Broad Character: Cultural Topography
Character Type: Cultural Topography (landward)
National Perspective

INTRODUCTION: DEFINING/DISTINGUISHING ATTRIBUTES

The Character Type Cultural Topography (landward) includes the following Sub-types:

- Cliff
- Dunes
- Lake, pond
- Reservoir
- Watercourse
- Wetland
- Lagoon

This Character Type refers to those aspects of cultural topography whose physical expressions occur predominantly to landward of Mean High Water and which possess various aspects of maritime cultural character .

A cliff is defined as a relatively tall, steep and largely exposed face of the local geological formation, usually of rock though in some areas cliffs may form from erosion of softer materials such as boulder clay. Cliffs are formed by the processes of erosion and weathering and are frequent along coasts and rivers. Their form. appearance and profile varies considerably with their composition. Along much of southern England's coastline, cliffs are usually formed by sedimentary rocks such as sandstone, limestone and chalk, the White Cliffs of Dover (chalk) being a well-known example. In south western England. the hardness and jointing patterns of igneous and metamorphic rocks, such as the granite, serpentine, and slate of Cornwall, can form completely different cliffscapes. In East Anglia cliffs are primarily formed from clay and sand, making them very soft and subject to rapidly erosion. Cultural aspects of cliffs include their use as vantage points for the military and for maritime safety lookouts, and recreational uses such as rock climbing and coastal walks. Many have provided ready opportunities for quarrying and other extractive industries. Many distinctive cliffs have specific names and serve as familiar coastal landmarks for users both of the sea and land.

Dunes refer to areas containing hills or ridges of unconsolidated wind-blown sand. The surface of many of the ridges and the intervening slacks may or may not be stabilised by surface vegetation. Cultural aspects of coastal dunes include settlement features and ancient land surfaces sealed by the onset of dune formation and, in some cases, their preservation of sequences of prehistoric and later land surfaces within their fabric during their long development. Their tendency to occur behind landing beaches often produces extensive military defences and structures within dune systems, while the remoteness of some extensive dunes has been used for explosives works such as those at Hayle Towans, Cornwall. Many are wildlife reserves and currently provide a recreational resource for coastal visitors.

Lakes and ponds refer to inland bodies of fresh water, included in HSC where they have a distinct maritime character. 'Lakes' generally refer to the larger examples, and 'ponds' to the smaller, but there is a gradation between the two. Similarly with the extent to which they are artificial: most ponds and lakes have become artificially defined to some extent even if their origins lie in relict glacial meltwater lakes, while some ponds are wholly artificial. Cultural aspects are many and varied. Ponds, for example, are used for a breadth of recreational and inspirational activities by anglers and artists, while many larger lakes also support a range of watersports.

Reservoir refers to a body of water, wholly or partly artificial and sometimes covered, used to collect and store water for a particular function (http://thesaurus.english-heritage.org.uk). Many larger examples were designed to provide supplies of drinking

water and continued to be used as such, while others have become redundant and now serve primarily as wildlife reserves or watersports centres.

Watercourse refers to a channel used for, or formed by, the conveyance of water. Watercourse can be largely natural in formation such as rivers, or artificial such as aqueducts or drainage channels (http://thesaurus.english-heritage.org.uk). Watercourses serve a wide variety of cultural roles including transport of goods and people, water supply, land drainage to enable agricultural intensification, and recreation in the form of angling, kayaking and so on. Watercourses have always had an important place in the perception of the landscape, with river names preserving some of the most archaic of surviving place name elements. By offering channels for communication and obstacles to movement they still frequently form territorial boundaries, a role which dates back as far as we can perceive such boundaries in the landscape. Water was often given a special reverence in early religions which led to the ritual deposition of many individual items and hoards in natural watercourses

Wetland refers to an area whose soil is saturated with moisture, either permanently or on an intermittent cycle, such as fens, marshes and peat bogs. The dominant vegetation of wetlands varies considerably and the vegetation cover may be broken by areas of open water. The surviving extent and distribution of wetlands has been significantly affected by human activity, particularly through land drainage and reclamation for agricultural use and urban expansion. Past and present economic activity includes wildfowling and the cutting of peat for fuel and garden soil enhancement. Many wetland areas are now managed as wildlife reserves and enjoyed recreationally. A notable example of this is the Norfolk and Suffolk Broads, now afforded the equivalent status of a National Park.

Lagoon refers to a body of shallow salt, brackish or fresh water, totally or partially enclosed from the sea by a sand bar, spit or reef running across the entrance. In cultural terms, activities on many lagoons and their adjacent enclosing land are now controlled by wildlife and geomorphological conservation designations, themselves a cultural intervention. The enclosing bars of lagoons' may carry routeways, in some cases metalled roads, taking advantage of the direct route across an otherwise indented coastline. Lagoons are often visited by people for leisure, recreation and inspiration, sometimes with associated facilities to serve them. Lagoons have also on occasion served as areas for military training.

HISTORICAL PROCESSES; COMPONENTS, FEATURES AND VARIABILITY

Frequent components of this Character Type include:

- military defences (e.g. pillboxes, anti-tank cubes, signal stations, fortifications, radar stations)
- maritime safety services (e.g. coastguard lookouts)
- navigation aids (e.g. lighthouses, fog stations, landmarks)
- specifically associated infrastructure and features related to industry (e.g. quarries, mines, lime kilns, railway tunnels)
- specifically associated infrastructure and features related to recreation (e.g. nature reserves, walk trails)
- specifically associated infrastructure related to fishing
- settlements

Prehistoric remains in the form of peat deposits can be found embedded within cliff areas. The early Lower Palaeolithic sites on the East Anglian coast (specifically at Happisburgh and Pakefield) are some examples. These sites lie within sediment units exposed on beaches and the bases of cliff sections. Recent marine geophysical and geoarchaeological work has demonstrated that some sediment units be traced offshore, specifically, off Pakefield (Murphy 2007; Wessex Archaeology 2008). From at least the

16th century onwards, cliff tops with strategic sea views have been important for military, coastguards and fishing purposes. Military sites found on cliff tops include look-outs, pill-boxes, batteries, radar stations, castles and forts. Coastguard look-outs and lighthouses can also be found.

Dunes of wind-blown sand and shell deposits occur along low-lying stretches of shoreline. Some dune systems along the English coast are designated to promote their conservation from various perspectives. For example, Winterton Dunes is an extensive dune system on the east coast of Norfolk, which has been designated as a National Nature Reserve and is within the Norfolk Coast Area of Outstanding Natural Beauty (AONB). Winterton has suffered from extensive coastal erosion and is threatened by sea level rise. In general, dunes are post-glacial creations. They are dynamic features and their development is due to the succession of periods of sand movements and stabilizations. For example, a stabilised land surface may be used for pasture, cultivation and settlement before being affected by further sand blow. Later on, this sand surface may become stabilised and re-used again for pasture, cultivation and settlement. Inundations of blown sand may be rapid and may occur as a result of a single storm, given the conjunction of the right conditions. It has been recorded that depths of 2-3m of sand have covered agricultural land in a single event at Gwithian, Cornwall in historic times (Nowakowski *et al* 2007, 58). Prehistoric and historic remains can be buried within dune systems. Consequently, the time-depth within dune systems should not be overlooked.

Lakes can be formed by a number of natural processes. Tectonic uplift and subsequent erosion of a mountain range can create bowl-shaped depressions that accumulate water and form lakes. The advance and retreat of glaciers can gouge troughs and depressions in the surface where water accumulates. For example, the Lake District features (North West England) result from successive periods of glaciation. These features include the ice-carved wide U-shaped valleys, many of which are now filled with the lakes that give the park its name, impounded by areas of glacial moraine.

Lagoons can be formed through both natural and man made processes as demonstrated by the series of features on the Suffolk coast. Three large lagoons between Benacre and Easton Bavents were formed by the dynamic processes of the coastline whilst a fourth was formed through gravel extraction during the Second World War. Further lagoons on Orfordness were the result of clay extraction.

Reservoirs generally refer to an artificial lake which is used to store water for different uses. Reservoirs are often created by building a sturdy dam. Once the dam is completed, the stream fills the reservoir. When a reservoir is predominantly human-made (rather than being an adaptation of a natural basin) it may be called a cistern. In England, Thames Water has many underground reservoirs beneath London built in the 1800s by the Victorians, most of which are lined with thick layers of brick.

Watercourses have been utilised since prehistoric times in England and settlement patterns have been found close to freshwater sources. Recent evidence from dried up channels of major rivers like the Thames suggests that rivers and lakes may have been used as funeral areas in the later Bronze Age and Iron Age. In East Anglia the extensive watercourses and wetlands known as the Broads were partially formed by the process of peat extraction. This began locally in the 12th century to provide fuel and was undertaken on such a scale that large pits were formed and subsequently flooded, forming the landscape we see today.

Natural rivers and lakes were used as critical water-supply resources as well as waterways for the transportation of people and goods. Most of these have been later modified to consolidate and stabilise their channels or to make navigation more reliable by the construction of artificial channels and flash locks. The expression of many rivers

in the present land and seascape is also modified by the considerable geomorphological changes wrought to most river valley floors by deep deposits brought down from millennia of agriculture and, in some areas, by debris resulting from extensive extractive industries along the river catchments.

VALUES AND PERCEPTIONS

In England, some cliffs have a territorial iconic value. For example, those that face towards Continental Europe, such as the White Cliffs of Dover, forming an outwardly visible national symbol of the country's stand against the threat of invasion during the Second World War.

Dune systems is often valued highly for their sense of remoteness and their unmanaged feel, aspects of character altered when in proximity to housing and where dunes have become subject to golf course developments. Public perception often overlooks that the history of the dune systems is often linked to the marine environment and forms a local economic resource in several respects.

The sense of spiritual fulfilment which lakes often engender has a very long history in the perception of our cultural landscape, together with a special reverence for water evident in early religions. Many ritually deposited items and hoards have been found in present and former lake beds.

Ponds are often individually named as distinctive familiar features in the landscape; many are used for a breadth of recreational and inspirational activities by anglers, artists, those visiting to enjoy the views and to picnic, with many larger lakes supporting a range of watersports.

Watercourses and water bodies in general have been a critical resource for survival, supplying necessary water for communities. They have, and remain, frequently used culturally to define territiorial boundaries, or conversely to defined territorial heartlands: foci for settlement and a sense of community. They are also a source of enjoyment through many recreational activities such as swimming, waterskiing, boating, surfing, and diving. Lakesides, beaches and waterparks are also popular places for relaxing and inspiration, which may be expressed through art. Many people find the sound of flowing water to be calming. Some keep fish and other water creatures in aquariums or ponds for show, fun, and companionship. Water fountains have also been created for public or private decorations.

From industrial and transport perspectives, rivers and estuaries have long been important routeways, used over the millennia as crucial transport systems conveying people and goods. In some cases watercourses have been essential to the economic development of whole regions, as for instance, the Orwell in Suffolk was and still is extensively used to transport goods to and from Ipswich, a riverine route established as early as the Anglo-Saxon period.

Wetlands have been used as a cultural resource for their products for millennia. They have for example been used to source reeds, rushes and sedge for use in thatching, animal feed, etc, and for hunting activities such such as wildfowl trapping.

Cultural perceptions have also often seen wetlands as areas at the margins of territories, a position ripe for endowment with spiritual significance, enhanced by a special reverence for water evident in early religions. Many ritually deposited items and hoards, and human bodies, have been found in wetlands. In the present day, the marginal place of wetlands is reflected in their frequency as the setting for novels and literature designed to invoke fear.

This Character Type generally provides rich wildlife habitats which, in turn, attract a large number of recreational wildlife watchers. Extensive natural environment designations also illustrate the high environmental values which people apply to this Character Type.

RESEARCH, AMENITY AND EDUCATION

The geological history of cliffs has been extensively researched. However, a broader perspective is needed from a point of view which integrates the different aspects of human activities on the landscape/seascape. This may be particularly appropriate in areas such as East Anglia where evidence of early hominin activity has recently been found in eroding cliff deposits at Pakefield and Happisburgh.

In terms of amenity and educational purposes, cliffs are frequently visited by walkers and climbers, amongst others. Therefore, there is potential to enhance the understanding, appreciation and enjoyment of the heritage encountered by these people on the cliffs.

Dunes can often contain well preserved and stratified buried prehistoric and historical remains. The study of the formation of dunes and their link to the marine environment and climate history could provide an important contribution to the understanding of past human activities. Further research on the geomorphology of sand dunes would enhance this capability. Due to the dynamic nature of dune systems, regular monitoring surveys, particularly after major storm events, are appropriate to identify material remains. In areas with acidic igneous and metamorphic geologies, such as Cornwall, areas containing wind-blown sand may be the only locations where bone is widely preserved in historic and prehistoric contexts, so providing an opportunity for the study of past populations that cannot be conducted outside such coastal areas.

Recreation has used dunes mainly as adjuncts to desirable beaches or as bunker-filled golf courses. However, there is potential for encouraging the appreciation of the dunes themselves, their flora and their historic dimension via online resources and carefully-sited in situ information provision, operating in conjunction with nature conservation bneeds. On the west Lancashire coast, for example, many of the extensive areas of sand dunes are protected as nature reserves, both for their flora and for the red squirrel populations surviving in the coniferous woodlands planted to protect the dune systems.

The effect of water quality (pollution) on the historic environment may be a factor affecting the preservation of terrestrial, intertidal, and submerged prehistoric and historic features. Pollution alters the chemical composition of water and soil, often making them more acidic and therefore more likely to damage prehistoric and historic features. However, little research has been undertaken on water pollution and its effect on the marine historic environment (Fulford *et al* 1997).

CONDITION AND FORCES FOR CHANGE

Cliffs will continue to experience the gradual erosion by natural forces as well as the culturally induced long-term threat of sea level rise along the English coast. Human forces for change include the construction of sewerage schemes and coastal defences, amongst others. The effects of these construction processes as well as the movement of water and sediments could damage the potential historical and archaeological remains in this Character Type.

Fixed dunes and dune heath are regarded as priorities for conservation under the European Community (EC) Habitats Directive (www.ukbap.org.uk). The Sand Dune Survey of Great Britain (1993-1995) gives the total area of sand dunes as 11,897ha in England. Major dune systems are widely distributed, being found around the English

coast (except the English Channel (other than Sandwich Bay) and the Thames Estuary). Dune systems are complex and dynamic entities prone to instability and sudden large-scale shifts. This can have significant impacts on the surrounding environment as well as important consequences for recognising, dating, and conserving archaeological remains within these areas. The main threat to dunes appears to be from the expansion of recreation facilities as well as erosion processes and sea level rise. This dynamic and complex environment will naturally change and develop through time. Both natural and cultural processes will directly impact upon this Sub-type and its surroundings such that dune environments will be unlikely to continue evolving as they have done in the past.

Clean water supply is critical for inland areas but there are also concerns along coastal areas about the discharge of water and sewage into the sea, and maintenance of water quality. The effect of water quality (pollution) on the historic environment may also be a factor affecting the preservation of terrestrial, inter-tidal, and submerged prehistoric and historic features.

RARITY AND VULNERABILITY

As already noted, this Character Type is under pressure from a broad range of human activities and their interaction with natural processes which will combine to affect their roles in contributing to our seascape perceptions.

In terms of rarity, along the English coast some cliffs, lagoons and wetlands fall within Sites of Specific Scientific Interest (SSSIs), Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar Sites (which are wetlands of international importance designated under the Ramsar Convention), and in some occasions they are designated as a Heritage Coast. As an example, Tintagel Cliffs (Cornwall) are a SSSI (http://www.naturalengland.org.uk/ourwork/conservation/designatedareas/sssi/default.aspx) and the area of Tintagel is also possesses a wealth of cultural roles, both in terms of its material heritage with nearby Tintagel Castle and many associated features, and for its less tangible popular reverence for many centuries on account of its parts in the legends surrounding King Arthur and the Knights of the Round Table.

Today, a large proportion of the sand dune resource in England is valued and considered rare enough to be designated as SSSI, SAC SPA, and/or National Nature Reserve (NNR). For example, Winterton Dunes, an extensive dune system on the east coast of Norfolk which has been designated as a National Nature Reserve and is within the Norfolk Coast Area of Outstanding Natural Beauty (AONB). Dunes are generally rich in buried prehistoric and historical archaeological deposits. These are usually particularly well-preserved since dunes offer a non-acidic environment. Industrial and early recreation sites, such as golf courses, may also survive well within this environment. Dunes are relatively rare formations, and the prehistoric and historic features found within them and other associated remains could also be rare. The geological, ecological and cultural values embodied by dunes and the other expressions of this Character Type overlap and inter-relate: all are relevant when considering initiatives for change and development which affect them. A consideration particularly affecting lakes, ponds, reservoirs, watercourses, wetlands and lagoons is their vulnerability to activities and events far upstream, and the downflow of concentrate materials such as pollutants and sediments.

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