain, opening it up to the world and this is reflected in both the National and Regional Character texts for Industry and Ports and Docks. HSC provides a maritime perspective and a maritime context which complements the land-based view of HLC. Together, the two overlapping character approaches will ensure that the historic characteristics of the present-day coastal landscape can be taken into account in future management of the WHS.

3.2.3.3 Nature Improvement Areas (NIAs)

Nature Improvement Areas (NIAs) are large, discrete areas intended to deliver a step change in nature conservation, where a local partnership has a shared vision for their natural environment. The partnership will plan and deliver significant improvements for wildlife and people through the sustainable use of natural resources, restoring and creating wildlife habitats, connecting local sites and joining up local action

Section 2 of the Natural Environment White Paper published in June 2011 refers to the integration of people and nature and the implementation of Nature Improvement Areas and in July 2011 Defra launched a new grant scheme competition administered by Natural England to establish NIAs. Of the first 12 current NIAs two are within the South

West Peninsula HSC project study area, Wild Purbeck and Northern Devon both of which have coastal boundaries.

The 12 NIAs vary across the country according to what is feasible and what is needed, but in general these are places where:

- Opportunities to deliver ecological networks, both in terms of large area and scale and valuable benefits to wildlife and people, are particularly high;
- A shared vision for the natural environment exists among a wide partnership of local people, including statutory and voluntary sectors;
- Significant improvements to the ecological network can be achieved over large areas by enlarging and enhancing existing wildlife sites, improving ecological connectivity and creating new sites;
- The surrounding land use can be better integrated with valued landscapes and action to restore wildlife habitats and underpinning natural processes helping to adapt to climate change impacts;
- Benefits to urban areas and communities can be achieved and, where appropriate, NIAs may contain urban areas as part of an enhanced ecological network;
- 'Win-win' opportunities are identified and have the potential to be exploited to the full to derive multiple benefits, for example with benefits for the water environment and Water Framework Directive objectives, flood and coastal erosion risk management and the low-carbon economy;
- There are opportunities to inspire people through an enhanced experience of the outside world.

HSC, as with HLC, can be used as a tool for increasing local awareness of the rich and varied historic cultural character of NIAs. But beyond that, it can give context and justification to the NIA areas themselves, demonstrating and communicating what is so different and special about their combinations of cultural characteristics and how they have influenced these areas' ecological expressions. HSC is especially well-placed to do this for the Wild Purbeck and Northern Devon as it enables, in conjunction with HLC, a common framework of understanding from land, across the coast to the marine, encompassing the overlaps in seaward and landward perceptions.

In closely-related work on land, for example in Lancashire and in Suffolk, HLC has been recognised as providing valuable information to the former English Nature's 'Lifescapes' initiative, seeking to increase biodiversity throughout the countryside. It gave particular assistance in helping to identify the location and extent of former habitats for English Nature's *Lifescapes* initiative (Clark *et al* 2004). In the marine zone HSC has similar roles, providing baseline inputs that will help to identify the cultural processes that have shaped and affected present expressions of biodiversity and articulating the cultural dimension and perspective of topographic features and areas that are often incorrectly viewed as only the result of 'natural' processes. HSC's 'Navigation' Character Types, which include wreck clusters as 'navigation hazards', will also assist in identifying areas of the marine habitats which form typically on wreck sites although it should be noted in this regard that the MPA Science Advisory Panel commented that they believed this occurrence may be considered as part of the case for a MCZ only if FOCI species or important 'other features' occur on artificial substrata, but not otherwise (MPA Science Advisory Panel 2010). Whether or not they may be considered within the case for an MCZ, it is at least useful to know the artificial substrate is there to be colonised by such species or features at all.

3.2.3.4 Climate Change and the Historic Environment

The management of change arising from potential impacts from climate change and its mitigation is a key priority for English Heritage. A policy statement setting out English Heritage's thinking regarding the implications of climate change was published in 2008 (English Heritage 2008). It recognises the potential impacts from climate change, such as sea level rise, extreme weather conditions and hydrological change on the historic landscape as well as the possible effects of mitigative measures in response to climate change such as the development of sea defences or renewable energy resources.

The UK Marine Policy Statement recognises that adapting to the impacts of climate change will be a priority for terrestrial planning on the coast and that marine planning will need to be compatible with these impacts (UK Government 2011, 23).

The output of HSC will provide a useful resource in informing government agencies on the cultural character of the different parts of the coastal and marine environment during policy making and the assessment of potential impacts of new developments during Environmental Impact Assessments (EIAs).

As well as being a massive and increasing force for change in the historic landscape, climate change and human responses to it have also long played an important part in defining the present character of many coastal and marine areas, through the construction of sea defences, onshore and offshore wind farms, or the reclamation of coastal areas. All of these play a key part in defining the present historic cultural character of many of our coastal landscapes and seascapes.

3.3 Data management

Historic Seascape Characterisation seeks to reflect best practice for data management and is compiled in accordance with '*Guidelines for English Heritage Projects involving GIS*' (English Heritage 2011d). English Heritage is also working closely with the Marine Environmental Data Information Network (MEDIN) alongside other partners from the private and public sector, towards a set of agreed "public good" goals (see http://www.oceannet.org/).

These aim to:

- Provide a data management and access framework for the UK marine data community;
- Develop marine data management standards, and protocols;
- Contribute to the marine component of the geospatial strategy for the UK; and
- Recommend actions and map progress towards achieving coordination of management of UK Marine Data.

HSC can contribute towards MEDIN objectives by:

- Helping to make marine data accessible to the community in a format that is useful for all stakeholders; and
- Enhancing and improving the data quality of marine geospatial analysis which will enable integration of natural and historic environment datasets to allow informed decisions towards development control casework.

3.4 Research

The '*South West Archaeological Research Framework*' (SWARF) was published in 2008 (Webster 2008) and the '*Scilly Historic Environment Research Framework'* (SHERF) Resource Assessment and Research Agenda were finalised in 2012 (Johns 2012). The need for further work in both underwater and intertidal environments, particularly for the understanding of prehistoric submerged landscapes, is clearly set out in both documents. HSC provides an additional perspective and a valuable resource

complementing HLC when dealing with the coastal and marine environment. In addition HSC is particularly valuable in making available a strategic level view of coastal and marine landscape character for education and the contextualisation of research.

Historic Seascape Characterisation has considerable potential to be used in conjunction with other environmental themes and other heritage related data, such as the Marine ALSF database produced by ABPMer (http://www.marinealsf.org.uk/), and on the Archaeological Data Service (ADS) database, to assess gaps and coverage in research themes across England's coastal and marine zones. The provision of an area-based cultural heritage output which is interoperable with other GIS databases allows examination of correlations and disparities between datasets which could not previously be viewed together.

3.5 Outreach and education

Raising levels of public understanding, engagement with, and appreciation of the historic cultural dimension of the marine environment is one of the main aims of both HSC and HLC and contributes strongly towards English Heritage's Corporate Aim to'help people appreciate and enjoy England's national story' (English Heritage 2011c, 12). It also aligns closely with the inclusive approach to landscape embodied by the European Landscape Convention (ELC) which requires ratifying states 'to recognise landscapes in law as an essential component of people's surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity' (Council of Europe 2000, Article 5).

In line with that, HSC can serve as a framework and resource for outreach and improving public awareness of the marine historic environment. The Character Type texts in particular provide a valuable educational resource tool, consistently structured and in comprehensible language, conveying information on the historic character of everyone's familiar or favourite areas of the coast and sea. HSC carries the message that everywhere has historic character: the typical and commonplace as well as the rare and the special: all that is familiar and distinctive, whether highly valued or not, has relevance and is covered by HSC and HLC. It has meaning for everyone who inhabits, uses, or has any engagement with the coast or the sea.

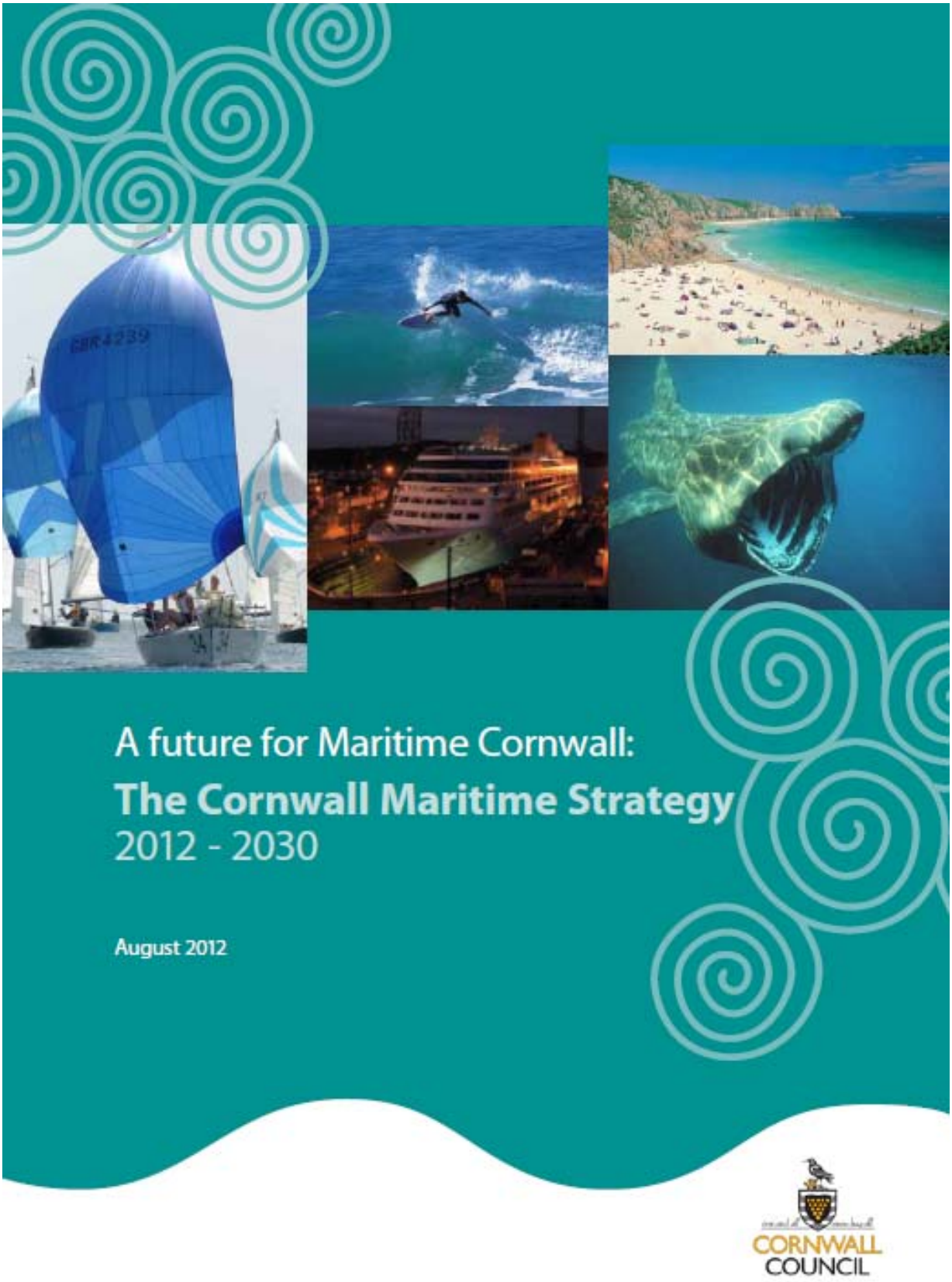

Fig 5: Front cover of the Cornwall Maritime Strategy 2012–2030

4 Case studies

4.1 Case Study 1: The Cornwall Maritime Strategy

4.1.1 Introduction

'*A future for Maritime Cornwall: The Cornwall Maritime Strategy 2012-2030'* (the Strategy) (Fig 5) was adopted by Cornwall Council in August 2012, Truro, following a series of Consultation Drafts and a Public Consultation document. It is the first, and to date the only, high-level maritime strategy to be produced by a local authority. At various points it identifies strong roles for landscape and seascape character in building Cornwall's future sustainable economic and community development. This Case Study looks at the benefits of HSC in informing its implementation.

4.1.2 A vision for Maritime Cornwall

The Strategy sets out a vision for Maritime Cornwall. By 2030:

- Cornwall has a sustainably managed maritime environment, which is well understood and known internationally as an excellent location for work, wildlife and for recreation;
- Cornwall's economy is supported by a diverse range of opportunities for ports, marine-related industries, transport and businesses including environmental technologies;
- Cornwall has a rich and enviable maritime heritage, a healthy maritime natural environment and landscape;
- Cornwall has distinctive, well-connected communities, resilient in the face of change (Cornwall Council 2012, 5).

This vision is under-pinned several overarching or cross-cutting themes, each supported by a high level objective and aims to deliver the overall vision for Maritime Cornwall.

4.1.3 HSC roles in the Strategy

The Strategy views landscape and seascape as:

- A positive asset for economic development, hugely important in creating distinctiveness of place and an environment in which people choose to live, work and build businesses (Cornwall Council 2012, 23); and
- Relevant to all economic activity and community cohesion in the area, not just an asset for the tourism industry (Cornwall Council 2012, 9).

The Strategy acknowledges that 'landscapes and seascapes have heavily influenced Cornwall's history and economic development and still today help to forge its character and cultural identity. These characteristics provide the basis for Cornwall's strong maritime economy and individual coastal communities' (Cornwall Council 2012, 9).

'Assessment of landscape and seascape (including historic landscape/seascape)' are given as example of the 'integrated approaches' needed to inform 'maritime, coastal and terrestrial Council functions' (Cornwall Council 2012, 16)

That clear endorsement of the roles of HSC and HLC give them strong relevance to the implementation of many of the Strategy's themes, objectives and aims and these are discussed below.

Theme A: A sustainable approach

Objective A: *To work towards a sustainable, low carbon future for Maritime Cornwall that encourages appropriate economic growth, supports resilient communities and protects environmental assets (Cornwall Council 2012, 15).*

Aim A1 *Embed the principles of sustainable development throughout the process of delivering this Strategy, balancing environmental, economic and social considerations in order to meet the needs of the present without compromising the ability of future generations to meet their own needs (Cornwall Council 2012, 15).*

HSC and HLC are designed to inform the sustainable management of change of the historic and natural environment and can help provide frameworks for informed conservation and management of Maritime Cornwall at many levels and scales. Achieving sustainability is a cultural, as well as environmental issue. The time-depth in the present landscape demonstrated by HLC and HSC can be taken forward to inform future management of change as it occurs within Cornwall's coastal landscape. This should allow future generations to build their identities, sense of place and meaning from their landscapes, maintaining quality of life while reconciling this with environmental sustainability (cf Hooley 2011; 2012).

Aim A2 *Work with academic establishments and data centres to encourage and support research and development to better understand and monitor the impacts, opportunities and challenges facing maritime enterprise, communities and the environment (Cornwall Council 2012, 15).*

HSC has a broad stakeholder base which includes academics, local government officers and representatives from national organisations. HSC corresponds with the scale of analysis already used by most agencies and spatial planners concerned with the natural environment, allowing the historic environment to take its place within an integrated approach to sustainable environmental management.

Aim A3 *Ensure that a sound evidence base, including socio-economic impacts and valuation of ecosystem goods and services, is used to inform all strategic decision making in the maritime area (Cornwall Council 2012, 15).*

HSC has considerable potential to be used in conjunction with other environmental themes, heritage related and socio-economic data to assess gaps and coverage in research themes across England's coastal and marine zones. The provision of an area-based cultural heritage output which is interoperable with other GIS databases will enable the comparison between datasets which could not previously be viewed together and also to provide context for other data sources. In doing so, HSC contributes cultural understanding to analyses of current ecosytem imbalances as well as assessments of current and potential cultural service outputs. It also provides a framework for planning the culturally sustainable implementation of outputs from ecosystem services assessments.

Aim A4 *Gain a better understanding of the potential for in-combination and cumulative effects of plans and projects on the marine natural and historic environments and the risks and opportunities presented by climate change (Cornwall Council 2012, 15).*

HSC is a valuable source of information for establishing what are the distinctively characteristic qualities of maritime Cornwall by bringing together many different datasets and viewpoints, from the strategic to the local and by considering how the character of the seascape and coastal landscape has been shaped and perceived. It can help to assess why they are distinctive, and for providing the necessary evidence base on what constitutes the seascape/landscape character and its variation across Cornwall. It is only after this baseline data for Cornwall's seascapes and coastal landscapes has been established that the implications of climate change on them be properly understood and planned for.

Theme B: A joined-up approach

Objective B: *To achieve more integrated approaches to managing the maritime area, encouraging partnership working across organisational, community, sectoral and geographic boundaries (Cornwall Council 2012, 16).*

Aim B1 *Establish a Cornwall Maritime Forum open to organisations and individuals from all maritime sectors; with the objective of further promoting and coordinating maritime interests in Cornwall (Cornwall Council 2012, 16).*

Execution of the South West Peninsula HSC project by Cornwall Council has identified a wide range of stakeholders at national, regional and local levels who are potential contributors to a Cornwall Maritime Forum

Aim B2 *Implement a simplified, transparent and coordinated approach to management and decision making in the maritime area, both within the Council and working with partner organisations and based on the principles of Integrated Coastal Zone Management (ICZM) (Cornwall Council 2012, 16).*

Aim B3 *Ensure that maritime, coastal and terrestrial Council functions, wider concerns and issues are planned in an integrated way within a coordinated framework of plans and strategies which balance social, economic and environmental concerns and reduce conflict between sectors (Cornwall Council 2012, 16).*

Considering Aims B2 and B3, HSC considers the character of the entire seascape and, with its coverage of coastal land and intertidal areas, provides a comprehensive overview of all the issues relevant to ICZM, with transparency provided by a database structure showing clearly the basis of each assessment and confidence-ranking showing the strength of database assessments.

The overlapping perspectives and common principles of HSC and HLC also make them crucial for championing ICZM. The character of Maritime Cornwall can be considered as a seamless landscape/seascape regardless of the terrestrial/marine boundary due to the spatial similarities of the two methods. In addition the use of HSC and HLC in conjunction enables full account to be taken of the overlapping perspectives of the sea from land and the land from sea.

HSC inherently brings together the cultural and natural dimensions of the landscape, giving an integrated understanding of the interests, activities and attitudes which have shaped it. The interoperability of HLC/HSC with other environmental datasets also means that data can be easily incorporated and manipulated, contributing towards the desired integrated management.

Aim B4 *Continue to encourage and support cross-border integration and cooperation with the Isles of Scilly, Plymouth, Devon, Europe and other relevant areas over the management of the maritime area (Cornwall Council 2012, 16).*

HSC aims to encourage cross-border integration and cooperation and at the strategic level of this project, will produce national HSC coverage transcending all sub-national boundaries. The South West Peninsula HSC project area itself covers the Isles of Scilly, the south coast of Devon, Plymouth and the whole coast of Cornwall and extends out to the limit of English inshore and offshore regions; the north Devon coast is covered by the Bristol Channel and Severn Estuary HSC project area (Taylor and Johns 2011). The GIS mapping aids interpretation of historic character at a wider than county-scale, while the character texts provide a national and south west regional context for Maritime Cornwall.

Aim B5 *Ensure Cornwall is well prepared to influence and engage with Marine Planning, identification of marine renewables areas and the designation and management of Marine Protected Areas in the South West through setting up appropriate governance arrangements with relevant authorities and stakeholders and developing a strong evidence base (Cornwall Council 2012, 16).*

HSC is intended to inform the long term sustainable management of the marine environment, as required by the Marine and Coastal Access Act 2009, by providing a strategic level characterisation of historic cultural processes that have shaped the present seascape. That characterisation has relevance for marine

planning contexts well beyond the more traditional aspects of heritage management. The application of HSC to the designation and management of MCZs and MPAs is discussed above (section 3.2.3.2). As HLC and HSC directly address cultural landscape and seascape issues, underpinned by common principles and directly in accord the ELC Articles and definitions throughout land, coast and sea, the extensive coverage by HSC and HLC databases will make a major contribution in providing a framework and content for MPAs' and MCZs' landscape/seascape integration.

Aim B6 *Work in partnership with the Marine Management Organisation and Cornwall Inshore Fisheries and Conservation Authority to assist in the delivery of their functions and where there is overlap with the Local Planning Authority at the coast. Support improved inter-agency management and enforcement of local byelaws, fisheries legislation and Marine Protected Areas (Cornwall Council 2012, 16).*

One of the aims of HSC is to support the MMO, IFCAs and LPAs in the delivery of their functions and the relevance to marine planning, development control and cross-disciplinary marine management is discussed above in sections 3.2.2 and 3.2.3. Execution of the South West Peninsula HSC project has already involved close liaison with, and data provision from all of those bodies. The HSC data outputs from the South West Peninsula, the Hastings-Purbeck and the Thames Estuary and Kent HSC projects have already been used to inform the evidence base for the Seascape Character Assessment of the South Marine Plan Areas (MMO 2013, fig 11).

Aim B7 *Produce Maritime Action Plans which deliver the objectives and strategies set out in this document. Consider producing a maritime Supplementary Planning Document for Cornwall (Cornwall Council 2012, 16).*

HSC is well positioned to contribute to the production of Maritime Action Plans in exactly the same way that HLC has contributed to Historic Environment Action Plans (HEAPs), such as the HEAP compiled for west Cornwall's rough ground which covers covers much of west Cornwall's coastal margins (Herring and Kirkham 2011).

Aim B8 *Develop a network of Maritime Champions within the Council and partner organisations (Cornwall Council 2012, 16).*

The South West Peninsula HSC project stakeholder contacts provide a list of potential Maritime Champions within the Council and partner organisations, and the Cornwall Council HE Projects HSC team can provide positive assistance with the development of such a network.

Theme C: Encouraging maritime enterprise and innovation

Objective C: *To promote low carbon maritime enterprise throughout Cornwall as a key component of economic revitalisation and international excellence (Cornwall Council 2012, 17).*

Aim C1 *Work towards securing a sound economic future for Cornwall through working with industry to provide a wide range of jobs and skills in maritime employment (Cornwall Council 2012, 17).*

Aim C2 *Support the Local Enterprise Partnership (LEP) and Cornwall Marine Network in promoting and developing sustainable maritime enterprise (Cornwall Council 2012, 17).*

Cornwall's distinctive historic cultural landscape qualities are positive assets, not constraints, in promoting and developing this Objective and Aims C1 and C2: HSC provides the comprehensive evidence base for identifying and understanding those qualities. As well as providing a context for the tourist industry they also make Maritime Cornwall the place that people wish to be based in when setting up their new business/enterprise, etc.

Aim C3 *Ensure that Cornwall develops excellence in the provision of marine education and training across the full range of maritime industries and the environment (including higher education and vocational training) building on existing capability and expertise integrated with business incubation (Cornwall Council 2012, 17).*

Raising levels of public understanding, engagement and appreciation of the historic cultural dimension of the marine environment are among the main aims of both HSC and HLC. HSC and HLC can serve as frameworks and resources for outreach and improving public awareness of the marine and coastal historic environment. The Character Type texts in particular provide a valuable and readily accessible educational resource tool.

Aim C4 *Harness the potential of marine renewables within the context of a broad-ranging strategy for sustainable energy production in Cornwall to create an internationally recognised centre of excellence (Cornwall Council 2012, 17).*

Aim C5 *Promote the development and deployment of marine renewables including supporting research and development into wave, tidal and wind energy. Ensure the economic benefits of the development of Cornwall's marine energy programme are effectively coordinated with environmental priorities (Cornwall Council 2012, 17).*

HSC has already proved valuable to license-applicants and their historic environment consultants during the initial assessment or desk-based study for the applicant's EIA scoping report for marine renewable schemes, as shown by the use of HSC project data in informing Environmental Statements for major offshore windfarms elsewhere, such as the now-withdrawn Atlantic Array proposals in the Bristol Channel. It can help to identify potential environmental effects, their significance and other issues. HSC itself is value-neutral and is designed to be a positive force in informing change, recognising that seascape and landscape are themselves product of change, that change needs to happen, and that well-informed and sustainable landscape and seascape change will respect and retain cultural distinctiveness and legibility for future generations. How far that distinctiveness and legibility is to be retained is a matter for the planning process. It is simply for HLC and HSC to ensure that information on the character of the cultural dimension in the present is available to inform that process. Similarly historic cultural landscape and seascape character cannot be 'lost' as such, only changed to a differing character. In some circumstances, society may view that as desirable, in others, not.

Aim C6 *Support the implementation of the Crown Estate Strategic Resource Areas, maximising opportunities for collaborative working (Cornwall Council 2012, 17).*

The Crown Estate have carried out a study of areas of seabed that have potential for large-scale development of wave and/or tidal stream energy which they term 'strategic areas' or 'key resource areas' (The Crown Estate 2012). Scottish waters offer the majority of the UK's wave resource, but there are also significant wave resources off south west England and Wales. There are similar amounts of tidal stream resources in English, Scottish and Welsh waters, and also tidal stream resources off Northern Ireland (*ibid*, 7, fig 3).

HSC will be valuable in assisting in the implementation of the Crown Estate Strategic Resource Areas in similar ways to those outlined under aims C4 and C5.

Aim C7 *Support the infrastructure required for sustainable maritime enterprise, including the availability of high speed broadband and digital fibre connectivity for workspace; together with supporting infrastructure for onshore renewables (Cornwall Council 2012, 17).*

The use of sensitivity assessment, building on HSC and HLC, can inform decision making during the planning of such developments either at strategic or specific application level.

Theme D: Healthy and resilient coastal communities

Objective D: *To ensure Cornwall has healthy, safe and vibrant coastal communities that have a strong relationship with the sea and coastal environment (Cornwall Council 2012, 19).*

Aim D1 *Use programmes and initiatives to nurture the strong relationship between coastal and inland communities and the sea, coast and beaches (Cornwall Council 2012, 19).*

HSC can enable local communities to gain a more informed understanding of the cultural development of their familiar local area, setting that alongside their own experience and understanding as they identify what they value about Maritime Cornwall. HSC identifies specific coastal character types and the Character texts discuss the values of each Type and their amenities, etc. Their non-technical texts mean they can be readily used as a resource to raise awareness as people to formulate their own perceptions of landscape. Alongside our cultural understanding in HSC/HLC this could ultimately produce interpretation that improves understanding about the issues facing the sea, coast and estuaries for Cornwall Council and local communities.

Aim D2 *Understand the value of the marine environment in supporting active and healthy lifestyles; promote coastal access to beach and water for visitors and residents of all ages, abilities and socio economic backgrounds (Cornwall Council 2012, 19).*

Aim D3 *Promote coastal walking and cycling as a means of healthy and enjoyable transport (Cornwall Council 2012, 19).*

In respect of Aims D2 and D3, HSC can be used as a raising awareness tool to enable public enjoyment as well as reinforce respect for the environment. The HSC GIS, in conjunction with other baseline data required for route-planning, will help highlight the breadth of character through which the route is being planned, provide information on what that character comprises, and help identify optimal situations where information for route users would be most beneficial in raising awareness of the cultural and historic landscape and seascape through which the route passes. Character Type text descriptions produced in conjunction with the HSC GIS offer a useful resource in the development of public information for users along the coastal footpaths and bridleways.

Information provision along coastal routes would have even greater effectiveness if linked to national resources such as the English Heritage 'Heritage Gateway' or to local educational and community based initiatives designed to enhance local communities' current awareness of the landscape character and perceptions of the areas in which they live and work, for example through HLF-funded Landscape Partnership Scheme projects.

Aim D4 *Support and promote sustainable levels of water-based and coastal recreational activities including sailing, rowing, surfing, swimming, angling and diving — for residents and visitors. Improve the understanding and management of these activities at the coast to reduce conflict and increase safety and enjoyment (Cornwall Council 2012, 19).*

HSC can help to assess the effects of recreational activities on the identified special features of the landscape including sensitive habitats, species, historic features and characteristic views. HSC, in conjunction with HLC, provides an indication of the nature and extent of existing recreational activities both on land and at sea, as well as reflecting which HSC — marine area (coastal, intertidal, inshore, offshore) or marine levels (sea surface, water column, sea floor, sub sea floor) could be potentially affected. In identifying the typical and commonplace in landscape character, HSC and HLC also enable, by their contrast, a clearly justifiable fully contextualised statement of what is special within the landscape

and why, helping reduce detrimental impacts through targeted visitor management programmes.

Aim D5 *Support neighbourhood planning and regeneration initiatives, including the creation of employment opportunities that maintain and enhance the viability and vibrancy of coastal towns and villages (Cornwall Council 2012, 19).*

HSC, and HLC, are inherently designed to engage with stakeholder interests and provide a framework facilitating their involvement. They communicate in cultural terms and form the meeting point of, and articulate many differing landscape perspectives. The non-technical texts in particular provide information on the character types of maritime Cornwall in an accessible and easily understandable way. These can allow the public to set HSC's cultural understanding alongside their own perceptions to inform neighbourhood planning and regeneration initiatives as envisaged in the Localism Act (Department for Communities and Local Government 2011).

Aim D6 *Ensure coastal communities are well prepared for future events and shocks, including natural hazards, climate and coastal change, rising energy prices and peak oil and socio-political changes. Particular focus will be given to preparing for sea level rise (Cornwall Council 2012, 19).*

As outlined above (section 3.2.3.3) the outputs of HSC and HLC will be helpful in informing Cornwall Council and government agencies on the character of the different parts of the coastal and marine and can used to broaden the perspective and comment on the wider landscape character potentially impacted by coastal change and rising sea level to inform future strategies for mitigation. HSC can also show how our familiar land- and seascapes are often the products of long-standing human adaptations to change, especially along the coast, so helping to provide sustainable cultural messages in support of the often difficult but necessary decisions prompted by climate change.

Aim D8 *Work to enhance and support sustainable local seafood production, harvesting and consumption. Enable opportunities for communities to generate their own electricity (Cornwall Council 2012, 19).*

The HSC Character Types include 'Fishing' and 'Aquaculture'. The Character Texts for these Types include their defining/distinguishing attributes, the historical process that have formed them, how they are perceived and valued by local communities, their research, amenity and educational potential, their present condition and forces for change all of which can enhance and support their future sustainability. The GIS mapping will be able to help in the identification of areas which are suitable for developing marine farming opportunities or which will be least disruptive of existing historic cultural character.

Aim D9 *Ensure that the benefits of the Maritime Strategy reach all relevant sectors and are geographically distributed throughout Cornwall (Cornwall Council 2012, 19).*

HSC can assist in this aim by promoting understanding of the marine historic and natural environment through it its outreach and educational outputs.

Aim D10 *Maximise opportunities for the developing marine energy industry to act as a catalyst for reinvigoration of Cornwall's ports and harbours and the surrounding communities (Cornwall Council 2012, 19).*

The relevance of HSC to EIAs for proposed marine energy industry projects is discussed in above under Aims C5 and C5. The structure of the HSC output, comprising the GIS characterisation and Character Type text descriptions, corresponds well with providing an EIA's first stage assessment of the broad activities and key features dominating the marine and coastal environments.

Theme E: A working peninsula

Objective E: *To recognise, protect and further develop the 'working harbour' role of Cornwall's estuaries, ports and harbours (Cornwall Council 2012, 20).*

Aim E1 *Consider the strengths, issues and opportunities in relation to Cornwall's ports and harbours to gain a better understanding of their roles(Cornwall Council 2012, 20).*

As well as characterisation of the four tiers of the marine landscape HSC also characterises coastal land from a maritime perspective. Ports and harbours are therefore incorporated into HSC. Again, HSC uses historic representations to characterise their present historic seascape, allowing the grain of the past which creates present distinctiveness to inform sustainable change towards a culturally distinctive future.

HSC used in conjunction with HLC offers baseline information on landscape/seascape and historic character: a major part of the evidence base necessary for understanding the roles and material expressions of Cornwall's ports and harbours. The datasets from South West Peninsula HSC Project and the Cornwall HLC will be important sources for the rapid characterisation of the ports, harbour and directly associated areas which is currently being undertaken as part of the English Heritage-funded project to assess the heritage significance, threats, protection and opportunities relating to Cornish ports and harbours (Young 2013).

Aim E2 *Future-proof maritime areas for maritime related business and community uses through protecting waterfront land in urban environments and ensuring that port infrastructure and waterfront locations are at the heart of regeneration schemes (Cornwall Council 2012, 20).*

The Cornwall & Isles of Scilly Urban Survey (CSUS), carried out in the early 2000s, was a pioneering initiative aimed at harnessing the quality and distinctive character of the historic environment to produce strategies for successful and sustainable regeneration of 19 of Cornwall's towns. These included Penzance, Truro, Saltash, St Ives, Newlyn, Torpoint, Hayle, Falmouth, Newquay and Penryn etc. http://www.historic-cornwall.org.uk/csus/project.htm

HSC supplements such land-based characterisation and extends its coverage into the marine zone. It can help inform regeneration schemes for waterfront land to promote beneficial change, both reinforcing and enhancing existing character and ensuring that new developments are better integrated into existing urban frameworks, more focussed and ultimately more successful.

The baseline information of HSC offers an understanding on historic cultural landscape character which can be applied when assessing whether such developments are in accord with character-based planning policies.

Aim E3 *Protect and develop port infrastructure where it is sustainable and economically viable to do so, so that they continue to be an important part of modern and future maritime Cornwall (Cornwall Council 2012, 20).*

HSC provides valuable baseline data which is itself value-neutral and is designed to be a positive force in informing sustainable management of change. It emphasises the historic continuum which provides the context for current change into which regeneration measures must fit if the distinctive qualities of each historic port and harbour are to be maintained and the regeneration is to be sustainable. It should be noted that if a port's infrastructure is not economically viable it will not be sustainable — rather than being a check on economic viability, sustainability requires it as a prerequisite.

Aim E4 *Work towards more coordinated management of and advocacy for ports and harbours, to encourage further economic development whilst balancing the operational, leisure and environmental uses.*

HSC's consideration of the typical allows it to give provide evidence-based context of the typical to inform our evaluation of what are deemed 'special' features in the built environment and provides a landscape framework to better understand the patterning and potential future uses of those features *(Cornwall Council 2012, 20).*

This is particularly relevant to development considerations affecting ports and harbours. The baseline information of HSC offers an understanding on historic cultural landscape/seascape character which can be applied when assessing whether such developments are in accord with character-based planning policies.

Aim E5 *Where appropriate, promote port development that facilitates the expansion of other economic activities, including renewable energy, leisure, fishing, freight handling, ship repair, yacht and boat construction.*

HSC, used in combination with historical records, Shoreline Management Plans and HLC, provides a strategic level of understanding of the historic cultural context of Cornish ports and harbours which can guide regeneration schemes and help in determining the appropriate development for specific ports and harbours.

Traditional development control and change-management practices can be suitably informed through an evidence base, consisting of heritage assets, allowing individual site-based responses. This does not, however, provide for the comprehensive area-based needs of spatial planning or for the historic processes that have shaped the typical and commonplace — the characteristic — of our familiar surroundings. These considerations are also needed to inform the management of change. HSC addresses this by highlighting the dominant historic character shaping the present-day landscape. HSC, through its process-based methodology, allows an understanding of its distinctively maritime historic character. Taken together with HLC, it allows an in-depth understanding of the character of the present-day coastal landscape and the historical processes which it reflects. Such an evidence base allows a fuller understanding of the effects of future developments, not simply on individual sites, but on the overall perception and meaning of the coastal landscape.

Aim E6 *Ensure that ports and the coast accommodate the promotion of leisure/ recreational activities and coastal access without adverse effects on economic activity and environmental quality (Cornwall Council 2012, 20).*

HSC could be used to demonstrate the historic character of the marine AND coastal environment and modelling of Character Types' vulnerabilities help ensure promotion of leisure/ recreational activities and coastal access do not have adverse effects on economic activity and environmental quality.

Aim E7 *Maximise the opportunities for supporting and promoting sustainable local fisheries and aquaculture; including the provision of shore side facilities for handling and processing landings (Cornwall Council 2012, 20).*

As described above (Aim D8) HSC can help support and promote sustainable local fisheries and aquaculture.

Aim E8 *Promote the role of Cornwall's large and small ports and harbours in creating job and business opportunities for the development of the marine energy industry, its supply chain, technology development, manufacture and maintenance (Cornwall Council 2012, 20).*

HSC can assist in this aim by helping to increase awareness of the coastal and marine resource, by adding an area based dimension to the assessment of archaeological and historic themes and features within our landscape and seascape. As already noted (p29, 4.1.3, 1st bullet) the Strategy highlights the importance of landscape and seascape as 'a positive asset for economic

development, hugely important in creating distinctiveness of place and an environment in which people choose to live, work and build businesses' (Cornwall Council 2012, 23).

Theme F: Connecting land and sea…

Objective F: *To better connect Cornwall's coastal communities and destinations and support sustainable, low carbon transport (Cornwall Council 2012, 21).*

Aim F1 *Where appropriate, further develop and promote low carbon water-based movement, for freight, commuting, access to services and leisure (Cornwall Council 2012, 21).*

HSC can enable sensitivity-modelling to inform the appropriate siting and design of facilities and also raise awareness about an area's historic character with recreational and other users

Aim F2 *Seek solutions to better connect people with waterfront land, beaches, the sea and estuaries and their associated activities (including walkways, cycle routes, affordable public slipways and boating facilities and the removal of physical barriers). Seek to ensure that coastal communities are better connected to each other, particularly by walking, cycling and public transport routes (Cornwall Council 2012, 21).*

HSC and HLC can inform high quality design solutions which are in keeping with local historic character. That does not mean that they should seek to replicate existing materials and styles but rather complement or enhance, and not seek to overwhelm, existing character.

Aim F4 *Ensure efficient use of waterfront infrastructure and improve functional connectivity between land and sea, for example through investigating the shared use of facilities, re-use of historic assets and multifunctional role of ports and harbours (Cornwall Council 2012, 21).*

HSC is well positioned to provide valuable context for a considered assessment of the heritage assets, including historic landscape. It provides a broader perspective on the cultural character of the present coastal environment the processes that have helped to form it and the ways in which it is culturally perceived. It also highlights the processes which determine the types of sites likely to be present but as yet unrecognised.

Aim F5 *Deliver measures to enhance, promote and support the South West Coast Path (SWCP), adjacent land, coastal public open spaces and beaches, for example by improving public transport connections and preparing for sea level rise and increased risk of coastal erosion (Cornwall Council 2012, 21).*

The relevance of HSC to coastal access provision and the South West Coast Path is discussed above in Section 3.2.3.1. HSC will be informative here in two major respects: in providing the access users with a broader cultural landscape understanding as detailed above and by providing a major part of the evidence base to identify coastal access routes which respect and harmonise with the existing character of the landscape.

HSC and HLC of the areas which the SWCP passes through can ensure these capture the breadth of cultural landscape perspectives bearing on the coastal area, to landward, seaward and along the coast, highlighting the close inter-relations between the cultural, ecological, geological and geomorphological aspects that combine to influence the landscape perceptions of those using the footpath routes. With particular reference to historic assets, using HSC with HLC in this manner would enhance the path users' understanding of the past and present activities which led to such assets' creation and survival in the present landscape surrounding such routes.

HSC and HLC can be used as an information resource on the multiple landward and maritime cultural perspectives that bear on the SWCP, such information being disseminated both by the traditional static information boards but more imaginatively perhaps through information resources provided online or through mobile phones. Information provision along the route would have even greater effectiveness if linked to national resources such as the English Heritage 'Heritage Gateway' or to local educational and community based initiatives designed to enhance local communities' current awareness of the landscape character and perceptions of the areas in which they live and work, for example in Landscape Partnership Scheme projects.

Theme G**: **Pride, recognition and responsibility for cultural and historic assets.

***Objective G:** Ensure Cornwall's natural and historic maritime environment and culture is renowned worldwide, and is a source of pride and inspiration to residents and visitors' (Cornwall Council 2012, 22).*

***Aim G1** Engage, educate and inform people about Cornwall's coast and seas. Inspire and encourage people to have pride in the management of the marine environment of the maritime environment in active partnership with the Council (Cornwall Council 2012, 22).*

As discussed above, raising public awareness, understanding and appreciation of the historic and cultural dimension of the marine environment is one of the main aims of HSC. HSC can act as framework for outreach and improved local community involvement with the marine historic environment. It can also help in informing the public on the roles of change in shaping the present.

The Character Type text descriptions which support the GIS database by provide context on specific types of historic character at a regional and national level. The level of information provided in the texts and multimedia resource gives the reader a sense of where different activities are concentrated, provides historical context to many of the activities and therefore a better understanding of how different patterns of activity have developed. The structure of the text descriptions for the HSC database provides a concise and accessible overview of the character and significance of different activities when reviewing cultural and historic human processes.

***Aim G2** Support the implementation and management of the UK statutory and voluntary Marine Protected Area network. Maximise opportunities for collaborative working with other designated areas such as the AONB and World Heritage Site. Explore opportunities arising from other land-based and marine designations as appropriate (Cornwall Council 2012, 22).*

The relevance of HSC to the MCZ designation process is outlined above in section 3.2.3.2. Of the 27 recently designated MCZs five are part of Maritime Cornwall: The Manacles, Padstow Bay and Surrounds, Tamar Estuary, Upper Fowey and Pont Pill, Whitsand and Looe Bay; while The Canyons, East of Haig Frais and South West Deeps lie offshore from the Cornish coast.

MCZs are areas that have been designated for the purpose of conserving marine flora or fauna, marine habitats or types of marine habitats or features of geological or geomorphological interest and the important indicators for the MCZ process are almost exclusively biological or ecological FOCI.

The HSC GIS gives ready access to a comprehensive spatial representation of the dominant types, extent and coverage of human cultural activity that has shaped the present, including present patterns of biodiversity and habitat dispositions. The correspondence of the HSC characterisation with the main layers of the marine environment enables an integrated approach when considering a broad range of marine data which is similarly structured. HSC, like HLC, is particularly

effective in bringing cultural information to spatial planning alongside other environmental themes, informing understanding and debate with a generalised statement of historic cultural character relevant to a wide range of planning, conservation and management-led initiatives (cf Hooley 2010, 2011, 2012).

HSC and HLC are valuable tools in cross-disciplinary marine environmental management as discussed above in section 3.2.3. The broad stakeholder base for the SW Peninsula HSC includes managers and officers from the MMO, AONBs and the Cornwall WHS and can help facilitate constructive collaborative working.

Aim G3 *Promote within Council departments and beyond, a better understanding of the marine and coastal environment and the significance of natural and historic assets. Ensure that relevant Council functions are undertaken with respect to these (Cornwall Council 2012, 22).*

HSC provides an area-based assessment of human activity on local and regional scale and can provide an accessible key source of information for Council employees and the general public on broad range of activities including industry, fishing effort and leisure.

HSC and HLC are well placed to contribute to both assessment of the significance of heritage assets and the preparation of local plans because they are designed to achieve an understanding of the historical and cultural origins and development of the current seascape and landscape in an inclusive manner that can inform and be informed by other's perspectives.

HSC and HLC provide the seascape/landscape context for the site-specific HER data and can help ensure that the maritime influence on character is appreciated and taken into account when future decisions are taken by Cornwall Council, especially with regard to spatial planning and major infrastructure developments. The HSC methodology can be used at a finer-grained scale to inform area action plans and other localised initiatives.

Aim G4 *Work collaboratively with all sectors to secure the protection and sustainable development of Cornwall's maritime natural and historic environment through a range of public and private investment (e.g., through the Local Nature Partnership, generation schemes within existing port/harbour structures) (Cornwall Council 2012, 22).*

The national HSC programme was designed to meet English Heritage's requirements to inform the management of change in the marine and coastal environment on multiple scales through a broad range of applications and also seeks to help promote an integrated, partnership approach to marine resource management with other agencies and interests both on land and at sea.

Aim G5 *Seek opportunities for environmental growth and enhancement through habitat creation and species recovery, heritage restoration and improved management (examples include the Cornwall Biodiversity Action Plan, Shoreline Management Plan process, World Heritage Site, Historic Environment Action Plans, AONB. This will help increase resilience of the natural and historic environment to the effects of climate change and other cumulative pressures) (Cornwall Council 2012, 22).*

The contribution that HSC can make to the management of AONBs and the Cornish Mining World Heritage Site and the production of HEAPS is discussed above (pages 22-3, 31, 20). HSC takes account of sea defences, land reclamation and cultural topography as well as reflecting time depth during the characterisation process. Used in combination with historical data and modern studies of coastal change this provides an excellent framework in which to identify those historic sites and areas which may be under threat from coastal processes and/or climate change. HSC and HLC are also valuable tools for targeting conservation management because understanding of historic landscape and

seascape character is crucial for successful management for sustainable change. They provide a measure of the landscape and seascape legibility we have inherited, so enabling us to be conscious of that legibility that we hand on to future generations by our actions: a principle of landscape and seascape sustainability that lies at the heart of the European Landscape Convention.

Aim G6 *Protect Cornwall's significant geodiversity from damaging activities. Safeguard mineral resources for future use (Cornwall Council 2012, 22).*

HSC and HLC provide comprehensive area-based cultural heritage information on a GIS platform inter-operable with geological and geomorphologic GIS databases, which can improve awareness of the links between cultural landscape/seascape development and expressions today of geology, geomorphology and natural processes. Together they furnish the cultural context for the expression of geodiversity in landscape and seascape and the way they are perceived by people and so can contribute significantly towards this Aim.

Aim G7 *Understand, maintain and enhance the distinctive character and setting of local coastal towns and villages, ports and harbours. Promote high quality seaside architecture, access, signage and innovative design, that are inspired by, and sensitive to, local seascapes, landscapes and townscapes (Cornwall Council 2012, 22).*

HSC can provide the evidence base for the cultural dimension of that distinctive local character and setting: the evidence for the distinctive grain of the present in those areas, furnished by their historical development and providing the cultural legibility which sustainable future development should retain and enhance.

Aim G8 *Promote Cornwall's natural and historic environmental qualities as positive asset: essential in enhancing quality of life and in attracting business and innovation that recognise, protect and enhance the maritime environment (Cornwall Council 2012, 23).*

HSC can help by promoting the roles of Cornwall's historic and natural dictinctiveness in attracting new business enterprises whose activity and design footprints can contribute positively to the character of Maritime Cornwall.

Aim G9 *Promote and support maritime natural, historical and cultural activities and events to celebrate Cornwall's distinctive environment and heritage. Further encourage maritime-based arts and cultural activities, including festivals, events and venues (Cornwall Council 2012, 23).*

HSC helps in building cultural narratives that engage with public interest, raising awareness and understanding of local character features at different scales and many levels. It recognises the economic benefits of recreational activities which are closely related to those of the tourist industry and are a source of income as well as employment. Maritime-based arts and cultural activities are perceived as an economic resource: a source of income and employment, but also as a means of providing a better lifestyle, and therefore highly valued for its contributions to the society as a whole. In character terms it recognises that recreational use has long been a major formative aspect along much of England's present coastline.

Overall HSC and HLC offer a means of understanding the diverse range of factors which combine to create 'distinctiveness' and 'sense of place' . With their complete coverage, HSC and HLC are inclusive: their narratives are directly relevant to everyone living along the coast — their homes, backyards and gardens are part of the story. That connectivity with people is further enhanced by the focus of both HLC and HSC on time-depth in the present landscape: the landscape that is most familiar to people and through the accompanying multimedia images and texts which make the characteristic cultural features of an area more accessible.

Aim G10 *Gain a better understanding of Cornwall's natural marine resources and their value, health and wellbeing, tourism, recreation and economy and assess the status of landscape and seascapes in order to safeguard these assets (Cornwall Council 2012, 23).*

HSC allows us to understand distinctiveness, its cultural dimension and sustainability in terms of maintaining cultural legibility, in a manner which deals with the typical and is readily communicable to the wider public.

In providing the evidence base for Maritime Cornwall's varying landscape and seascape character, HSC has much to inform the provision of tourist information and area branding. Landscape and seascape are comprehensive and perception-based, providing an ideal platform for linking directly with visitors' perceptions of the County.

Aim G11 *Actively work with other regulators, landowners and businesses to maintain and improve Cornwall's water quality (inland and coastal); minimise wildlife disturbance: reduce sources of litter and pollution (including noise and light from watercraft, shipping and coastal development); and to control invasive species (Cornwall Council 2012, 23).*

The characterisation of human activities which may have an impact on the environment such as recreational boat use can help educational programmes designed to improve environmental quality, for example by targeting the education of commercial and recreational watercraft users with the aim of reducing small-scale pollution incidents. In broader terms the area basis of HLC and HSC already accords with informing the GIS basis of most Green Infrastructure (GI) planning designed to ensure such uses are available and in harmony with other considerations including minimising pollution risk.

4.1.4 Discussion

This review has illustrated in detail that HSC, especially when used in conjunction with the existing HLC, has considerable and varied relevance to the themes, objectives and aims of the '*Cornwall Maritime Strategy'*. It encompasses the maritime perspective and complements the land-based view of HLC, therefore having particular pertinence for Cornwall and its extensive coast and maritime character.

HSC and HLC can provide an important part of the evidence-base for all of the Strategy's character-focussed policies, enabling their implementation to be informed by a full and rounded understanding on the cultural context which shapes the expression of all aspects of Maritime Cornwall, whether they relate to the more traditionally understood cultural heritage themes or to ecological, geological or geomorphological considerations. It also has strong relevance to the need for implementing sustainable policies which will benefit the local community and economy.

HSC's comprehensive coverage and cultural perspective give it an immediate resonance with everyone's landscape/seascape perspectives of the area. As a result it provides a valuable tool for communicating and raising awareness of wider landscape/seascape issues and their relevance to the community. The Character Type texts especially can play an important role in disseminating this information: their concise, jargon-free style gives them a format readily understandable to Council officers, stakeholders, the general public and the young alike.

4.2 Case Study 2: Application of HSC to the EIA for a scheme to remove tin-bearing sand from the North Cornwall Coast

4.2.1 Introduction

The MMO is responsible for the new licensing system for England's Inshore and Offshore Regions, introduced by the Marine and Coastal Access Act 2009 and launched in spring 2011, and is also involved in consents for those Nationally Significant Infrastructure Projects (NSIPs) which are partly or wholly in the sea or may impact on the marine area and were formerly handled by the Infrastructure Planning Commission (IPC).

The Environmental Impact Assessment Directive (97/11/EC) requires an Environmental Impact Assessment (EIA) to be carried out in support of an application for development consent for certain types of project as listed in the directive at Annexes 1 and 2. The MMO have characterised this unique project as an 'aggregates project', despite its many differences from a typical marine aggregates project. For aggregates excavation the MMO must determine whether proposed works are a project listed in Annex 1 or Annex 2 of the EIA Directive. For projects listed under Annex I, EIA is mandatory. If the project is determined to fall under Annex 2, consideration is given to the nature of the project, having regard to its size, the scope of the works and its location.

Environmental Impact Assessment describes a procedure that must be followed for certain types of project before they can be given development consent. The requirement for that procedure and the manner in which it must be carried out are governed by the Articles of the EU EIA Directive

(http://ec.europa.eu/environment/eia/full-legal-text/85337.htm).

The procedure is a means of drawing together, in a systematic way, an assessment of a project's likely significant environmental effects. This helps ensure that the importance of predicted effects, and the scope for reducing them, are properly understood by the public and the relevant competent authorities before a decision is made.

The **Environmental Statement (ES)** is the main document that supports an application so it must contain information on a wide range of issues, such as coastal processes, bathymetric surveys, benthic communities, fish surveys and archaeological and historic remains. That information is given in the ES under a series of environmental themes specified in the EIA Directive Article 3: key for the roles of HSC are the themes of 'landscape' and 'cultural heritage'. From a developer's point of view, the careful preparation of an ES will provide a number of benefits to a project, all of which centre on minimising adverse environmental effects and facilitating a satisfactory outcome for the project, thereby reducing costs:

1. A useful framework within which environmental considerations and design development can interact.
2. Environmental analysis may indicate ways in which the project can be modified to avoid or mitigate possible adverse effects.
3. Thorough environmental analysis and provision of comprehensive information allows the consenting authorities to reach a decision more rapidly.

4.2.2 HSC and EIA scoping and screening

Historic Seascape Characterisation will be valuable to the applicants and their historic environment consultants during the initial assessment or desk-based study for the applicant's EIA scoping report and can assist in identifying potential environmental effects, their significance and other issues.

English Heritage and the relevant local authority are consulted by the MMO on all applications in England before the MMO adopts a scoping opinion on the information to

be included in an Environmental Impact Assessment. HSC will assist English Heritage and local authorities in informing and framing their response to the consultation in local, regional and national contexts. The HSC GIS output provides a strategic level characterisation of the cultural dimension of the coast and the marine zone; its character type hierarchy reflects national, regional and local scales of perception, and in addition to coastal land, these are mapped at the main marine levels of their expression: sea surface, water column, sea floor and sub-sea floor. This approach allows the user to select the scale and level of data relevant to their queries. The database incorporates the necessary transparency in its assessment, with confidence ratings attached to the HSC character assessments themselves.

As already noted, Character Type text descriptions are linked to the HSC GIS, providing an overview of coastal and marine historic cultural character in a consistently structured format and comprehensible language intended to communicate readily with planners and other specialists. They should ensure that the historic environment curators' viewpoint on each cultural character type is understood with clarity in the processes it is designed to inform. The information provided in the texts should give the user a feel for the cultural processes influencing each Type's expression in the present, their historical context and a better understanding of how and why differing areas of the sea are considered to have differing and distinctive cultural seascape character.

The texts also identify some of the current forces for change and pressures on historic seascape character and suggest some potential avenues for further research or management strategies. HSC accords all Character Types equal value, hence it is baseline information, recognising that all areas have landscape and/or seascape character and are better managed with understanding of that character. Beyond the compilation of the baseline HSC, values can, and usually need to, be ascribed at a later stage, in the context of a proposal for change or one of HSC's other applications. Relevant to such value ascription are the considerations set out in English Heritage's *Conservation Principles for the Sustainable Management of the Historic Environment* (English Heritage 2008). But as baseline information, it is important to be clear that HSC itself is value-neutral and is designed to be a positive force in informing change, recognising that landscape itself is a product of change, that change needs to happen, and that well-informed and sustainable landscape and seascape change will respect and retain cultural distinctiveness and legibility for future generations.

4.2.3 HSC and EIAs

As noted earlier, the requirements for Environmental Impact Assessment (EIA) and the framework for its process and content are laid down in the Articles of the EU EIA Directive (http://ec.europa.eu/environment/eia/full-legal-text/85337.htm). Since that Directive came into force, various guidance documents have been published regarding the inputs of historic environment information to EIA Environmental Statements (ES). Most of those are now out of date or were superseded by the National Planning Policy Framework in 2012.

A relevant guidance document is 'Historic Environment Guidance for the Offshore Renewable Energy Sector' prepared for COWRIE by Wessex Archaeology in 2007, which is discussed above in Section 3.2.2.3. As noted there, the Guidance focuses entirely on 'Cultural Heritage' themed inputs to ESs, however as the ELC is now ratified by the UK and with HLC and HSC coverage largely completed across England's land, coast and seas, there is ample opportunity now for EIA ES inputs to cover historic cultural landscape and seascape character effects within the 'Landscape' theme for marine development proposals. Considering just the 'Cultural Heritage' inputs to Environmental Statements, the COWRIE Guidance discusses the increasing recognition that the 'entire form of our present environment, even features whose main processes are entirely natural, has been structured by human actions and perceptions' (Wessex Archaeology 2007). It recognises that 'traditionally, frameworks for managing the historic environment have focussed on individual sites and monuments but that 'the

concepts of 'setting', 'landscape' and 'seascape' are becoming increasingly important considerations in addressing the effects of schemes on the terrestrial and marine historic environments' and have been used to enable a consideration of the archaeological heritage to go beyond the focus on individual sites and engage with monuments in their wider setting (vi-vii, 12). The document emphasises that during baseline studies for EIAs 'Where available, reference should be made to Strategic Environmental Assessments, marine Historic Landscape Characterisation [as it describes HSC] or other regional overviews, rather than seeking to write the entire history of area'; (viii).

The EIA process requires the collation of a broad range of documentary and digital resources to provide baseline information for making an informed assessment. The initial compilation of this considerable quantity of data can obscure the overall picture, making it 'difficult to see the wood for the trees'. The strategic level overview of cultural processes in the present provided by HSC offers a valuable framework connecting and giving cultural context for those detailed inputs to EIA assessment.

The structure of the HSC output, comprising the GIS characterisation and Character Type text descriptions, corresponds well with providing an EIA's first stage assessment of the broad activities and key features dominating the marine and coastal environments. It meets the key aims and objectives of the EIA process by:

1. Providing a firm evidence base for making a first stage assessment of the character of human cultural and historic activity within an EIA area.

2. Enabling the area-based consideration of landscape and seascape character in the EIA process, interoperable with consideration of other cultural and environmental aspects.

3. Providing a resource for identifying available data sources required for making more detailed assessments of potential impacts of activities within EIA study areas.

4. Providing context for understanding other, predominantly point-based, data sources relating to the historic environment which also feed into the assessment such as HER data.

5. Providing context for making preliminary assessments of the need for further research and data gathering.

HSC highlights dominant patterns of cultural expressions, such as the recurring presence of infrastructure features, concentrations in wrecks and obstructions, mapped palaeoenvironmental features such as palaeo-channels (where data is available) and describes their roles in relation to specific human activities. The HSC output provides valuable contextual information on a broad-brush scale.

The characterisation provides an indication of the historic cultural processes which have shaped the historic character of a marine or coastal area in the present; as such there is considerable scope for it to inform the assessment of potential effects, negative and positive, on that historic character.

Providing Context

The structure of the text descriptions for the HSC database provides a succinct overview of the character of different activities when reviewing cultural and historical human processes. They provide not only a greater understanding of historic character, in a form readily comprehensible by other professionals, but also give an understanding of time-depth, necessary to providing a temporal context for dominant activities within the EIA study area.

The HSC GIS provides immediate access to a spatial representation of the extent and coverage of different human activity. The correspondence of the HSC characterisation

with the main layers of the marine environment provides clarity and better integration with the broad range of marine data expressed within similar layers.

The approach to EIAs has traditionally been focussed on point data, collating wrecks, obstructions and reported losses from different repositories including the English Heritage Archive and UKHO databases. Use of HSC, especially if combined with a character sensitivity assessment, will provide a basis for making statements of effects on the typical and commonplace historic character of marine environment, everywhere, in the different levels of the marine environment (sea surface, water column, etc) and at various scales of perception. This gives HSC a powerful capability to contextualise the coverage of known individual features, often deemed the rare and the special. More specifically, incorporating such character statements drawn from HSC will give the EIA direct relevance to the requirement stated in Marine and Coastal Access Act 2009, Section 54 that historic and archaeological characteristics are considerations to be kept under review in the identification of Marine Plan areas and in the preparation and review of Marine Plans.

The sub-division of the HSC characterisation into four marine levels and three scales of perception facilitates its use as a contextual framework for the higher resolution assessment of other datasets bearing on activities, resources and potential impacts across different levels of the marine environment: the data required to assess and manage risk for activities on the sea surface will inevitably differ from those on the seabed.

4.2.4 Case study scenario 2: scheme to remove tin-bearing sand from the North Cornwall Coast

To provide a case-study scenario for this report a proposed scheme to remove tin-bearing sand from three near shore areas off the north Cornwall Coast between St Ives and Perranporth (Fig 6) was reviewed using this project's HSC GIS to illustrate how the data might be used by the local authority, in this case Cornwall Council, in providing a view on the project's EIA scoping report. The scenario is based on the scoping report which outlines the issues which are proposed to be further studied during the EIA to support the application for a MMO aggregates dredging licence (Goodman 2012) and the MMO's Screening and Scoping Opinion (MMO 2013b). It should be noted at the outset that, whilst it falls into the MMO's aggregates category for the purposes of marine licensing, this project is unique in its particular characteristics, impacts and methodologies and is very different from a typical marine aggregate dredging project.

A useful first step in applying HSC would be to examine the conflated HSC GIS layer for the South West Peninsula HSC project which is a 2-D representation of the whole area (Fig 7). This gives a general impression of the HSC for the north coast of Cornwall and allows the user to become familiar with the dominant character types and the dominant historic processes they represent. The next stage would be to begin the more detailed appraisal. This involves assessing the impact of the tin-bearing sand extraction and determining which levels of the marine tier are likely to be most affected by which activities in the proposal.

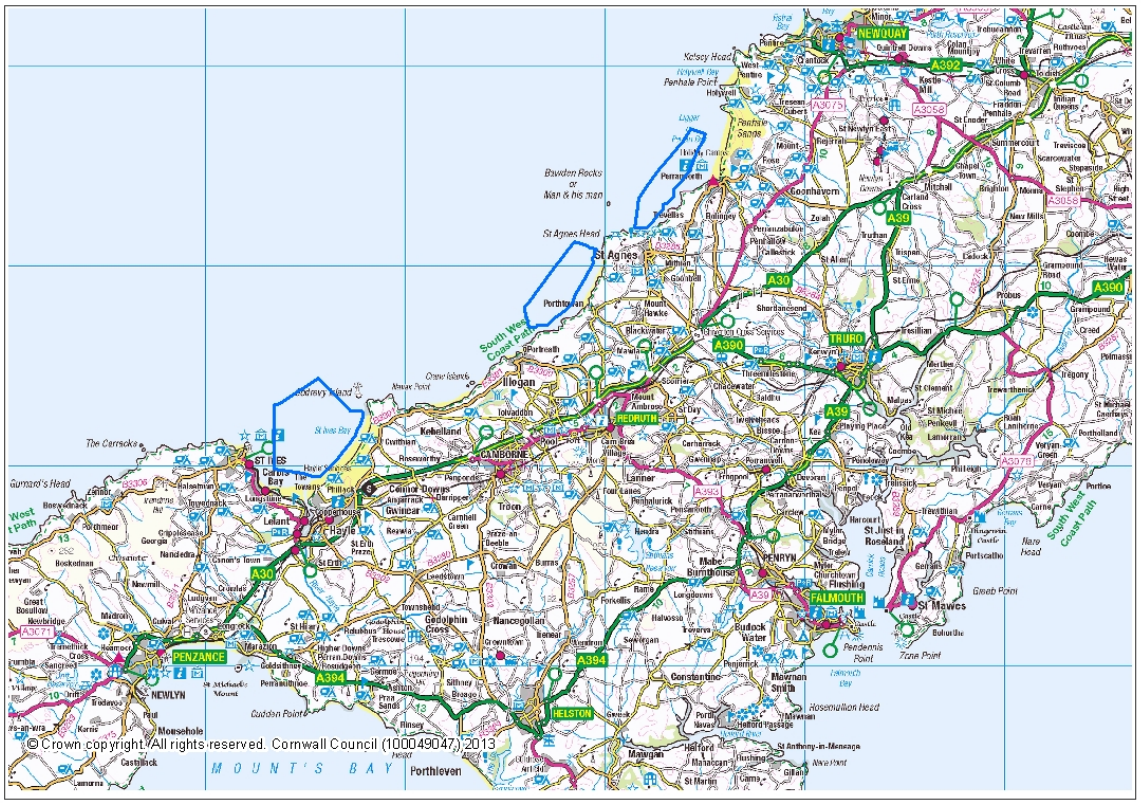

Fig 6: The three proposed tin-bearing reserves off the north coast of Cornwall (outlined in blue)

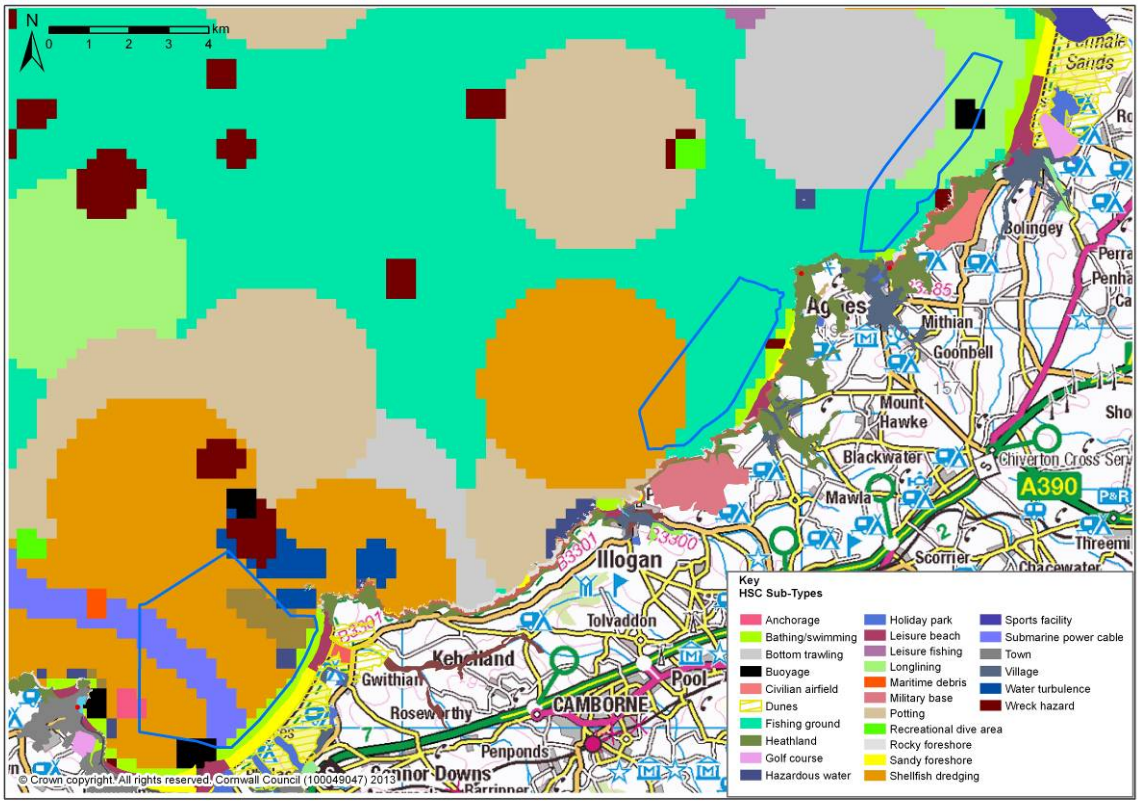

Fig 7: The three proposed tin-bearing reserves, conflated HSC

The EIA scoping reports describes that it is proposed to excavate the sand to a depth of between 0.9 and 2.3m either by a seabed crawler excavator or a machine suspended off a walking jack-up platform (Goodman 2012, 3). Following extraction of a tin concentrate about 95% of the excavated material will be returned to the seabed. If feasible the excavation will be shuttered as it progresses to enable the sand that is returned to the sea to be replaced without affecting the unused resource. It is also proposed to carry out the excavation in precisely calculated lanes with gaps between in order to sustain the life-forms that rely on the seabed. The marine impacts of the proposed scheme include sand removal and screening, sea bed storage of screened sand (if needed) and marine transport to a quayside offloading facility. Physically the scheme will affect each level of the marine tier and therefore can be expected to impact on the historic character of each. The user will address the issues that arise from the analysis of each vertical level and horizontal zone expressed by the HSC layers (sea surface, water column, sea floor and sub-sea floor and coastal land in the HSC database) and highlight particular aspects relevant to the EIA scoping report and to the environmental themes to be considered for an ES later in the EIA process.

Those aspects are discussed briefly in the following sub-sections, drawing on both an examination of the HSC GIS database and it's accompanying Character Type texts. Those texts are structured consistently according to criteria that include an introduction on 'Defining/Distinguishing Attributes and Principal Locations' followed by 'Historical Processes', 'Values and Perceptions', 'Condition and Forces for Change', 'Rarity and Vulnerability' and 'Sources'. Their non-technical content should render them readily comprehensible to professionals in fields other than the historic environment. The Character Type and Sub-type descriptions used in the following sections are derived from the texts to be found in Section 3 of this report.

4.2.4.1 Sea surface HSC

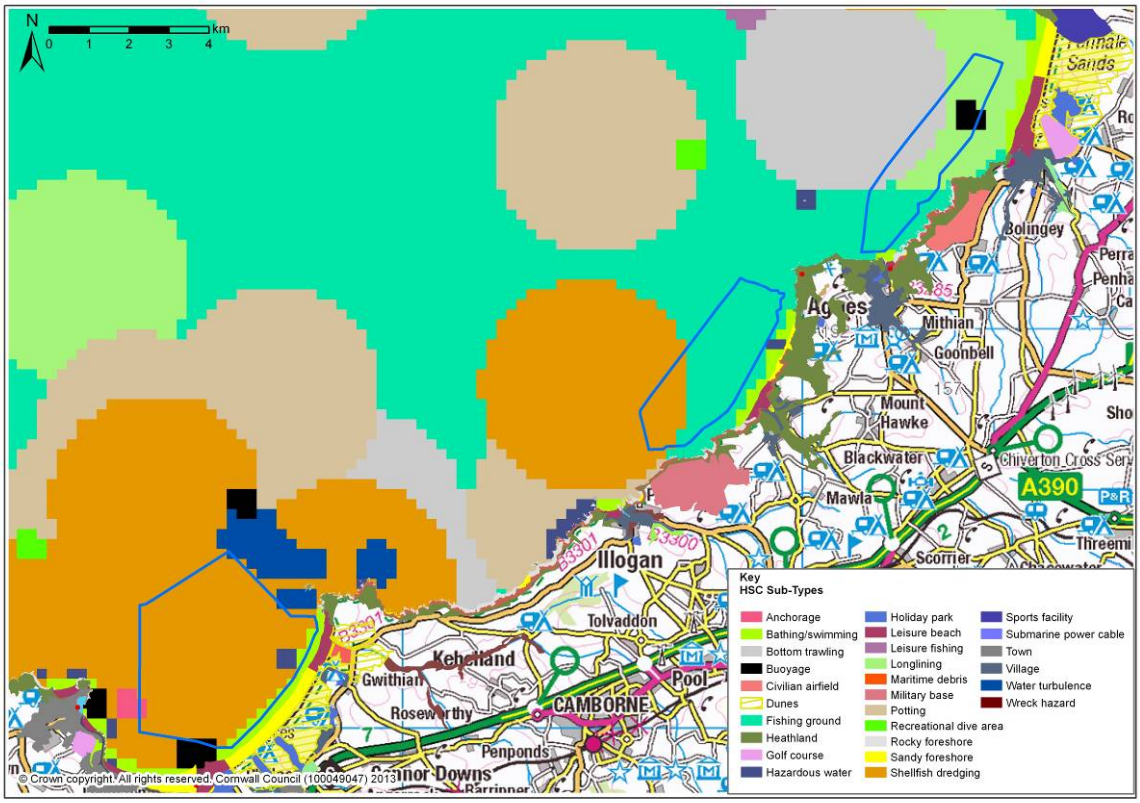

Fig 8: The three proposed tin-bearing reserves, sea surface and coastal HSC

At the sea surface, the present dominant historic character of most this part of the north Cornwall inshore waters is **Fishing** (Fig 8). This Character Type refers to areas of the sea, estuaries and rivers whose character is dominated by activities concerned with the capture or gathering of wild fish and unfarmed shellfish stocks by various methods such as trawling, netting, trapping, potting, dredging and collection by hand. This includes directly associated landing, marketing, processing and distribution facilities.

In the St Ives Bay area this is mapped as the 'Shellfish dredging' sub-type, which refers to areas characterised by the regular commercial collection of naturally-occurring shellfish stocks for food, bait or other products using a dredge towed behind a fishing vessel. In UK waters the target is usually scallops. Scallop dredges consist of a ruggedly constructed triangular steel frame and tooth-bearing bar, behind which a mat of linked steel rings is secured. A heavy netting cover joins the sides and back of this mat to form the bag in which the catch is retained. Scallops, which usually lie in sand or fine gravel, are raked out by the teeth and swept into the bag. The area of Porthtowan is 'Fishing ground' (modern) with some 'Shellfish dredging' (modern) at the western edge. The Perranporth area comprises, from west to east, 'Fishing ground' (modern), 'Bottom trawling' (modern). Fishing ground refers to an area regularly exploited for commercial fish and/or shellfish extraction, but within which the locations of actual fishing activity at any given time may vary, seasonally and over other temporal cycles according to the behaviour of the target species concerned and regulations governing their exploitation. Bottom trawling refers to commercial fishing involving trawling the lowest levels of the water column and/or the surface of the sea floor, the demersal and benthic zones respectively. These methods often result in disturbance to the sea floor itself. The most widely used methods are otter trawling and beam trawling.

There is potential for wrecks as of fishing boats as well as for residual remains of leisure and industrial fishing, this might include lost gears, weights or nets or similar. It is possible that during the dredging exclusion zones might be set which would close off traditional fishing areas and impact on the historic character of the seas surface in the short or long term.

At the east of the St Ives Bay area are some **Navigation Hazards** mapped as as 'Hazardous water' (submerged rocks) and 'Water turbulence' in the area of the strait between Godrevy Island and the mainland and some **Navigation Activity** in the form of 'Navigation routes' marked by buoyage towards the entrance to Hayle harbour in the St Ives area and offshore from Perranporth and an anchorage off St Ives itself. Flotsam and jetsom might be expected in these areas.

The Character Type of the inshore stretch of the St Ives Bay area, from the mouth of the Hayle Estuary to Gwithian is **Recreation**, mapped as Sub-types 'Bathing/swimming'. The predominant activity here is surfing which is an intensive all-year round activity along this part of the coast, and is included in this Sub-type. Again these activities are likely to be disrupted in the short or long term leading to loss of historic character for this tier and the dredging might also cause irreversible changes to wave impact and tidal flow which would need to be assessed.

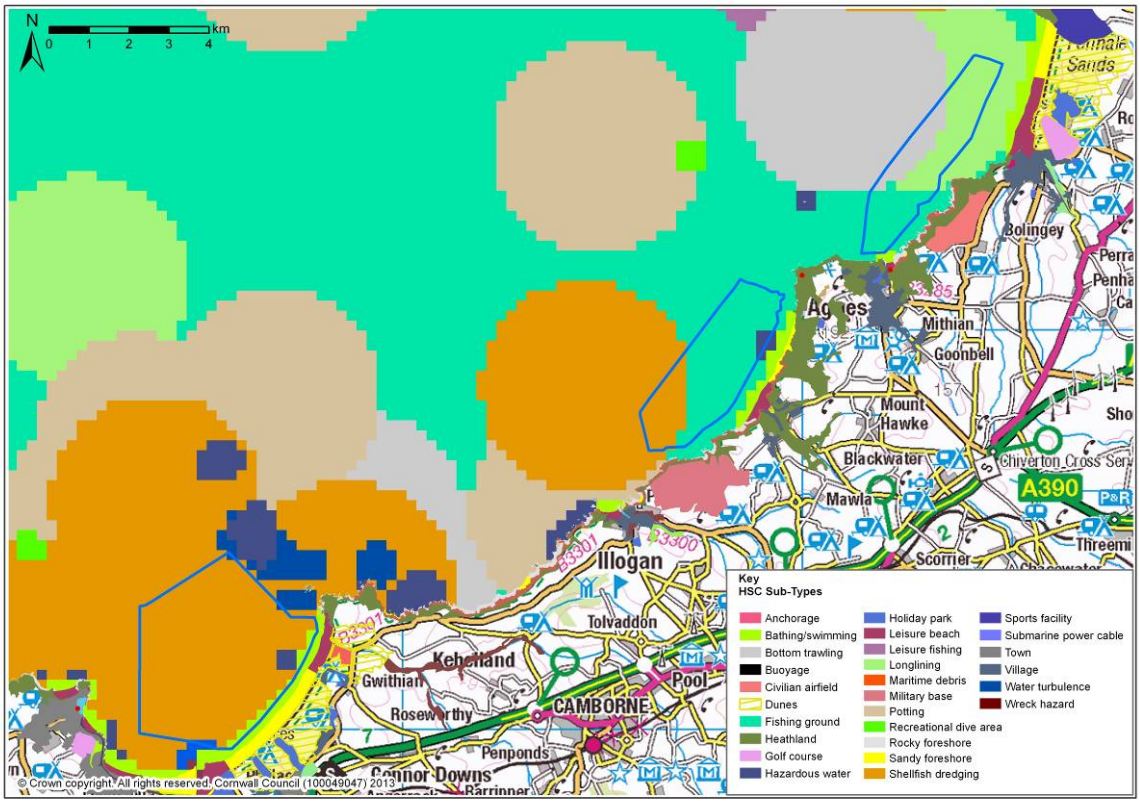

Fig 9: The three proposed tin-bearing reserves, water column and coastal HSC

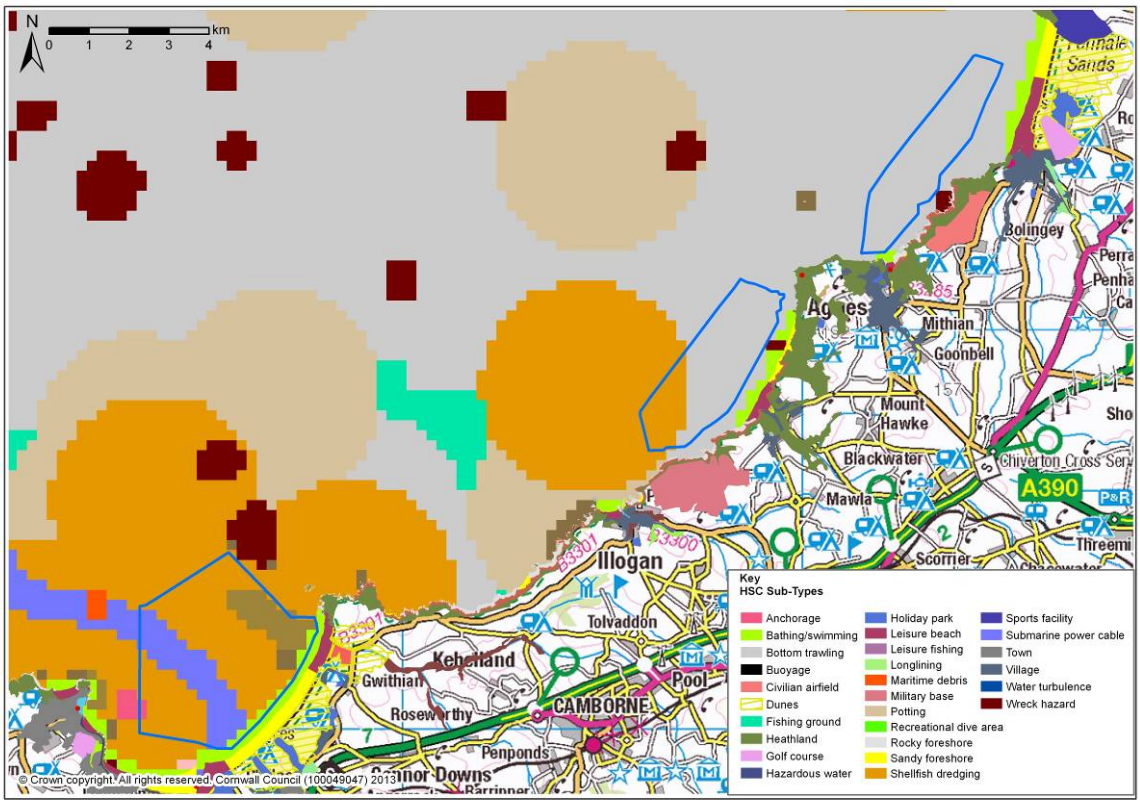

Fig 10: The three proposed tin-bearing reserves, sea floor and coastal HSC

4.2.4.2 Water column HSC

At water column level, the present dominant character of the three areas is mapped as **Fishing** (Fig 9). There is potential for material remains indicative of netting and seining activities in particular, but with some dredging in sandier areas, while closer inshore coastal fixed netting was widespread on the shallow shelving beaches and estuaries. There is also potential for wreck debris as well as for residual remains of leisure and industrial fishing. As wit the sea surface, traditional fishing areas might be close off during the dredging which impact on the historic character of this tier.

4.2.4.3 Sea floor HSC

At sea floor level, the present dominant character of the three areas remains similar to that of the tiers above (Fig 10). The buried cable connecting the South West Wave Hub to Hayle can be seen crossing the St Ives Bay area west of centre (**Energy** — 'Submarine cable') while to the east is the sewage outfall at Gwithian (**Processing** — 'Sewage works').

Many sites and features of archaeological and historic interest found in this level will directly reflect the parent activities occurring in the body of the water above (as alluded to in the discussion of the historic character of the sea surface and water column). Along with the sub sea-floor this level is likely to contain the most tangible material expressions of human maritime activity. In this sense the HSC will allow users to map those areas that can be expected to incorporate the greatest stability and time depth in their character or be rich in archaeological remains and therefore potentially costly to mitigate if developed, while also highlighting those areas that might be expected to more easily accept change.

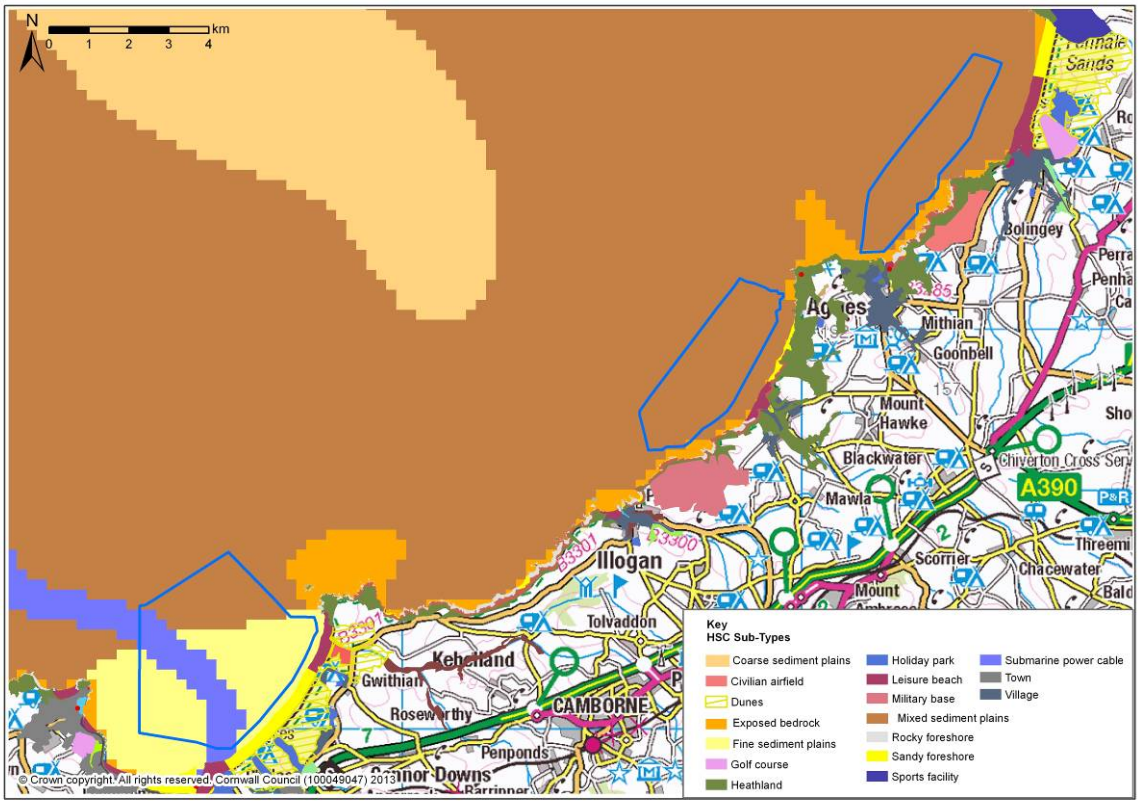

Fig 11: The three proposed tin-bearing reserves, sub-sea floor and coastal HSC

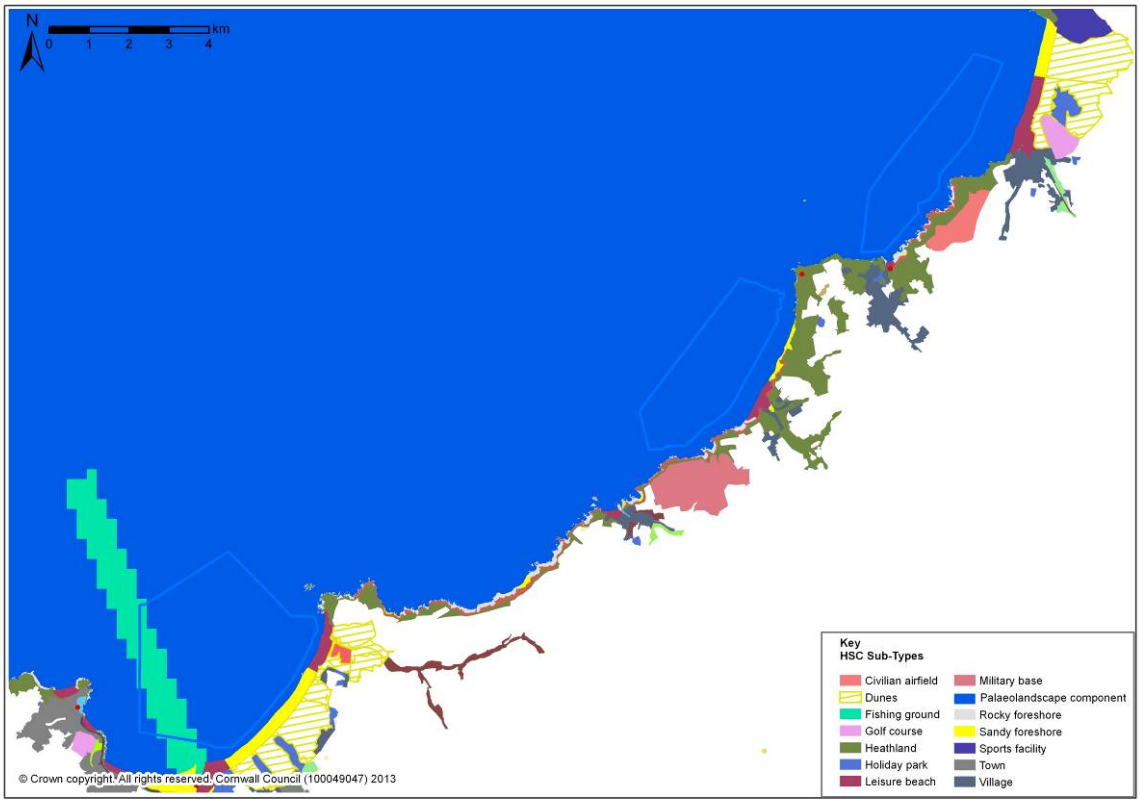

Fig 12: The three proposed tin-bearing reserves, previous (4) and coastal HSC

Such areas can be important as spawning grounds and habitats for particular commercially-exploited fish species such as flatfish. This Character Type's expressions and future are closely affected by marine processes such as sediment transport regimes including erosion, effects of sea level change and global warming and by direct human activities such as intrusive fishing activities (e.g. trawling and dredging) and offshore developments (e.g. wind farms, tidal barrages, and aggregate extraction). The effects of these activities could alter the environmental conditions and therefore potential survival of prehistoric and historic features, sites and artefacts lying on or partially embedded within this Character Type. The removal of tin-bearing sand will affect the historic character of these areas and marine geophysics would be required to identify the most obvious features and artefacts lying on the seafloor. The effects are not likely to be restricted to the site of the installation either and any sediment material displaced may smother other areas of the seafloor and cause the physical loss or damage to other areas of historic character. Conversely, however, processes may also bring some sites, features and artefacts to light allowing for their discovery during dredging works.

4.2.4.4 Sub-sea floor HSC

The present dominant character of sub-sea floor of the tin-bearing sand extraction area is mapped as **Cultural Topography (Marine)** - mixed and fine sediment plains, crossed in the St Ives Bay area by the buried Wave Hub cable (**Energy** — 'Submarine cable') (Fig 11). However, analogous with the sub-sea floor in extensive parts of this area is the previous character HSC for the near shore areas of north Cornwall coast which is mapped as having a possible '**Palaeolandscape component**' (Fig 12). This shows evidence of, or potential for, buried Holocene landscapes, probably from the Mesolithic onwards . Closer to shore, these buried landscapes are likely to be younger, possibly Bronze Age in date reflecting gradual sea-level rise after the Flandrian Marine

Transgression. The tin-bearing sand is contained within the top layer of sand on the seabed and is between 0.9 and 2.3m thick and a range of techniques are being considered for the removal of a tin pre-concentrate from the seabed (Goodman 2012, 1). However, dredging might disturb underlying deposits and thus irreversibly change the historic character of the sea floor and the sub sea floor and HSC would highlight the requirement for geotechnical investigation at an early stage.

4.2.5 Discussion

This case study demonstrates that there are significant roles for using HSC in the MMO's aggregates dredging license application procedure and in particular in the EIA scoping and screening process. The HSC products will be an important part of the evidence base for future EIAs and other aspects of the dredging license procedures. Use of HSC can provide an understanding of the cultural processes that have shaped the current seascape in and around areas for which aggregate dredging is being proposed. As EIA is required to consider a huge range of human activities and different themes of environment impact, understanding the many roles and imprints of cultural forces in shaping seascapes is crucial, not only in matters of traditional heritage concern such a shipwrecks but on other aspects too, such as expressions of marine topography and ecology. The information can highlight the close inter-relations between the cultural, ecological, geological and geomorphological aspects which cannot be neatly separated out when considering effects on the marine and coastal environment.

5 Conclusion

This Applications Review was designed to identify and demonstrate some of the capabilities of Historic Seascape Characterisation and its potential for application to various planning and outreach scenarios. The review has illustrated how HSC can enable the historic character of our present coastal and marine seascapes to play its full part in shaping culturally distinctive and legible seascapes for the future, using case-studies to support the discussion.

The review of HSC applications has illustrated the roles of HSC for a wide range of contexts through a review of the potential applications of HSC on a broad scale, taking account of current policies and legislation, government priorities and the needs of stakeholders in the marine and historic environment. In order to contextualise the discussion, the review considered the relevance of HSC to national and international government contexts including UK Legislation, marine planning infrastructure and the responsibilities of English Heritage, EU Marine Policy and the European Landscape Convention, and the impacts of climate change on the historic environment and our perceptions of landscape.

The Review has highlighted the roles of HSC in delivering baseline information at a strategic level, providing valuable context and extending the principles of historic characterisation to informing sustainable management of change, marine planning and wider, more informed public engagement with our coastal and marine seascape.

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7 Abbreviations

ADS	Archaeological Data Service, York
ALSF	Aggregates Levy Sustainability Fund
AONB	Area of Outstanding Natural Beauty
ASA	Archaeological Study Area
BMAPA	British Marine Aggregates Producers Association
Cefas	Centre for Environment, Fisheries and Aquaculture Science
COWRIE	Collaborative Offshore Wind Research into the Environment
CPA	Coast Protection Act 1949
CSUS	The Cornwall & Isles of Scilly Urban Survey
DBA	Desk-based assessment
DCMS	Department for Culture, Media and Sport

Defra	Department for the Environment and Rural Affairs
EH	English Heritage
EIA	Environmental Impact Assessment
ELC	European Landscape Convention
ENG	Ecological Network Guidance - the ecological criteria that the overall MPA network (MCZs plus existing MPAs) has to meet.
ES	Environmental Statement
FEPA	Food and Environment Protection Act 1985
FOCI	Features of Conservation Importance – habitats and species listed in the ENG.
GIS	Geographic information System
HEAP	Historic Environment Action Plan
HER	Historic Environment Record
HLC	Historic Landscape Characterisation
HSC	Historic Seascape Characterisation
ICZM	Integrated Coastal Zone Management
IPC	Infrastructure Planning Commission
JNAPC	Joint Nautical Archaeology Policy Committee
JNCC	Joint Nature Conservation Council
MCZ	Marine Conservation Zone
MIPU	Major Infrastructure Planning Unit of the Planning Inspectorate
MML	Marine Minerals Ltd
MMO	Marine Management Organisation
MNR	Marine Nature Reserve
MoU	Memorandum of Understanding
MPA	Marine Protected Area
MPS	Marine Policy Statement
nm	nautical mile
NHPP	National Heritage Protection Plan (English Heritage)
NIA	Natural Improvement Area
NPPF	National Planning Policy Framework
NSIPs	National Significant Infrastructure Projects
RCZAS	Rapid Coastal Zone Assessment Surveys
SCA	Seascape Character Assessment
SMP	Shoreline Management Plan
SSSI	Site of Special Scientific Interest
SHERF	Scilly Historic Environment Research Framework
SWARF	South West Archaeological Research Framework
SWCP	South West Coast Path

UKHO United Kingdom Hydrographic Office, Taunton

WHS World Heritage Site