

**Broad Character: Cultural Topography**  
**Character Type: Palaeolandscape Component**  
**National Perspective**

**INTRODUCTION: DEFINING/DISTINGUISHING ATTRIBUTES**

The Character Type Palaeolandscape includes the following Sub-types:

- Palaeolandscape component
- Palaeochannel
- Submerged forest
- Peat deposits

This Character Type includes surviving areas of ancient topographic features of former exposed land with evidence of strong potential for associated palaeoenvironmental deposits and/or old land surfaces. Many are areas that were once dry land at times of low sea level during the glacial periods and within several millennia to either side of them, when much water was locked up in the ice sheets. The relevance of these to HSC is as areas of former human habitat whose past topographic and ecological regimes shaped early human cultural activity and the perceptions it reflected, as well as our present understandings of those past landscapes. In intertidal or marine contexts, these will now mostly be submerged beneath the sea, buried beneath post-transgression sediments or buried deep in the muds and silts of estuaries and rivers. Part of this Character Type includes submerged forest remains recorded in some intertidal and inshore areas.

'Palaeochannel' refers to the course or channel of a river or stream preserved as a geological feature (<http://thesaurus.english-heritage.org.uk/>).

Submerged forest refers to tracts of submerged land retaining macrofossil evidence, often in situ, for former woodland and other woody vegetation cover. Submerged forests are strong indicators of submerged early land surfaces and contain important information relating to past human activity and habitats.

Peat deposits comprise unconsolidated semi-carbonised plant remains formed in freshwater-saturated environments. As a Sub-character Type, peat deposits refer to those formed in earlier periods and may be exposed by erosion on the land, intertidal or sea-floor surface, or they may be buried beneath later deposits. Their excellent preservation of organic remains gives peat deposits a particular importance in understanding past environmental conditions but they also have a vital role in terms of cultural landscape perception. They reflect areas of former bog which was often at the margins of the regularly visited and territorially familiar, a position ripe for endowment with spiritual significance and enhanced by a special reverence for water evident in early religions. Many ritually deposited items and hoards, and human bodies, have been found in peat deposits. Other, possibly more functional, artefacts include prehistoric trackways, such as those found on the Somerset Levels. Later cultural activity includes cutting and drying of peat for fuel, often the subject of the specific right of 'turbary' on common land, and in more recent times, industrial-scale peat extraction for garden soil enhancement. Many areas with rich peat deposits are now areas enjoyed recreationally by walkers and others.

**HISTORICAL PROCESSES; COMPONENTS, FEATURES AND VARIABILITY**

The earliest dated evidence for human activity across north west Europe was recently pushed back to 950,000 BP by discoveries of exposed sedimentary sequences at Happisburgh and Pakefield on the coast of Norfolk and Suffolk ([www.ahobproject.org/Happisburgh](http://www.ahobproject.org/Happisburgh)). For all glacial periods there is potential for archaeological material deposited in sediments on the continental shelf. For example, Pleistocene fluvial, glacial and periglacial and beach gravels form much of the Palaeolithic archaeological record. Furthermore, Late Devensian and Holocene gravels

provide much of the buried archaeology of valley landscapes (Brown 2004). Processes such as climate change and the fluctuation of sea levels, particularly those resulting from glaciations, over the last 2 million years have contributed to the deposition of sand and gravels which now lie on the seabed (Gubbay 2005). These materials were originally deposited by river systems that are now submerged (BMAPA 2000; ODPM 2005). These processes periodically exposed the seabed as dry land, creating a space for human occupation and the potential for associated archaeological evidence. Hence, the potential of survival of palaeolandscapes in marine deposits in and off English waters is immense. Fulford *et al* (1997) mention that 'recent interest in the potential of underwater landscapes around England was stimulated in part by an audit of the English coastline in 1997 which recorded coastal prehistoric peat deposits that were seen to follow ancient river systems extending offshore'; this makes reference to the rich source of Mesolithic material from the Solent area (e.g. Bouldnor Cliff) and the large number of finds found in Essex (Flemming 2004; Fulford *et al* 1997: 108; Momber 2004). More areas have been discovered since then, off the Humber being an example. Furthermore, there are confirmed examples of prehistoric sites in the intertidal zones from Neolithic and Bronze Age in England (e.g. Wootton Quarr and Langstone Harbour) stressing the historic character of these submerged landscapes. Fleming (2002) also identified a series of hotspots for palaeolandscape including fossilised river valleys, cliff coasts, estuaries, wetlands, mudflats and peat deposits.

In addition numerous archaeological remains have been recovered offshore through processes such as fishing and aggregates dredging, indicating the presence of further landscapes. For example worked bones dating to the Mesolithic have been trawled up by fishermen around the Dogger Bank and Brown Bank areas off the east coast and a number of Palaeolithic handaxes were recovered from aggregate dredging area 240 off Great Yarmouth.

Given the current limited understanding and early stages of research regarding this Character Type, various considerations were emphasised by Dix *et al* (2004) when seeking to understand its components, features and variability:

- There is a spatial and temporal diversity of archaeological material that potentially exists in the submerged areas of the UK continental shelf
- Large scale patterns of land use are evident in the terrestrial record which are likely to be applicable to the submerged regions
- The present seabed is not an exact analogue of the 'lowstand' land surface
- The submerged prehistoric material is likely to exist in one of the following states of preservation: primary, secondary or tertiary context
- The research potential of secondary contexts for the Upper Palaeolithic and Mesolithic and tertiary contexts for all periods needs to be further examined
- The prehistoric potential of the submerged material goes beyond interpretations referring to 'landbridges' or migration corridors
- Areas identified for further research include the antiquity and importance of coastal exploitation, and human response to sea level change
- Effective interrogation and exploitation of the submerged archaeological resource will require secure and accurate landscape reconstructions
- A significant quantity of archaeological material will be reworked by marine processes. Understanding the processes behind this is crucial to our understanding of submerged landscapes and future work should address these processes in detail.

A more secure understanding of marine taphonomic processes may aid our understanding of the potential and location of marine secondary and tertiary contexts.

## **VALUES AND PERCEPTIONS**

Despite a long-standing tradition of research into coastal and marine landscapes and landscape perceptions in some areas, such as the Isles of Scilly (Thomas 1985), this has

been limited. The maritime archaeological community has now started to recognise that maritime archaeology is not only concerned with shipwrecks but also prehistoric submerged landscapes. The archaeological potential that exists on the continental shelves has been recognised in the UK, especially through the Aggregates Levy Sustainability Fund (ALSF) projects (see <http://ads.ahds.ac.uk/project/alsf/>), due to raised awareness from the recent expansion of industrial concerns onto the shelf.

However, for the wider community, the wider archaeological potential of these submerged landscapes is still mainly unknown. The latent public interest in undersea archaeology is already evident from the popularity of television series focussing on shipwrecks. The need to extend this to submerged landscapes is now being addressed by work such as Natural England's '*Undersea Landscapes Campaign*' in 2008-9, and by considerable public interest which followed the screening of a Time Team special entitled '*Britain's Drowned World*' in 2007. Historic Seascape Characterisation itself can build on this interest by providing a resource relevant to everyone's familiar area of the coast and sea, and which can inform and be responsive to public understanding.

There is also a developing interest in palaeolandscapes within those sectors of society which regularly come into contact with the resource. In particular fishermen and aggregate dredgers who often recover artefacts such as stone tools and bone. The Marine Aggregate Industry Protocol for the Reporting of Finds of Archaeological Interest funded by the ALSF is a clear expression of interest and support from the marine aggregates industry.

## RESEARCH, AMENITY AND EDUCATION

Processes which periodically exposed the seabed as dry land created a space for human occupation and the potential for associated archaeological and palaeoenvironmental evidence. The potential of these marine deposits is therefore immense, and there is a need to enhance our understanding of these drowned landscapes and palaeoenvironments which are still relatively poorly understood. The significance of this potential is emphasised by the discovery of the stratified Mesolithic occupation site at Bouldnor Cliff (Momber 2004). To date, this is the only stratified prehistoric occupation site identified in UK waters. Additionally, there are submerged prehistoric landscapes and associated palaeoenvironmental material dating to the Neolithic and Bronze Age both off the Isle of Wight coast and off the New Forest, running for kilometres along the coast (HWTMA 2006, 2008). Remains of a submerged forest of St Mary's. Isles of Scilly, discovered in 2005, have recently been radiocarbon dated to the Late Mesolithic, a charcoal peak in the vegetation record could indicate slash and burn (Camidge et al 2010). Today, these provide baseline information about the time-depth of those now submerged landscapes.

Since the end of the last glaciation, rising sea levels resulted in the inundation of many coastal areas that were once terrestrial habitats. These submerged landscapes are now a major focus of underwater archaeological investigation because they potentially contain a high proportion of the prehistoric record of human settlement on coasts (Flemming 2004; Quinn et al 2000; Sonnenburg and Boyce 2008). On an international scale, the palaeolandscapes of the North Sea are crucial to our understanding of human development and periods of prehistory for which we have little evidence, as illustrated by the deposits uncovered at Pakefield and Happisburgh. The UK Continental Shelf is under intensive developmental pressure from a range of threats including mineral extraction and the direct impact of construction (Dix *et al* 2004). Because of these threats, further research will enable a deeper understanding of this Character Type before it is lost to future human activity or to erosion processes. Public awareness should also be raised through dissemination programmes which focus on these unique submerged landscapes.

Some academic research has begun to address this Character Type, including Southampton University's 'Reassessment of the Archaeological Potential of Continental Shelves' (Dix *et al* 2004) and Birmingham University's 'North Sea Palaeolandscape Project,' now being extended to other areas. The form and scale of palaeogeographic and palaeoenvironmental change of the UK continental margins is of particular relevance to the processes of reconstruction, as it can radically alter prehistoric and historic timescales. Therefore, there is a need to understand the character of the UK continental margins and the short- and long-term processes that affect them. In an ideal world research into submerged prehistoric landscapes would proceed on very small "local" spatial scales (studies in the order of tens of metres through to a few kilometres), thus allowing very fine details to be observed. These smaller scale studies could then be fed into larger "regional" overviews (10s to 100s kms). In practice, the realities of underwater work render such a bottom-up approach sometimes difficult to undertake mainly due to lack of funding invested in this type of research. It is also clear, as on land, that the pace of change and areas being subjected to current and future development pressure far outstrip any possible progress at such fine-grained scales. Historic landscape and historic seascape characterisation provide one response to this problem. Dix *et al* (2004) suggest that the majority of research on continental shelf archaeology will be undertaken on the regional scale, with only occasional, more detailed analyses of local scale studies being possible. In this sense, the adoption of a top-down approach could be used to maximise the regional data and, through appropriate analysis, utilise it to effectively target local detailed surveys (Dix *et al* 2004).

In terms of formal education, palaeolandscapes provide excellent case studies for cross-curricular work looking at environmental change and how it affects populations over time.

#### **CONDITION AND FORCES FOR CHANGE**

Since the last glacial maximum, rising sea levels submerged many areas that were once terrestrial habitats. These are under intense pressure from a range of developments including bottom trawl fishing, mineral extraction and the direct impact of construction. Specific threats range from the laying of pipelines to, more recently, the development of wind farms, the wider issues of mineral extraction and the extensive, generalised, impact of fishing and commercial trawling (Dix *et al* 2004). The cumulative knowledge that such developments are producing through Environmental Impact Assessments (EIAs) should enable a deeper understanding of this Character Type before it is lost to modern human actions and erosion processes.

The erosion-losses of unconsolidated cliffs from around many stretches of the English coastline are widespread and often rapid, but the change from wide-scale sedimentation to active erosion is less common. Pressures on this Character Type are also increasing with the erosion on the sea-floor of drowned soils that were once habitable land.

#### **RARITY AND VULNERABILITY**

Submerged Palaeolithic and Mesolithic landscape features are relatively rare in England, Bouldnor Cliff being an example (see Momber 2004). As such, these deposits are regarded as of national, and even international, importance. Wherever possible, advice is given by historic environment curators to leave these deposits undisturbed due to the extreme fragility of peat deposits and associated faunal remains (and potential human occupation evidence such as structures). Furthermore, Neolithic and Bronze Age submerged landscape components are also relatively uncommon in England. Some examples have been found in areas such as the Solent as well as in tidal rivers and estuaries in England (e.g. Wootton Quarr (Isle of Wight), and Humber Estuary, amongst

others). Prehistoric landscape remains in the intertidal zone are commonly exposed to eroding processes, giving a frequent emphasis on needs to monitor their exposures and record newly exposed ones, Wootton Quarr (Isle of Wight) and Langstone Harbour (Hampshire) being good examples.

Understanding the submerged prehistoric landscape components of the UK Continental Shelf is key to understanding the prehistory of Europe. Submerged prehistoric landscapes can survive with sufficient integrity to provide evidence for settlement patterns, working sites, fish weirs, hearths, food remains, craft and burials (see Flemming 2004; Momber 2004). Submerged prehistoric landscape features represent a nationally and internationally valuable resource holding evidence for how humans used and perceived these past landscapes, re-populated north west and northern Europe after the last glaciation, and adapted to the post glacial environment. They contribute to a more comprehensive understanding of the past and shedding new light on current issues including coastal and climate change.

Natural erosion processes occur along the English coast. However, some places are more severely affected than others (e.g. the coast of East Anglia). These processes appear to comprise the greatest vulnerability of this fragile Character Type.

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