

Historic Seascape Characterisation (HSC) Thesaurus



Historic England

Historic Places Investigation Team

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Introduction

This Thesaurus lists and provides scoping for the terms deployed in the Historic Seascape Characterisation (HSC) project databases developed through Historic England's HSC programme between 2004 and 2015, culminating in the National Historic Seascape Characterisation (NHSC) which brought those project databases together as a single national database in 2017.

This Thesaurus is deliberately non-specific in its scale of relevance: it does not equate with any one particular scale of HSC assessment. Some terms may be relevant across a broad range of HSC presentation scales while others, notably at Sub-character Type level, will have more restricted scales of relevance. For example, some Sub-character Types given under 'Ports and Docks', such as 'Pier', 'Quay' or 'Terminal Building', may be perfectly appropriate in a fine-grained HSC but their relatively small physical areas and grain of character perception may fall below the threshold needed for coarser grain, more strategic level, work. So in using this Thesaurus, the HSC assessor needs to use discretion in selecting which terms may or may not be appropriate to apply in any particular HSC. Their guide will be the intended roles and presentation scale of the HSC in question.

This Thesaurus gives guidance and inspiration in the particular field of Historic Seascape Character as developed by Historic England. As such, it sits under the over-arching structure of the Historic Characterisation (HC) Thesaurus (http://heritage-standards.org.uk/wp-content/uploads/2016/05/HistoricCharactFull_-Aug2015.pdf), providing one of the specialised and detailed vocabularies anticipated by that Thesaurus (*ibid* Appendix 1.6). In addition to its specialised application, the HSC project databases contributory to this HSC Thesaurus and the NHSC database were completed prior to the 2015 publication of the HC Thesaurus. Future reviews of the NHSC database and of both the HSC and HC Thesauri will seek to remove various discrepancies apparent between those thesauri in their terminology and scoping.

Historic Characterisation, including HSC, uses and frames its terminology in an interpretative, often process-based, and perceptual manner, in line with the European Landscape Convention definition of 'landscape'. Where appropriate to the scale and purpose of working, it is also sensitive to regional, local or specialised understandings. As a result it avoids the use of preferred and non-preferred terminology and can contrast radically with the prescriptive and data-focussed objectives common to many thesauri concerned primarily with data describing the materiality of the world we inhabit. These differences have also produced some adaptation in the scoping of terms also present in other thesauri.

HSC conveys a maritime perspective of historic landscape character. It is relevant across fully marine areas, inshore and offshore, and to inter-tidal areas however defined. But HSC's scope extends to coastal land too, where distinctively maritime perceptions overlap with land-based understandings of areas conveyed by Historic Landscape Characterisation (HLC). Such areas may produce a similar classification in both HLC and HSC such as port warehousing and seaside leisure facilities, but others do not. For example a factory chimney in a port settlement may be classified under its relevant 'Industrial' Character Type in HLC but, if identified on a mariners' Coastal Profile as a marker to align shipping into the port's safe access channel, that same chimney becomes, in HSC, a 'Daymark, a Sub-type of the 'Maritime Safety' Character Type and 'Navigation' Broad Type. Similar roles may be accorded in HSC to other prominent features such as hilltop churches which serve as mariners' place-finders along otherwise poorly differentiated coastlines.

Inevitably any such thesaurus will be a work in progress: further applications of HSC and at differing scales are likely to generate need for new terms. To offer suggested additions or amendments, or for further information about the HSC Thesaurus, please contact:

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Structure of HSC Thesaurus Entries

The terminology is arranged primarily by HSC Broad Character Types (1st order sub-headings), within which are HSC Character Types (2nd order sub-headings), which themselves contain HSC Sub-character Types (3rd order sub-headings).

Broad Character Types and Character Types are each given a brief scoping description. For each Sub-character Type, entries include:

- A note of the term's scope, time-depth, typical components
- principle types of source and geoprocessing and digitisation techniques employed
- an indication of the likely range of horizontal and vertical expressions of the Sub-character Type: the range of 'location' and, where applicable, the 'marine level' at which the Sub-type is generally expressed, so whether: coastal land; inter-tidal; sea surface, water column, sea-floor, sub-sea floor. The list of 'expressions' is only a guide; it is neither prescriptive nor exhaustive. In any particular case the expression may occur outside the given range: HSC assessor should judge the location and level from the actual circumstances encountered.

The HSC Character Structure spreadsheet accompanies the HSC Thesaurus to provide a tabulated overview of the HSC Character Type hierarchy and terminology. It also contains an indication of the likely locations (ie coastal land, inter-tidal or marine) and marine levels at which each HSC Sub-character Type is most frequently expressed. The locations/levels given are only indicative and are not intended to be used or applied prescriptively.

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1 NAVIGATION

Relating to the action or practice of travelling on or in water in a ship or other vessel. This data is primarily derived from the digitisation of modern and historic charts.

1.1 Navigation feature

Areas whose distinctive form has been artificially created for, and directly relates to, the passage of shipping traffic. This Type is usually found where active management has been undertaken to maintain the accessibility of a stretch of water for safe passage: that active management usually involves dredging. The UK Government's advice on navigational dredging distinguishes capital from maintenance dredging.

Capital dredging is generally undertaken to create or deepen navigational channels, berths or trenches or to remove material unsuitable for the foundation of a construction project. It involves the removal of consolidated sediments.

Maintenance dredging is undertaken to keep channels, berths and other areas at their designed depths. It involves removing recently accumulated sediments such as mud, sand and gravel. To be classed as maintenance dredging the activity must take place where:

- the level of the seabed to be achieved by the dredging proposed is not lower than it has been at any time during the past 10 years, and
- there is evidence that dredging has previously been undertaken to that level (or lower) during that period.

This Character Type has close functional associations with the other Character Types under the 'Navigation' Broad Type.

Expressions of this Character Type include active, disused and buried navigation channels, dredged channels and entrances to harbours. Increased sea trade particularly from the 19th century onwards, saw larger vessels in greater numbers seeking access to what had long been hazardous and restricted river or estuary channels. Industrialisation forced port authorities to improve and maintain navigational access by dredging, the spoil often dumped out to sea. Creating estuary channels also often involved the reclamation of adjacent land, including sand banks and saltmarsh, and the construction of retaining walls.

1.1.1 Navigation channel (active)

Description: Includes channels charted or otherwise recorded as in active navigational use by present shipping traffic, whether or not the channel is of historic or modern origin. Time-depth expressed in the attributes will reveal the channel's broad date of origin.

Sources and geoprocessing: Navigation channels are named on historic charts although their limits, if defined, tend to be roughly demarcated by buoyage rather than by continuous lines. The dynamic nature of the seabed means that these shipping channels move spatially, and, in some cases, fall out of use altogether. They can be digitised from individual charts by chart date and later summarised as areas, taking into account spatial change and period of use. Often recorded in bibliographic references and sailing directions.

Expression: sub-sea floor, sea floor, water column and sea surface

1.1.2 Navigation channel (disused)

Description: Includes historic navigation channels known but no longer charted or recorded as in active navigational use for present shipping traffic, whatever the channel's date of origin. Time-depth expressed in the attributes will reveal the channel's broad date of origin and that it is no longer in use in the present. Where there is evidence that the channel is also now a buried feature (if extant at all) should be assigned to 'Navigation channel (disused buried)'.

Sources and geoprocessing: see 1.1.1

Expression: sub-sea floor, sea floor, water column and sea surface

1.1.3 Navigation channel (disused buried)

Description: Includes historic navigation channels known but no longer charted or recorded as in active navigational use for present shipping traffic, and with evidence that the channel is also now a buried feature (if extant at all). Time-depth expressed in the attributes will reveal the channel's broad date of origin.

Sources and geoprocessing: see 1.1.1

Expression: sub-sea floor, sea floor

1.1.4 Dredged channel/area

Description: refers to an area subject to the removal by dredging of accumulated sediments from harbour channels and berths to ensure a safe depth of water for navigational purposes, or similar maintenance works to remove sediment to restore an adequate flow of water to mitigate risk of flooding or protect a sensitive habitat.

Sources and geoprocessing: see 1.1.1

Expression: sub-sea floor, sea floor, water column and sea surface

1.1.5 Navigation channel (unspecified)

Description: Includes channels charted or otherwise recorded as having navigational use by shipping traffic, whether or not the channel is of historic or modern origin but whose current status as active or disused, open or buried, is unclear from available sources. Time-depth expressed in the attributes may reveal the channel's broad date of origin.

Sources and geoprocessing: see 1.1.1

Expression: sub-sea floor, sea floor, water column and sea surface

1.2 Navigation activity

Areas characterised by distinctive human activity directly relating to the passage of shipping traffic, such as navigation routes, anchorages and ferry crossings, including intimately associated areas and features such as bouyage at anchorages, and ferry crossing terminals. Physical demarcation of such areas varies and may only be incomplete, if any at all; their definition may be largely or wholly by legal designation or custom and usage. This Type has close functional associations with the other Character Types under the 'Navigation' Broad Type.

1.2.1 Anchorage

Description: An area of sea or coast where ships, vessels and craft anchor, often provided by sheltered conditions afforded by the topography of the nearby coast. Anchorages may be defined by customary usage or, especially in the vicinity of busy ports and shipping lanes, by a designated anchorage area. They are often located along coastlines within bays or areas sheltered from prevailing winds, strong currents and turbulent waters, which are known and regularly re-used by vessels for safe anchoring and sheltering from bad weather. They have potential as areas of enhanced archaeological potential as their regular occupation would increase the likelihood of finding vessels that succumbed to bad weather and sank despite seeking shelter, together with debris discarded or dropped from ships at anchor.

Sources and geoprocessing: Historic anchorages areas may be mapped as points in historic charts, although they represent an area of activity. The data can be converted to polygons to reflect the role of anchorages as areas of maritime activity and to prepare the data for querying with other vector polygons. The centre points of the anchorage areas are digitised and a 500m buffer created.

Expression: sub-sea floor, sea floor, water column, sea surface

1.2.2 Ferry crossing

Description: Relates to a regular commercial passenger route across an area of sea, estuary, river or lake, or an area of port, dock or harbour. Often includes associated embarkation and disembarkation areas and buildings for passengers, vehicles and customs control. Types of ferry vary considerably, from rowing boats to powered vessels and fixed chain-link ferries.

Sources and geoprocessing: historic and modern charts. Route centre-line buffered (generally by 250m in national strategic level HSC) as polygons or line of navigation set against marine grid.

Expression: sea floor, water column, sea surface, inter-tidal, coastal land

1.2.3 Harbour pool

Description: Relates to a designated administrative area of water including and adjacent to a port or harbour, where all maritime activity falls under the jurisdiction and controls of a port or harbour authority. It also includes associated traffic-areas and areas of restricted navigation. Inclusion in an HSC of such a 'Harbour pool' designated area rather than mapping separately the designated sea use areas it prescribes, depends on the grain of the HSC and the area occupied by such a 'pool'. Such a 'pool' may also be assessed for HSC as one component of an overall 'Harbour', another Sub-character Type within the 'Ports and Docks' Character Type. To avoid confusion, the 'Harbour pool' Sub-character type should be used only for the designated administrative areas defined above, where those controls exist and form the dominant characteristic, not as a general colloquially-based term for harbours or the components of a harbour..

Sources and geoprocessing: historic and modern charts.

Expression: sea floor, water column, sea surface, inter-tidal

1.2.4 Navigation route

Description: relates to routes regularly used by vessels of any description while navigating between destinations. They may be defined by usage or in some areas, formally defined by regulation. Navigation routes are distinct from 'Navigation channels' which are physical features actively managed to identify or secure a navigation route across hazardous areas of sea-floor. They are also distinct from the more specific 'Commercial shipping routes' regularly used by merchant shipping and discussed in the text for the 'Shipping Industry' (qv).

Sources and geoprocessing: historic and modern charts, sailing directions, shipping data

Expression: water column, sea surface

1.2.5 Quarantine area

Description: An area, often linked to a port, where a period of detention was imposed on travellers or voyagers suspected of carrying infectious diseases before they were allowed to enter a country or town. It may include intimately associated shore facilities, such as quays and 'pest houses', and seaward facilities such as designated quarantine anchorages and quarantine hulks. Quarantine is also the term for the period of time during which a ship, capable of carrying contagion, is kept isolated on its arrival at port. The term 'quarantine' derives from the 17th century tradition of a 40-day isolation period.

Sources and geoprocessing: historic and modern charts, together with historic documents by which quarantine areas were designated.

Expression: sea surface, water column, sea floor, sub-seafloor, inter-tidal, coastal land

1.3 Navigation hazard

Relates to areas that contain serious risks to shipping or smaller craft which could lead to damage or complete loss of a vessel. Such risks may be directly related to sea-floor features and aspects, such as wrecks and other seafloor debris and obstructions, drying areas, submerged rocks, shoals and banks, or they may be indirect, with implied hazardous water in the water column and surface above such seafloor

risks. Strong marine currents and their responses to seafloor and coastal topography can also pose serious hazards from water turbulence.

Navigation hazards, past or present, are difficult to map with precision although essentially this is the prime purpose of nautical and maritime charts. Major navigation hazards have figured on the earliest Admiralty charts and are often mentioned in historic sailing directions. Early charts inevitably contain less detail and use less accurate survey methods, focussing instead on highlighting approximate areas of the most notorious hazards and those most easily identifiable. Modern charts depict far more accurate and precise information. The majority of areas associated with this Character Type are typically found along the coast or close inshore. Although wrecks have a much wider overall distribution, their highest densities are also found in inshore waters.

In marine levels, some care is needed to distinguish the location of the hazard from its implications at other levels. For example, 'submerged rocks' and 'wreck hazards' are direct navigation hazards in the 'sea floor' level; while some will project into the water column in their own right, and some wrecks will break the surface, they also imply 'hazardous water' in the water column and sea surface above and around them.

1.3.1 Wreck hazard

Description: Wrecks become dangerous in shallow water when they are either exposed and/or found above 10m below the sea-level (based on UKHO definition). The 'Wreck hazard' Sub-character Type focuses on the area of the hazard, which may include a single wreck or a cluster of several.

From the perspective of HSC, 'wreck hazard' focuses only on the physical extent of the wreck in and on the sea-floor; that may include a single wreck or a cluster of wrecks. To avoid suggesting wrecks at higher marine levels than they physically occur, 'Hazardous water' (qv) is used where appropriate for buffered areas around and above wrecks.

In their effects on historic seascape character at any one time, wrecks have most relevance from their roles as hazards to navigational activity or as indicators of areas and routes of past navigational, naval or trading activity. The extent to which any particular HSC maps individual wrecks or groups of wrecks depends on the intended viewing scale of the HSC and the density of wrecks in a given area. It isn't the objective of HSC to map distributions of wrecks and wreck clusters in their own right: other databases exist for that purpose.

Sources and geoprocessing: historic and modern charts, NMR Maritime Record.

Expression: sea floor, water column, sea surface, inter-tidal

1.3.2 Drying hazard

Description: Areas variously submerged but also subject to exposure above the sea surface at various states of the tide, known as 'drying areas' and forming a hazard to safe passage of shipping. On modern charts these may be indicated by heights shown above chart datum. Historic charts commonly show detail of drying areas or sandbanks as surveyed at the time the chart was produced. Historic drying areas include sandbanks exposed in the past but the location and extents of such areas' exposure at low tide levels are highly susceptible to change due to the mobility of sediments.

Sources and geoprocessing: historic and modern charts. Drying areas as surveyed in separate charts can be digitised, copied and combined into a single layer.

Expression: sea floor, water column, sea surface, inter-tidal

1.3.3 Maritime debris

Description: An area deemed hazardous due to a predominance of recorded obstructions and fouls not known to be associated with a wreck.

Sources and geoprocessing: historic and modern charts, sailing directions

Expression: sea floor

1.3.4 Rock outcrops

Description: Area dominated by rocks rising from the general level of the seabed and breaking the sea surface at some or all states of the tide, posing a risk for navigation.

The Sub-character Type 'Rock outcrops' is not appropriate for use at Sub-sea floor level.

Sources and geoprocessing: historic and modern charts, sailing directions

Expression: sea floor, water column, sea surface, inter-tidal

1.3.5 Shoals and flats

Description: Shallow areas of sand banks, shoals, bars and spits as surveyed at the time a chart was produced. These areas are generally only exposed at low tide and are highly subject to change due to the mobility of sediments.

Sources and geoprocessing: historic and modern charts, sailing directions

Expression: sub-sea floor, sea floor, water column, sea surface

1.3.6 Submerged rocks

Description: Area dominated by rocks rising from the general level of the seabed but not breaking the surface of the water at any state of the tide, thus posing a serious risk for navigation.

Where submerged rocks have only limited extension into the water column, the dominant character in the water column above and in a buffer around the wreck is more accurately described as 'Hazardous water' (qv), and may be so in the sea surface there. That avoids indicating 'submerged rocks' at levels above which they actually occur. The Sub-character Type 'Submerged rocks' is not appropriate for use at Sub-sea floor level.

Sources and geoprocessing: historic and modern charts, sailing directions

Expression: sea floor, water column

1.3.7 Water turbulence

Description: Areas of the water column and/or sea surface characterised by heavy swell, strong currents and tidal races which pose a risk for navigation.

Sources and geoprocessing: historic and modern charts, sailing directions, 'Navigational hazards project'

Expression: water column, sea surface

1.3.8 Hazardous water

Description: Areas of the water column and/or sea surface above various sea-floor hazards and in a buffered zone around them. Such hazards may include wrecks, submerged rocks, shoals and flats. This Sub-character Type is designed to avoid potentially misleading repetition of such sea-floor hazards at levels from which they are physically absent. It isn't intended as a catch-all category for specific water hazards not yet covered by other Sub-character Types.

Sources and geoprocessing: all those used to define the sea-floor hazards, so: historic and modern charts, sailing directions, NMR Maritime Record, 'Navigational hazards project'

Expression: water column, sea surface

1.4 Maritime safety

The 'Maritime safety' Character Type includes features or structures sited at important position-finding or dangerous points on or near the coast for the guidance and warning of mariners, but they can also be located well inland. Usual components include marine navigation aids such as areas of buoys, beacons and lights, together with land-based navigation aids such as lighthouses, fog stations, daymarks (eg churches,

beacons, chimneys, distinctive topography, distance marks and lights). Areas advised or designated as zones of restricted navigation or exclusion for safety reasons are also included, as are safety services' installations such as coastguard stations and lifeboat stations.

For obvious reasons the majority of features associated with this Type are typically found on or adjacent to the coast. Navigable entrances to estuaries and rivers, areas of submerged hazards and foul areas are often demarcated by tracks of posts, buoys, lights, beacons, bells and topmarks. The sites of some navigation aids have a long history, being repeatedly represented on Admiralty charts and maps since their inception. On land, daymarks were commonly used in sighting, survey and navigation, also providing the triangulation basis for surveying maritime charts and coastal profiles.

Some areas of the sea are themselves characterised as 'safety areas', with advised or designated restrictions on navigation, or exclusion from permitted navigation altogether. These may be designed to facilitate safe passage around coastal or estuarine hazards or between shipping lanes, or exclusion zones for safety reasons around offshore oil and gas installations, or military practice areas. Also important in maritime safety are the coastguard and lifeboat stations and lookouts dotted strategically along the coast.

The manner and extent to which it is appropriate to include some of the smaller-sized features categories within this Type will, as always, depend of the purpose and intended presentation scale of the HSC.

1.4.1 Daymark

Description: An unlit, highly visible and distinctive feature on the coast that can be used by mariners for navigation during daylight only (NMR Monument Type Thesaurus). Numerous features were deployed as daymarks for sighting, navigation and survey. Some were specifically built as daymarks, often brightly painted to enhance their visibility; others include features such as churches, beacons, factory chimneys, built and used on land for other purposes but serving, from a maritime perspective, to identify a known fixed location to aid navigation. Lighthouse towers commonly also serve as daymarks, and only serve as such if the light is decommissioned as, for instance, at St Agnes Lighthouse, Isles of Scilly. In a less precise position-finding role, prominent hills and distinctive coastal headlands were often brought into play for a similar purpose along otherwise undistinguished coastlines.

Sources and geoprocessing: OS maps, historic and modern charts, documentary sources; identified as areas or as point data; included and/or buffered as appropriate to the intended presentation scale of the HSC.

Expression: inter-tidal, coastal land

1.4.2 Lighthouse

Description: A tower or structure, with a powerful light or lights at the top, usually erected at an important or dangerous point on or near the sea-coast for the warning and guidance of mariners (NMR Monument Type Thesaurus).

Sources and geoprocessing: OS maps, historic and modern charts

Expression: coastal land

1.4.3 Buoyage

Description: Floating, fixed markers used to indicate to a navigator a sea area to approach or avoid (after NMR Monument Type Thesaurus). Single or arrangements of buoys, beacons and lights are often used to demarcate safely navigable entrances to estuaries and rivers, submerged hazards and foul areas.

Sources and geoprocessing: historic and modern charts. Identified as areas or as point data; included and/or buffered as appropriate to the intended presentation scale of the HSC.

Expression: water column, sea surface

1.4.4 Safety area

Description: Areas of the sea with advised or designated restrictions on navigation, or exclusion from permitted navigation altogether, to promote maritime safety. These areas may respond to a variety of dangers, for example: to facilitate safe passage around marine, coastal or estuarine hazards or between shipping lanes, or they may be exclusion zones for safety reasons around offshore oil and gas installations or military practice areas.

Sources and geoprocessing: UKHO, SeaZone Hydrospatial

Expression: sea floor, water column, sea surface

1.4.5 Safety services

Description: Coastguard and lifeboat stations and NCI lookouts located at strategic points to monitor the coastline and, in the case of lifeboat stations, to launch search and rescue missions.

Sources and geoprocessing: OS maps, historic and modern charts. Identified as areas or as point data; included and/or buffered as appropriate to the intended presentation scale of the HSC.

Expression: inter-tidal, coastal land

2 INDUSTRY

Broadly definable as relating to the production of material goods, primary or secondary, or services. Industrial activity in its many forms has been a dominant influence on the character of much of the seascape across coast, inter-tidal and marine areas at all levels. Of the various classifications and their subdivisions applicable to 'industry', those with a distinctively coastal and/or maritime expression and occurrence have particular relevance for HSC, including many aspects of the extractive, manufacturing and processing industries, the energy industry and the shipping industry. However there are several exceptions to the coverage of the HSC 'Industry' Broad Type. The fishing industry has a special association with HSC's perspective: consideration of its hierarchy of subdivisions is accommodated under a separate Broad Character Type, 'Fishing'. Conversely on land, many HLCs have given separate consideration to other industrial sectors providing 'communications', 'military' and 'recreation' services, along with the many and varied landscape character imprints from farming. In accord with HLC, these too are covered separately in HSC.

2.1 Extractive industry (minerals)

Refers to imprints from industrial activity focussed on primary extraction of minerals from the earth, including stone, specific minerals, and ores, along with initial processing at extraction sites. Includes coal but excludes hydrocarbons which come under the 'Energy Industry' Character Type. Coverage by HSC is limited in geographical scope to areas of extractive industrial character located along the coast and within the marine zone. Future Sub-character Types anticipated at the time of writing (May 2010) will be needed for salt extraction and clays.

This Type is usually an intrusion across other Types of contemporary and earlier date, as extractive industries and their components are generally determined by the underground location of their object. It includes quarrying, dredging and mining, by open-cast, pit and shaft. Most mines, quarries and dredging works develop over some time; while earlier features may be partly effaced by later activity, there are commonly traces of earlier technologies, plant, dumps, scours, etc, among remains from later working.

2.1.1 Aggregate dredging

Description: Areas characterised by the extraction of sand and gravel by dredging from the sea-floor, for use principally in construction and civil engineering. Includes past and active dredge zones, wharves used by dredgers and associated onshore facilities for washing, screening, and preparation.

Sources and geoprocessing: SeaZone Hydrospatial and UKDEAL. Historic and modern charts, historic and modern OS maps.

Expression: sub-sea floor, sea floor, coastal land

2.1.2 Aggregate quarrying

Description: Areas of past or present extraction of sand and gravel by quarrying on land, for use principally in construction and civil engineering. Includes closely associated facilities for washing, screening, and preparation.

Sources and geoprocessing: Historic and modern OS maps; documentary sources.

Expression: coastal land

2.1.3 Quarrying

Description: Areas of past or present open-cast extraction for stone, used principally in construction and civil engineering, and excluding aggregates, coal, specific minerals and ores. Includes closely associated spoil heaps and facilities for initial processing and transportation from extraction site. Coastal sites often favoured for quarrying due to outcrop exposures and ease of access and transport.

Sources and geoprocessing: historic and modern OS maps; HER and NMR records; documentary sources.

Expression: coastal land

2.1.4 Mining (coal)

Description: Areas characterised by past or present extraction of coal, whether by open-cast, pit or by shaft. Includes closely associated spoil, processing and transport facilities and processing waste. Such closely associated spoil may include colliery waste spread onto nearby shores. Some coastal coal mines extend into strata located beneath the sea-floor.

Sources and geoprocessing: historic and modern OS maps, HER and NMR records, documentary sources.

Expression: sub-sea floor, inter-tidal, coastal land

2.1.5 Mining (metals)

Description: Areas characterised by past or present extraction of metal ores, whether by open-cast, pit or by shaft. Includes closely associated spoil, processing and transport facilities and processing waste. Such extraction may be focussed on single metal ores or, commonly, complex ore bodies from a diversity of economically-significant metals and minerals. The character of the metal ores involved in the area covered by the HSC GIS should be noted in the linked text discussion relevant to the area in question. Coastal metals mines often extend into strata located beneath the sea-floor.

Sources and geoprocessing: historic and modern OS maps, HER and NMR records, documentary sources.

Expression: sub-sea floor, inter-tidal, coastal land

2.1.6 Mining (other)

Description: Areas characterised by past or present extraction of known minerals other than metal ores, coal, salt, clays, stone for construction, and aggregates. Covers mining whether by open-cast, pit or by shaft. Includes closely associated spoil, processing and transport facilities and processing waste. Economically-significant minerals may include such items as cobalt, arsenic, jet, wolfram, fluorspar and uranium. The character of the minerals involved in the area covered by the HSC GIS should be noted in the linked text discussion relevant to the area in question.

Sources and geoprocessing: historic and modern OS maps, HER and NMR records, documentary sources.

Expression: sub-sea floor, sea floor, inter-tidal, coastal land

2.1.7 Mining (unspecified)

Description: Areas characterised by past or present extraction by open-cast, pit or by shaft but whose stone/metal/mineral resource is not specified in sources available to the HSC assessor. Includes closely associated spoil, processing and transport facilities and processing waste.

Sources and geoprocessing: historic and modern OS maps, HER and NMR records, documentary sources.

Expression: coastal land

2.1.8 Clay and mud extraction

Description: Areas characterised by the extraction of fine-particle sediments: muds, silts and clays, principally for use in brick and tile making and in cement manufacture. Most such areas occur in fully land-based contexts and are outside the scope of HSC, as are the brick, tile and cement works supplied by such extraction areas. However some industrial-scale mud and clay extraction occurred within estuarine locations and clearly are of relevance to HSC, notably in the River Medway estuary on the north coast of Kent. Extraction peaked there between about 1860 and 1910, impinging on various of the estuarine islands and having major, lasting, effects on the estuary's sedimentary regime and the ensuing pattern of saltmarsh and inter-tidal banks.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: sub-sea floor, sea floor, inter-tidal, coastal land

2.2 Energy industry

The Energy Industry Character Type covers areas characterised by the extraction, processing and/or storage of hydrocarbons (oil, oil derivatives, and gas, but not coal); installations relating to all forms of renewable energy generation, by wind, wave or tide, and power stations of all fuels, together with their associated transmission facilities and directly associated transport facilities.

Coverage by HSC is limited to areas of energy industry character where its imprints are situated along the coast and within the marine zone, but those imprints do show some distinctive features within the overall energy industry, for example the coastal emphasis in the siting of nuclear power stations and the increasing focus on offshore locations for some of our largest wind-farms. UK hydrocarbons output is now in long term decline but in 2001 there were still almost 500 platforms and 10,000 kilometres of oil and gas pipelines running between offshore production wells and terminals on land, mostly in the North Sea.

Future Sub-character Types anticipated at the time of writing (May 2010) will be needed for areas solely concerned with oil, oil derivatives, and gas storage.

2.2.1 Hydrocarbon field (gas)

Description: Production area for natural gas from naturally occurring reserves. Those reserves occur in organic-rich rocks such as oil shales or coal; hydrocarbons form when they are subjected to high pressure and temperature over extended periods. HSC should ensure its mapping relates to the area whose character is dominated by the production activity, not the full known area of the geological reserves.

Sources and geoprocessing: SeaZone Hydrosatial, UKDeal

Expression: sub-sea floor, sea floor, water column, sea surface

2.2.2 Hydrocarbon field (oil)

Description: Production area for oil from naturally occurring reserves. Those reserves occur in organic-rich rocks such as oil shales or coal; hydrocarbons form when they are subjected to high pressure and temperature over extended periods. HSC should ensure its mapping relates to the area whose character is dominated by the production activity, not the full known area of the geological reserves.

Sources and geoprocessing: SeaZone Hydrosatial, UKDeal

Expression: sub-sea floor, sea floor, water column, sea surface

2.2.3 Hydrocarbon installation

Description: An installation, for example a drilling platform, involved in the extraction of oil and natural gas. Closely associated structures include pipelines, platforms, tanker moorings, storage containers, warning signals and lights. Unauthorised navigation is prohibited within 500m of all such structures. Decisions on whether it is appropriate to depict individual hydrocarbon installations (whether or not buffered) or subsume them under mapping of a 'hydrocarbon field' will rest with the HSC assessor, guided by various factors such as the dispersal of installations within a production area, the purpose of the HSC and, especially, its intended viewing scale.

Sources and geoprocessing: SeaZone Hydrosatial, UKDeal

Expression: sub-sea floor, sea floor, water column, sea surface

2.2.4 Hydrocarbon pipeline

Description: A pipeline involved in the transmission of oil or natural gas between facilities involved in their extraction, processing, storage or distribution.

Sources and geoprocessing: SeaZone Hydrosatial, UKDeal

Expression: sub-sea floor, sea floor, coastal land

2.2.5 Hydrocarbon refinery

Description: A building or structure that processes and refines oil and natural gas, such as an oil refinery or gas compressor station. Includes directly associated storage, transmission and transport facilities such as wharves and docks.

Sources and geoprocessing: historic and modern OS maps

Expression: coastal land

2.2.6 Power station (fossil fuel)

Description: A building or set of buildings and structures where power, especially electrical or mechanical, is generated, using fossil fuels: coal, oil or natural gas (after (NMR Monument Type Thesaurus). Includes directly associated storage, transmission and transport facilities.

Sources and geoprocessing: modern OS maps

Expression: coastal land

2.2.7 Power station (nuclear)

Description: A complex of buildings producing power derived from nuclear energy. (NMR Monument Type Thesaurus). Includes directly associated transmission facilities.

Sources and geoprocessing: modern OS maps

Expression: inter-tidal, coastal land

2.2.8 Renewable energy installation (wind)

Description: Buildings, sites and structures associated with the harnessing of wind power for electrical power generation. Includes windfarms and their directly associated electrical transmission and distribution facilities.

Sources and geoprocessing: SeaZone Hydrosatial, modern charts, modern OS maps

Expression: sub-sea floor, sea floor, water column, sea surface, coastal land

2.2.9 Renewable energy installation (tidal)

Description: Buildings, sites and structures associated with the harnessing of tidal power for electrical or mechanical power generation. Includes tidal mills, tidal barrages and directly associated pools, transmission and distribution facilities.

Sources and geoprocessing: SeaZone Hydrospatial, modern charts, historic and modern OS maps

Expression: sub-sea floor, sea floor, water column, sea surface, inter-tidal, coastal land

2.2.10 Renewable energy installation (wave)

Description: Buildings, sites and structures associated with the harnessing of wave power for electrical power generation. A developing field and will include areas dominated by wave power-generation technology and directly associated transmission and distribution facilities.

Sources and geoprocessing: SeaZone Hydrospatial, modern charts, modern OS maps

Expression: sub-sea floor, sea floor, water column, sea surface, coastal land

2.2.11 Submarine power cable

Description: Cable laid on or beneath the sea floor and used to transmit electricity from the mainland to islands or to offshore installations, or to link offshore electricity generators to the onshore national electricity grid.

Sources and geoprocessing: historic and modern charts, historic and modern OS maps

Expression: sub-sea floor, sea floor, inter-tidal, coastal land

2.2.12 Overhead power cable

Description: Raised cable supported on pylons or other structures and used to transmit electricity over long distances. While not intrinsically of distinct maritime character, they can dominate cultural character where they cross estuaries and channels. Consequently for HSC, overhead power cables are a relevant consideration where they cross areas up to MHW and their character dominance justifies any buffering needed to express them. To landward, where they cross areas of 'distinctive maritime character', they will not be expressed as they will rank secondary in dominance to that other 'distinctive maritime character' which brings those areas into HSC.

Sources and geoprocessing: historic and modern charts, historic and modern OS maps

Expression: sea surface, inter-tidal

2.3 Processing industry

The Processing Industry Character Type is directly related to the transformation of raw materials in the production and manufacture of goods and, indirectly, to their marketing and consumption. It covers various processing and production industries with a particular relevance for HSC due to their distinctively coastal and/or maritime expression and occurrence.

2.3.1 Chemical works

Description: An industrial complex involved in the production of chemicals (NMR Monument Type Thesaurus).

Sources and geoprocessing: historic and modern OS maps

Expression: coastal land

2.3.2 Iron and steel works

Description: An industrial complex for the large-scale production of iron and/or steel. Dating from the mid-19th century onwards, such complexes are often located on the coast and in or near ports to facilitate the import of the necessary raw materials and the export of the finished products.

Sources and geoprocessing: HER, NMR, historic and modern OS maps

Expression: coastal land

2.3.3 Industrial production (unspecified)

Description: An area characterised by facilities relating to industrial production but whose chief product is not specified in sources available to the HSC assessor. To ensure this keeps relevance for HSC and does not become a generalised sub-type for all coastally-located industry, the areas included here do need to have aspects giving them a distinctively maritime character, for example the inclusion of docks or wharves fronting the area.

Sources and geoprocessing: historic and modern OS maps, documentary sources

Expression: coastal land

2.3.4 Sewage works

Description: An area in which local sewage is filtered and purified in large rectangular or circular tanks (after NMR Monument Type Thesaurus). Includes associated outfalls, pipelines and diffusers.

Sources and geoprocessing: historic and modern OS maps, modern charts

Expression: sub-sea floor, sea floor, inter-tidal, coastal land

2.3.5 Nuclear reprocessing

Description: Industrial area for the decommissioning of structures associated with the nuclear industry, reprocessing of nuclear materials, nuclear waste management and/or nuclear fuel manufacturing activities take place.

Sources and geoprocessing: documentary sources; historic and modern OS maps.

Expression: sub-sea floor, sea floor, inter-tidal, coastal land

2.3.6 Spoil and waste dumping

Description: Areas used for the disposal of domestic and/or industrial waste. Material deposited may include dredging spoil, drilling waste, treated sewage, domestic refuse and other land waste.

Sources and geoprocessing: SeaZone Hydrospatial and UKDEAL. Historic and modern charts, historic and modern OS maps.

Expression: sub-sea floor, sea floor, inter-tidal, coastal land

2.3.7 Lime production

Description: Areas associated primarily with the transport and production of burnt lime from limestone, largely for agricultural use but also for lime mortar. Includes lime kilns and contiguous associated infrastructure such as quays, jetties and loading ramps. Such lime production areas often have a distinctive coastal and estuarine distribution relevant to HSC; where occurring further inland and/or associated directly with inland limestone quarries, such areas are more properly a subject for HLC.

Sources and geoprocessing: documentary sources, historic and modern OS maps, modern charts

Expression: inter-tidal, coastal land

2.3.8 Salt production

Description: Areas concerned with the production of salt for use primarily in food preparation and the preservation of foodstuffs, notably fish and meat. Before the 18th century, almost all salt used in England

was produced by various methods of boiling brine, most derived directly or indirectly from seawater supplemented by inland brine wells in Cheshire and around Droitwich, Worcs. The resulting coastal bias in salt production was enhanced from the medieval period by extensive use of salt for preserving fish for inland markets or for export. Coastal evidence for early salt production, dating back in Somerset to the Middle Bronze Age, comprises finds of coarse pottery (briquetage) from boiling vessels, trays and pedestals, often accompanied by hearth debris. By the later Iron Age and Roman periods this leaves some extensive surviving landscape features, notably the debris mounds known as ‘red hills’ beside present and former coastlines of Essex and Suffolk, but extensive Roman salt production has left similar debris along the south and south west coasts. Documented medieval coastal salt-making was widespread; field evidence from Cumbria and Lincolnshire includes saltworks boiling concentrated brine extracted from salt-encrusted silts, a process called ‘sleeching’, associated with extant mounds of waste and filter pits. From the late medieval period, coal-fuelled direct boiling of seawater dominated: associated coastal features include rock-cut cisterns, embanked ‘saltpans’ to trap quantities of seawater, especially along the Cumbria, Northumberland and Durham coasts using adjacent coal deposits, and workers’ cottages. Mined Cheshire rock salt and cheap sea-salt imports from Brittany rendered most English coastal salt production uneconomic in the 18th century except along the Hampshire coast: Portsmouth’s naval victualling needs supported extensive salt-making on Lymington marshes until 1865: large embanked evaporation ponds survive there with traces of the salthouses. At Teesside, salt was refined from brine pumped from underground deposits from 1863 to 2002.

Sources and geoprocessing: documentary sources, historic and modern OS maps, NMR, HERs

Expression: inter-tidal, coastal land

2.4 Shipping industry

This Character Type refers to areas dominated by activity relating directly to the non-recreational use, maintenance, storage and administration of shipping.

2.4.1 Boat yard

Description: A place where smaller vessels are built and stored (after NMR Monument Type Thesaurus)

Sources and geoprocessing: historic and modern OS maps, historic and modern charts.

Expression: inter-tidal, coastal land

2.4.2 Commercial shipping route

Description: A route regularly used by ships engaged in commerce or trade. May be defined by usage or in some areas, formally defined by regulation. Distinguished from the ‘Navigation route’ Sub-character Type (qv) by the specific association with commercial shipping as opposed to naval, recreational or ferry traffic.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, shipping data

Expression: sea surface

2.4.3 Ship yard

Description: A place where boats or ships are built or repaired (after NMR Monument Type Thesaurus)

Sources and geoprocessing: historic and modern OS maps, historic and modern charts.

Expression: inter-tidal; coastal land

3 FISHING

The ‘Fishing’ Broad Character Type relates to areas whose character is dominated by activities concerned with commercial extraction of fish and shellfish from the sea, estuaries or rivers. Included within the Broad Character Type are directly associated landing, marketing, processing and distribution facilities.

Recreational or leisure fishing is not included, even if commercially organised, and is covered instead under the 'Recreation' Broad Character Type.

Commercial fish extraction under the Fishing Broad Character Type has two chief subdivisions: the 'Fishing' Character Type, involving the capture or gathering of wild fish and shellfish stocks by various methods such as trawling, netting, trapping, potting, dredging and collection, and the 'Aquaculture' Character Type, involving the cultivation of fish and shellfish populations under controlled conditions often, but not always, enclosed from wild stocks.

3.1 Fishing

Areas of the sea, estuaries and rivers whose character is dominated by activities concerned with the capture or gathering of wild fish and shellfish stocks by various methods such as trawling, netting, trapping, potting, dredging and collection by hand. Includes directly associated landing, marketing, processing and distribution facilities.

The character of fishing in the open sea in respect of mapped locations is often similar to that of hunting and gathering more generally, in that it exploits its prey resources across extensive territories over which the areas of actual fishing activity at any given time will move, seasonally and over other temporal cycles according to the behaviour of the prey species concerned. Those territories: the fishing grounds, and the fishing methods which dominate within them, are defined and can be mapped according to several factors: the distribution and behaviour of commercial prey species, fishery regulation at regional, national and international levels, and by custom and tradition.

Fishing methods also vary considerably in their impact on biodiversity and on the physical environment of the areas in which they operate producing, for example, clear differences between the ecological and physical imprints of pelagic trawling and those of bottom trawling.

3.1.1 Bait digging

Description: Areas whose character is dominated by regular digging to acquire bait for fishing by various methods. Generally found in estuaries, sandy and rocky foreshores.

Sources and geoprocessing: documentary sources

Expression: inter-tidal, coastal land

3.1.2 Bottom trawling

Description: Commercial fishing that involves 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. Most widely used methods are otter trawling and beam trawling.

Otter Trawling uses funnel-shaped trawl nets, with sides extended forward to form wings to guide fish into the funnel. The net is held open horizontally as it moves through the sea by wooden or steel 'otter boards' while floats raise open the upper edge of the net mouth. Weights distributed along the lower edge (ground rope) ensure good contact with the sea-floor and disturb the fish into position for catching in the net.

Beam-trawling uses a rigid beam of wood or metal across the net mouth. At each end of the beam are steel plates called beam-heads fitted with stirrup-shaped shoes that keep the beam slightly raised from the sea-floor and hold open the net mouth. The net funnels out behind the beam, with chains arranged in front of its lower edge to disturb the sea floor. When the trawl is in motion, the disturbed fish are caught in the net as it passes. This fishing method is widely used by fishermen for catching 'flat fish' species, however the method has also been accused of causing major ecological damage from sea-floor habitat disturbance and its indiscriminate by-catch.

Sources and geoprocessing: historic charts, documentary sources, CEFAS, regional Sea Fisheries Committee records (IFCAs), JNCC

Expression: sea floor, water column, sea surface

3.1.3 Shellfish collection

Description: An area characterised by the regular commercial collection by hand or hand-held tools, of naturally-occurring shellfish stocks for food, bait (if dug for bait, the 'Bait digging' Sub-character Type will be more appropriate) or other products. Does not include collection of farmed shellfish from artificial structures, for which 'Shellfish farming' under 'Aquaculture' would be more appropriate.

Sources and geoprocessing: historic and modern OS maps and charts, documentary sources

Expression: sea floor, inter-tidal, coastal land

3.1.4 Fixed netting

Description: Areas characterised by commercial fishing by fixed net methods. Fixed netting, sometimes also termed set netting, is a generalised term covering several detailed netting methods such as gill nets, tangle nets or trammel nets. It refers to netting held stationary rather than being towed by a vessel or allowed to drift in the current. The nets hang vertically in the water column, generally in the range 50-200m long and are used singly or as a series joined end to end. Floats are attached to a headline and they are usually anchored by lead weights along a footrope but in shallow water they may be fixed to posts or other suitable objects driven into the seabed. The footrope is designed to rest on or just above the seabed. Fish are caught either by gilling or entanglement. Fixed netting is largely confined to inshore areas.

Sources and geoprocessing: historic charts, documentary sources

Expression: sea floor, water column, sea surface

3.1.5 Hand netting

Description: Areas characterised by fishing using hand nets worked by an individual fisherman. Regional variations include haaf netting on the Solway, lave netting on the Severn, and dip netting on the Parrett. All consist of a rectangular frame from which a net is suspended. A haaf net has a middle leg which extends for carrying the frame (beam) and to tip it to trap fish; a lave net consists of a hand-staff which is held in one hand and a headboard with the other, whilst the fingers are entwined in the bottom of the mesh feeling for the fish. The haaf net is positioned in front of the fisherman, to face the run of the water. The most common method is to stand in shallow estuary waters during the ebb tide. The fisherman faces the outgoing tide holding the net to catch salmon. Haaf-netters sometimes fish in a line, in small numbers or alone depending on the ground. Includes local variants such as 'Flood Beam' or 'Marsh Haaf'. The lave net is used at low spring tides in flat and calm conditions. Dip nets, larger versions of the child's rock-pool net, are used around the Severn Estuary and on the River Parrett, to catch elvers.

Sources and geoprocessing: historic charts, documentary sources, local sea fisheries committees/IFCAs

Expression: sea floor, water column, sea surface, inter-tidal

3.1.6 Longlining

Description: Areas characterised by commercial fishing using long-line methods. Longlining involves setting out in the water column a fishing line, often several kilometres long, from which shorter lines called snoods are spaced at intervals and carry baited hooks. The lines may be set vertically or horizontally, with an anchor and marker buoy at each end, at various levels in the water column depending on whether the target species are demersal or pelagic. The size and types of fish caught are also determined by the hook size and the type of bait used. Longline fishing in the UK is typically engaged in by small inshore vessels, 10m or less, generally operating on grounds near their home port.

Sources and geoprocessing: historic charts, documentary sources

Expression: sea floor, water column, sea surface

3.1.7 Seine Netting

Description: Areas characterised by commercial fishing using seine nets. A seine net is a long net that hangs in the water column with floats along the upper edge and weights along the bottom. The ends of the net can be drawn together to encircle and herd a school of fish, and then hauled in, usually by a fishing vessel in

modern commercial fisheries but, historically in shallow inshore waters, by hand too. Two main types of seine nets are in use: purse seines and Danish seines. Purse seines have a drawstring running through rings along the lower edge, which closes the floor of the net to prevent the fish from escaping as it is hauled in. Danish seines use a conical net anchored to the sea floor at one end; wires attached to wings at the other end are towed around a shoal by a vessel, herding the fish into the net for hauling in.

Sources and geoprocessing: historic charts, documentary sources, CEFAS

Expression: water column, sea floor, sea surface

3.1.8 Drift netting

Description: Areas characterised by commercial fishing using large nets that drift in the water, moved by currents and lacking any fixtures to keep them in place. These are generally used for pelagic or migratory species. Drift nets are rigged in a straight line to form a curtain in the water. Fish swim into the net and are trapped there by their gills.

Sources and geoprocessing: historic charts, documentary sources, local sea fisheries committees/IFCAs, MMO

Expression: water column, sea surface

3.1.9 Pelagic trawling

Description: Commercial fishing that involves trawling midwater levels of the water column, targeting the pelagic fish species, most commonly mackerel, herring or sprats in the UK. Large funnel shaped nets, held open at the mouth by floats and weights, are towed by one or two (pair-trawling) vessels. Net size varies considerably, up to 240m wide, as does the size of vessel operating such fisheries, which may be inshore or offshore.

Sources and geoprocessing: historic charts, documentary sources, CEFAS

Expression: water column, sea surface

3.1.10 Fishing ground

Description: 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 prey species concerned and regulations governing their exploitation. Consequently the definition of fishing grounds will depend on several factors: the distribution and behaviour of the commercial fish species, fishery regulation at regional, national and international levels, and custom and tradition within the fishery concerned.

Sources and geoprocessing: historic charts, documentary sources, CEFAS, regional Sea Fisheries Committee records (IFCAs), JNCC

Expression: sea floor, water column, sea surface

3.1.11 Potting

Description: Areas characterised by commercial fishing using pots and creels. Pots and creels are small portable traps set on the sea floor in coastal waters to catch a variety of crustacea and molluscs such as lobsters, crabs, cuttlefish, crayfish and shrimps. When baited, they are set on the sea floor singly or in lines with marker buoys at each end. There are many designs reflecting both target species and local tradition. Traditionally made from basketry but now usually of cord mesh over a metal and wooden frame, they

generally have one or more funnel-shaped entrances allowing the prey species to enter but not leave. Potting grounds are rarely more than a mile offshore and almost invariably on a rocky bottom.

Sources and geoprocessing: historic charts, documentary sources, CEFAS, regional Sea Fisheries Committee records, JNCC

Expression: sea floor, water column, sea surface

3.1.12 Shellfish dredging

Description: 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.

Sources and geoprocessing: historic and modern charts, documentary sources, CEFAS, regional Sea Fisheries Committee records (IFCAs), JNCC

Expression: sea floor, water column, sea surface

3.1.13 Fish market

Description: A market where fish is sold (NMR Monument Type Thesaurus). Includes closely and functionally associated open areas, built structures, wharves, quays and distribution facilities .

Sources and geoprocessing: modern OS maps, documentary sources.

Expression: coastal land

3.1.14 Fish warehousing

Description: An area characterised by buildings used specifically for the storage of fish or fish products. Such storage may relate to several aspects of the fishing industry, for example the storage of fish after landing and before auction or sale, or the cold storage of fish after sale. Includes closely and functionally associated transport and distribution facilities.

Sources and geoprocessing: modern OS maps, documentary sources.

Expression: coastal land

3.1.15 Fish trapping

Description: An area characterised by the use of fish traps for the capture of naturally occurring fish stocks. Fish traps are permanent or semi-permanent structures, built or placed in rivers (freshwater or estuarine) or tidal areas and designed to catch fish as they move along in river currents or on the ebbing tide. Fish traps include stone, timber, basketry or framed-net structures, sometimes covering extensive areas with their funnel-shaped plans, concentrating trapped fish towards a collection point; in other cases, smaller structures are sited in strategic position along rivers or tidal channels, again designed to ensnare fish travelling along them. Does not include temporary portable pots and creels which are repeatedly lifted and re-set at sea: use the 'Potting' Sub-character Type for areas of these.

Sources and geoprocessing: modern OS maps, documentary sources.

Expression: inter-tidal, coastal land

3.1.16 Fish processing facility

Description: An area characterised by buildings used specifically for the processing of fish into marketable fish products. Such facilities may relate to various forms of fish processing, from basic fish gutting and filleting, to shaping and embellishing, as for example in the production of fish fingers, and to the application of processes enabling the medium-long term storage and distribution of the resulting fish products,

commonly by freezing and packaging but also by smoking and canning. These areas include functionally associated structures, for example those housing fish factories' ice-making plant; also directly associated areas of transport and distribution facilities.

Sources and geoprocessing: historic and modern OS maps, documentary sources.

Expression: coastal land

3.2 Aquaculture

The 'Aquaculture' Character Type relates to the commercial cultivation of fish and shellfish populations under controlled conditions which are often, but not always, enclosed from wild stocks. It includes the raising of saltwater and/or freshwater species and may occur in locations inland, in rivers (freshwater or estuarine), tidal areas or in fully marine situations (where it may be termed mariculture). Under 'Aquaculture', the main Sub-character Types, 'Fish farming' and 'Shellfish farming' generally involve different methods, locations and material features.

3.2.1 Fish farming

Description: Areas characterised by the commercial cultivation of fish populations under controlled conditions. Fish farms may be sited in inland or coastally located artificial ponds, or in rivers, estuaries and the open sea, enclosed in tanks, cages or nets from wild fish stocks. Includes closely and functionally associated management, storage and distribution facilities.

Sources and geoprocessing: modern OS maps and charts, documentary sources.

Expression: sea floor, water column, sea surface, inter-tidal, coastal land

3.2.2 Shellfish farming

Description: Areas characterised by the commercial cultivation of shellfish populations under controlled conditions which are sometimes, but not always, enclosed from wild stocks. Shellfish farming includes oyster beds, mussel beds and cockle beds, which are 'seeded' and managed over several seasons until they are big enough to harvest. Structures used at such farms to provide additional surface area for shellfish attachment include arrays of trestles, racks and poles. Includes closely and functionally associated management, storage and distribution facilities.

Sources and geoprocessing: modern OS maps and charts, documentary sources.

Expression: sea floor, water column, inter-tidal, coastal land

4 PORTS AND DOCKS

4.1 Ports and docks

This Broad Character Type and Character Type relate to the functioning of ports and docks, together with their harbours and associated port-related industry and range of material features and imprints.

Ports form the interface between land and marine transport and distribution systems. In that role, they perform a range of functions: to receive ships; to transfer and accommodate cargo and people moving to and from ships; to provide a coastal distribution hub for various scales of hinterland; to provide dockyard maintenance and repair facilities, again at various scales, and to offer shelter from storms. Associated features include the necessary structures to ensure safe approach, entry to and landing at the port, such as breakwaters, harbours, quays, wharves. Harbour pilots, barges and tugboats are commonly used to manoeuvre large ships in tight quarters as they approach and leave ports. Many ports have maintained deep water channels and berths: various of the 'Navigation' Types and Sub-types are closely associated with ports. Ship maintenance, supply and repair facilities may be small scale or enlarged to form enclosed dockyards. Transfer and reception of goods and passengers includes terminal facilities and closely associated car parks; in some cases also customs and immigration facilities. Ports usually include areas of

hotel accommodation for passengers in transit and housing for workers servicing the port. Loading and unloading of goods requires storage and transfer areas: now often involving container storage and big sheds, but historically also warehousing grouped around or behind the quays. Processing and manufacturing facilities from various 'Industry' classes are often located very close by, while some ports have specialist area for landing and distributing fish, with Sub-types relating to the 'Fishing' Broad Character Type. From their role as coastal distribution hubs, many ports also have extensive areas devoted to road and rail transport.

The 'Ports and docks' Broad Character Type and Character Type cover those areas with a primarily civilian function. Specifically naval facilities and dockyards should be included under the appropriate 'Military' Sub-character Types.

4.1.1 Dockyard (Civilian)

Description: An area, often enclosed, in which ships used primarily for non-military activities are built and repaired, and where ships' stores are brought together (after NMR Monument Type Thesaurus)

Sources and geoprocessing: historic and modern OS maps, historic and modern charts.

Expression: inter-tidal, coastal land

4.1.2 Wet dock

Description: Built structure or group of structures enclosing an area of water which was impounded by lock gates to maintain water levels artificially, facilitating the loading, unloading, building or repair of ships. The earliest docks were built in Liverpool in the 18th century, and most docks are of 19th century or 20th century origin.

Sources and geoprocessing: HER, NMR, historic and modern OS maps, documentary sources

Expression: inter-tidal, coastal land

4.1.3 Harbour

Description: An area on the coast where ships can find shelter or safe anchorage. Harbours require features that provide shelter and a pool area large and deep enough to accommodate vessels at anchor. The shelter may be provided by natural topographic features or by artificial walls and breakwaters, while pools may have floors and access channels deepened by dredging. Where activity in a harbour pool is governed by dedicated harbour administrative controls, the 'Harbour pool' Sub-character Type (qv) under the 'Navigation Activity' Character Type (qv) can be used for the area so affected if those controls form the dominant characteristic.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts.

Expression: sub-sea floor, sea floor, water column, sea surface, inter-tidal, coastal land

4.1.4 Landing point

Description: A place where vessels can land passengers and goods (NMR Monument Type Thesaurus)

Sources and geoprocessing: historic and modern OS maps, historic and modern charts.

Expression: inter-tidal, coastal land

4.1.5 Working pier

Description: A raised platform, generally of iron or wood, supported on spaced pillars or props and projecting out into the sea and designed to facilitate the transfer of cargo and/or passengers on and off shipping. Very varied in size and complexity, they provide raised access over the sea from the shore to an adjacent position near or below MLW. Working piers incorporate landing points for shipping at their end and/or along their sides. To be distinguished from 'Pleasure pier', whose function is primarily recreational and which are included under the 'Recreation' Broad Type and Character Type.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: sub-sea floor, sea floor, water column, sea surface, inter-tidal, coastal land

4.1.6 Port

Description: A settlement area that combines a harbour and terminal facilities at the interface between land and water transportation systems (NMR Monument Type Thesaurus). Discussed more fully in the 'Ports and docks' Broad Character Type and Character Type Description.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: sea floor, water column, sea surface, inter-tidal, coastal land

4.1.7 Quay

Description: An artificial bank or landing place, largely of solid construction, built parallel to, or projecting out from, the shoreline to facilitate the loading and unloading of vessels (after NMR Monument Type Thesaurus)

Sources and geoprocessing: historic and modern OS maps, historic and modern charts.

Expression: inter-tidal, coastal land

4.1.8 Breakwater

Description: A structure which protects a beach or harbour by breaking the force of the waves (NMR Monument Type Thesaurus). They may be constructed entirely offshore at a strategic location or with one end attached to land. Commonly associated with ports and navigable river mouths, breakwaters often have subsidiary roles in helping keep harbours and river mouths free from silts and in carrying maritime safety structures, not least to warn of the presence of the breakwater itself.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts. documentary sources.

Expression: sea floor, inter-tidal, coastal land

4.1.9 Terminal building

Description: A building within a transport terminal, often associated with the registration and clearing of incoming and outgoing passengers or freight (NMR Monument Type Thesaurus)

Sources and geoprocessing: historic and modern OS maps, historic and modern charts.

Expression: coastal land

4.1.10 Warehousing

Description: Under the 'Ports and docks' Character Type, this Sub-character Type refers to an area, forming an integral part of a port, dock or harbour, which is characterised by buildings used for the storage of goods or merchandise (after NMR Monument Type Thesaurus). For warehousing areas known to have been specifically associated with the fishing industry, use 'Fish warehousing' under 'Fishing'. Warehousing located outside recognised port, harbour and dock areas and lacking clear distinctive maritime character should not be covered by HSC: that is an aspect relevant to HLC.

Sources and geoprocessing: historic and modern OS maps, documentary sources

Expression: coastal land

4.1.11 Rope making

Description: Areas associated with rope manufacture, including rope-walks, associated storage and administrative buildings, structures and access areas. For HSC, evidence for maritime-related end uses are

necessary. May occur in civilian or military contexts and may form an integral part of a dockyard in which case, depending on the scale of characterisation, rope-making areas may be subsumed under the 'Naval dockyard' or 'Dockyard (Civilian)' Sub-character Types as appropriate.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: coastal land

4.1.12 Hulk (unspecified)

Description: A ship no longer serving its original purpose and converted for a variety of secondary uses for which it is not required to move under its own power (after NMR Maritime Craft Type Thesaurus). Among the more frequent of those uses have been as prison hulks (qv); quarantine hulks; storage hulks, sheer hulks (floating platforms for sheer legs), or hulks forming breakwaters or reinforcements in a sea defence. If the purpose of a hulk is specifically known, for example a 'prison hulk' (qv) and its scale is appropriate for representation in the HSC, the appropriate specific Sub-character Type should be used.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: inter-tidal, coastal land

5 COASTAL INFRASTRUCTURE

This Broad Character Type relates to areas of coastally-specific and maritime-related infrastructure provision forming a civic amenity governed largely, in modern contexts, by public policy considerations. Often on a large scale and with origins in private, communally-organised or ecclesiastical enterprises, their siting, design and construction commonly now result from Agency or Govt Dept programmes implementing policies at local, regional, national or EC level. Good examples include defences against coastal and estuarine flooding and erosion. Where appropriate, some specific infrastructure topics, such as roads and bridges, are accommodated under other Broad Character Types, eg 'Communications'.

5.1 Flood and erosion defence

This Character Type relates to provision of structures designed to remove, reduce or mitigate the risk of coastal and estuarine flooding from the sea, rivers or un-channelled rainfall run-off, or to counter losses to coastal land from marine erosive forces. In practice, along the coast the concepts of both flood and erosion defence are commonly incorporated in one and the same structure, though their character in terms of siting, design and build may be more heavily influenced by one or other at different locations.

Areas of flood and erosion defence are often slender and linear in form, and associated with other Character Types, for example 'Reclaimed Land' or 'Settlement'. Whether or not it is considered appropriate to represent the areas of such defences as separate polygons depends on the intended viewing scale of the HSC in question.

5.1.1 Sea defence

Description: An artificial structure designed to counter losses to coastal land from the erosive forces of sea. Such structures may work directly to withstand those forces along defined line, as for example with sea walls, or they may seek to dissipate them in the inter-tidal and inshore zones, as with lines of spaced revetments and inshore reefs. This Sub-character Type is termed 'Sea defence' in preference to 'Coastal defence' to avoid potential confusion with pre-1956 British military 'Coastal Defence' policy.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, digital marine mapping

Expression: sea floor, water column, sea surface, inter-tidal, coastal land

5.1.2 Flood defence

Description: Man-made constructions used to prevent water flooding the surrounding area. Often taking the form of a bank or wall but may be more elaborate e.g. the Thames Barrier, and include run-off drains and reservoirs (after NMR Monument Type Thesaurus).

Sources and geoprocessing: historic and modern OS maps, historic and modern charts.

Expression: coastal land

6 COMMUNICATIONS

This Broad Character Type relates to areas of coastally-specific and maritime-related infrastructure on land serving communication needs. These may be by physical transport, eg by road or rail, or by other means such as telecommunications or sight-based systems, across land, inter-tidal and marine. Physical transport on or under the sea is covered variously under the 'Navigation', 'Industry', 'Fishing' and 'Military' Broad Character Types.

6.1 Transport

A Character Type relating to areas of coastally-specific, maritime-related infrastructure related to the physical movement of people and/or goods. Areas of transport infrastructure are small or slender and linear: the extent to which such areas are mapped as separate polygons depends on the area-threshold for mapping of the HSC in question and the intended viewing scale.

6.1.1 Canal

Description: An artificial navigable waterway used for the transportation of goods. Nowadays also used for recreational purposes (NMR Monument Type Thesaurus).

Sources and geoprocessing: historic and modern OS maps, historic and modern charts.

Expression: coastal land

6.1.2 Railway

Description: A line or track consisting of iron or steel rails, on which passenger carriages or goods wagons are moved, usually by a locomotive engine (NMR Monument Type Thesaurus). Where an area of railway facilities (eg tracks and sidings) forms a contiguous and dedicated part of the area of another Sub-character Type, for example a 'Power station (fossil fuel)' or 'Mining (coal)', then those facilities should be treated as part of the other Sub-type's area. Only use 'Railway' for the transportation route to and from such areas and for the non-specific rail network and facilities.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts.

Expression: coastal land

6.1.3 Tramway

Description: A light railway on which raw materials, goods and/or passengers are conveyed; in early usage usually in industrial contexts and hauled by animal power or by a centralised power source. In later usage usually relates to tracks inlaid into a road surface, on which tram cars run, powered by a centralised source, for the conveyance usually of passengers. Where an area of tramway forms a contiguous and dedicated part of the area of another Sub-character Type, for example one those under the 'Extractive industry (minerals)' Character Type, then that tramway area should be treated as part of the other Sub-type's area.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts.

Expression: coastal land

6.1.4 Road

Description: A way between different places, used by horses, travellers on foot and vehicles (NMR Monument Type Thesaurus).

Sources and geoprocessing: historic and modern OS maps, historic and modern charts.

Expression: coastal land

6.1.5 Tunnel

Description: An elongated, enclosed routeway for the transportation of goods and people under roads, railways, rivers, or through topographic features such as hills (after NMR Monument Type Thesaurus for ‘transport tunnel’).

Sources and geoprocessing: historic and modern OS maps, historic and modern charts.

Expression: sub-sea floor, coastal land

6.1.6 Bridge

Description: A structure with one or more openings beneath it to span a river or other physical obstacle, for the purpose of providing passage over that obstacle. Bridges commonly have substantial dedicated approach areas and their abutments and support pier/pillar footings may go deep into the beds of rivers and estuaries. As for most ‘Transport’ Sub-character Types, the extent to which bridges merit mapping as separate polygons depends on the area-threshold for mapping of the HSC in question and the intended viewing scale. Some bridges however have a substantial impact on cultural character over a far greater area than their physical footprint, and may impinge on such aspects as river navigability. The HSC assessor may feel it appropriate to buffer the bridge’s actual area in these cases to enable its inclusion as a separate polygon.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts.

Expression: sub-sea floor, sea floor, water column, sea surface, inter-tidal, coastal land

6.1.7 Civilian airfield

Description: An area used for the landing and take-off of primarily civilian aircraft, often including associated buildings, equipment and other installations. (after NMR Monument Type Thesaurus for ‘airfield’).

Sources and geoprocessing: historic and modern OS maps, historic and modern charts.

Expression in marine tier: coastal land

6.2 Telecommunications

This Character Type covers telecommunications infrastructure across coastal land, inter-tidal and marine zones. This includes historic telegraph stations and their associated cabling, and civic listening devices. Modern cables also transfer mass media such as the internet and telephone systems.

6.2.1 Submarine telecommunications cable

Description: Cables or pipes laid beneath the sea to carry telecommunications. This is the most frequent function of submarine cabling, especially those covering long distances. GIS representation of such cables where they form the dominant characteristic will need to be buffered for most viewing scales of HSC. Far fewer submarine cables carry electric power only and should be assessed separately under the ‘Energy industry’ Character Type.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: sub-sea floor, sea floor, inter-tidal, coastal land

7 MILITARY

A Broad Character Type relating to areas directly resulting from, or directly connected with organised defensive or offensive armed activity. In later centuries that mostly includes activity by the armed forces of the British state, but in earlier periods it covers a range of fortifications and ancillary features produced by a diversity of secular authorities seeking to maintain or compete for power and/or prestige.

7.1 Military defence and fortification

Defensive areas and sites in coastal locations and designed to deter or prevent attack from seaward (ie by sea or air). Individual defensive sites, such as anti-landing defences, concrete pillboxes and decoy sites, are often components of more complex arrangements of fortifications tailored to the landscape form and designed to protect strategic areas. During WWI the Defence of the Realm Act 1914 enabled vast tracts of land to be requisitioned for camps, airfields, munitions production, and storage. At the outbreak of the Second World War in 1939 a similar Act was passed, the Emergency Powers (Defence) Act 1939, and coastal defences were greatly extended. Such defensive areas, whether physically or only strategically contiguous, should be borne in mind when considering the representation of these fortifications in HSC, along with the intended viewing scale of the project's GIS and the minimum area threshold for depiction.

7.1.1 Coastal fortification (unspecified)

Description: Military fortified areas and sites of uncertain date in coastal locations. Where broad dating is available, use the Sub-character Type for the relevant period.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: sub-sea floor, sea floor, water column, sea surface, inter-tidal, coastal land

7.1.2 Roman fortification

Description: Military fortified areas and sites of the Roman period (AD 43-410 and termed 'Romano-British' period in the HSC attributes) sited in coastal locations and designed to deter or prevent attack from seaward. Assessment in this Sub-character Type still requires a 'Period' entry in the attributes. This Sub-character Type should not be used to map all coastally-situated Roman fortifications in the HSC GIS: only those whose purpose is considered to have had a distinct maritime character.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: inter-tidal, coastal land

7.1.3 Medieval fortification

Description: Military fortified areas and sites of the Medieval period (AD 410-1540) sited in coastal locations and designed to deter or prevent attack from seaward. The date-range for this Sub-character Type conflates those of the 'Early Medieval and Medieval' periods as defined for the HSC attributes and so runs from AD 410 to AD 1540. Assessment in this Sub-character Type still requires a 'Period' entry in the attributes. This Sub-character Type should not be used to map all coastally-situated medieval fortifications in the HSC GIS: only those whose purpose is considered to have had a distinct maritime character.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: sub-sea floor, sea floor, water column, sea surface, inter-tidal, coastal land

7.1.4 Post-medieval fortification

Description: Military fortified areas and sites of the Post-medieval period (AD 1540-1750), sited in coastal locations and designed to deter or prevent attack from seaward. Assessment in this Sub-character Type still requires a 'Period' entry in the attributes. This Sub-character Type should not be used to map all coastally-situated post-medieval fortifications in the HSC GIS: only those whose purpose is considered to have had a distinct maritime character.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: sub-sea floor, sea floor, water column, sea surface, inter-tidal, coastal land

7.1.5 Early modern fortification

Description: Military fortified areas and sites of the Early modern period (AD 1750-1900), sited in coastal locations and designed to deter or prevent attack from seaward. Assessment in this Sub-character Type still requires a 'Period' entry in the attributes. This Sub-character Type should not be used to map all coastally-situated early modern fortifications in the HSC GIS: only those whose purpose is considered to have had a distinct maritime character.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: sub-sea floor, sea floor, water column, sea surface, inter-tidal, coastal land

7.1.6 Modern fortification

Description: Military fortified areas and sites of the Modern period (AD 1900-present) sited in coastal locations and designed to deter or prevent attack from seaward. For areas and sites whose present character is dominated by construction and use during the two world wars, use those WW fortification Sub-character Types. If dominated by earlier, inter-war or post-war construction and use, use this Sub-Character Type. Assessment in this Sub-character Type still requires a 'Period' entry in the attributes. This Sub-character Type should not be used to map all coastally-situated modern fortifications in the HSC GIS: only those whose purpose is considered to have had a distinct maritime character.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: sub-sea floor, sea floor, water column, sea surface, inter-tidal, coastal land

7.1.7 WW1 fortification

Description: Military fortified areas and sites whose present character is dominated by construction and use during the First World War (AD 1914-1918), sited in coastal locations and designed to deter or prevent attack from seaward. Assessment in this Sub-character Type still requires a 'Period' entry in the attributes. This Sub-character Type should not be used to map all coastally-situated WW1 fortifications in the HSC GIS: only those whose purpose is considered to have had a distinct maritime character.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: sub-sea floor, sea floor, water column, sea surface, inter-tidal, coastal land

7.1.8 WW2 fortification

Description: Military fortified areas and sites whose present character is dominated by construction and use during the Second World War (AD 1939-1945), sited in coastal locations and designed to deter or prevent attack from seaward. Assessment in this Sub-character Type still requires a 'Period' entry in the attributes. This Sub-character Type should not be used to map all coastally-situated WW2 fortifications in the HSC GIS: only those whose purpose is considered to have had a distinct maritime character.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: sub-sea floor, sea floor, water column, sea surface, inter-tidal, coastal land

7.1.9 WW2 Defence Area

Description: Areas of planned, strategically inter-related and largely static anti-invasion defences established in 1940-1941 during the Second World War. Many were sited in, or extensively in, coastal locations and were designed to deter or prevent attack from seaward. Assessment in this Sub-character

Type still requires a 'Period' entry in the attributes. Surviving extents and components of Defence Areas have been subject of a CBA report: W Foot, 2005: *Defence Areas. A national study of Second World War anti-invasion landscapes in England*.

Sources and geoprocessing: historic and modern OS maps, documentary sources.

Expression: sub-sea floor, sea floor, water column, sea surface, inter-tidal, coastal land

7.1.10 Naval battlefield

Description: Recorded areas of former naval battlefields, where they form the dominant character of those areas in the HSC assessor's perception. They may be associated with enhanced material imprints still extant in the form of wrecks and other debris.

Sources and geoprocessing: historic charts, documentary sources.

Expression: sub-sea floor, sea-floor, sea surface, inter-tidal, coastal land

7.2 Military facility

This Character Type covers a broad range of areas and sites intimately connected with military activity but ancillary to the locations of defensive or offensive activity themselves. So it includes, for example, training areas and establishments, barracks, and repair and maintenance areas.

7.2.1 Barracks

Description: Areas of buildings designed to house members of the armed forces. Such areas may also include closely related buildings such as refectories, mess rooms, hospitals, schools and gymnasias.

Sources and geoprocessing: historic and modern OS maps

Expression: coastal land

7.2.2 Firing range (land)

Description: A piece of ground over which small arms or large artillery may be fired at targets (NMR Monument Type Thesaurus). Most firing ranges form components of much larger military practice areas; the extent to which such firing ranges merit mapping as separate polygons depends on the area-threshold for mapping of the HSC in question and the intended viewing scale. In many cases, the HSC assessor may feel it more appropriate to subsume the firing range under the wider practice area.

Sources and geoprocessing: historic and modern OS maps

Expression: coastal land

7.2.3 Military airfield

Description: A landing and taking-off area for military aircraft. Often includes ancillary structures and buildings for the maintenance and storage of aircraft, etc. (NMR Monument Type Thesaurus).

Sources and geoprocessing: historic and modern OS maps

Expression: coastal land

7.2.4 Military base

Description: A building or group of buildings, often surrounded by a system of fortifications, used as a residential and training site by members of an armed force (NMR Monument Type Thesaurus). To avoid confusion with other Sub-character Types including 'Barracks' and 'Military practice area', the emphasis in identifying areas as 'Military base' need to be on multi-functionality encompassing both residential and training facilities in the single contiguous area.

Sources and geoprocessing: historic and modern OS maps

Expression: coastal land

7.2.5 Ordnance dumping

Description: An area regularly used for disposal of spent or redundant military weaponry. Material known to have been dumped at sea includes both conventional and chemical weapons, and the mode of disposal may include carriage on ships scuttled over the disposal site. To be distinguished from ‘ammunition dumps’ which relate to the storage of live ammunition intended for use.

Sources and geoprocessing: historic and modern charts

Expression: sub-sea floor, sea floor, water column, sea surface

7.2.6 Military practice area

Description: An area used by armed forces on land or at sea for training and military exercises.

Sources and geoprocessing: historic and modern charts

Expression: sea floor, water column, sea surface, inter-tidal, coastal land

7.2.7 Naval dockyard

Description: A naval base that builds, repairs, docks and/or converts warships, and is manned by civilian engineers and workers and administered by engineer duty officers (NMR Monument Type Thesaurus).

Sources and geoprocessing: historic and modern OS maps, historic and modern charts

Expression: inter-tidal, coastal land

7.2.8 Naval firing range

Description: An area of sea across which naval ships fire artillery at target sites or areas. In some cases accompanied by land-based observation facilities housing equipment to record accuracy and damage (NMR Monument Type Thesaurus). Some naval firing ranges form components of much larger military practice areas; the extent to which such firing ranges merit mapping as separate polygons depends on the area-threshold for mapping of the HSC in question and the intended viewing scale. In many cases, the HSC assessor may feel it more appropriate to subsume the firing range under the wider practice area.

Sources and geoprocessing: historic and modern OS maps, documentary sources

Expression: sea floor, water column, sea surface, coastal land

7.2.9 Admiralty telegraph station

Description: A naval signalling station using optical telegraphy for rapid communication of messages across long distances, in a system adopted by the British Admiralty in 1795 to warn of French invasion. Also known as semaphore stations and sited on high ground, they were arranged as linear chains extending from London to and along England’s south and south east coasts and part of the East Anglian coastline. Most accommodation for those manning telegraph stations was originally timber-built, supporting frameworks holding telegraph shutters. From 1820, these were replaced, not all on the same sites, by more permanent, built towers surmounted by a vertical pole with movable arms. The system became obsolete with the advent of railways and electric telegraph communications and was discontinued in 1847..

Sources and geoprocessing: historic and modern OS maps, historic and modern charts

Expression: coastal land

8 SETTLEMENT

8.1 Settlement

This Broad Character Type and Character Type relates to contiguous areas dominated by built structures serving various human activities including habitation. The range of activities beyond habitation, and extent of associated infrastructure, varies considerably. The treatment of settlement by HSC projects will inevitably vary according to the presentation scale and threshold for portrayal of the HSC concerned. The application

of settlement terminology also varies enormously across England, for example in the differing applications of the term ‘village’ in areas of nucleated and dispersed settlement patterns and (partly related to that) considerable sub-regional differences in the scale of settlement to which the term ‘village’ is considered appropriate. Relativism in application nationally is probably inevitable across HSCs and not necessarily to be deprecated: it reflects regional and smaller scale differences in settlement perception. However as a general, non-specific category functionally, most of these issues are not of primary relevance to HSC, whose landward interest lies in the distinctively maritime and needs to focus more on the functional identification of, for example, a ‘Port’ (qv). For that reason, HSC’s use of functionally non-specific settlement terminology should be kept simple where used at all. For urban settlement areas, an approach similar to that of most County-level HLCs may be most appropriate for national and regional scale HSC, with one polygon defining a ‘historic core’: the extent of the settlement area shown on the 1st Edn 6 inch:1 mile OS map, and an outer polygon showing the urban extension to the present as shown on OS MasterMap. These will be differentiated by their ‘Period’ attribute.

The extent to which dispersed settlement can and should be represented will again depend on the scale of the HSC: it is unlikely to feature in its own right at all on national or regional level work. In more detailed work, the character of dispersed settlement itself is likely to result in its dispersed settlement units being included under their dominant functional categories rather than under a generalised ‘settlement’ term; for HSC those dominant functions will need to have a distinctly maritime character to be depicted. The wider ‘dispersed settlement pattern’ formed by such settlement units should usually form one component to be recorded against the characterisation of the land area across which the settlement is dispersed, for example one of the ‘Coastal rough ground’ Sub-character Types (qv).

8.1.1 Village

Description: A collection of dwelling-houses and other buildings, smaller than a town and with a simpler organisation and administration. May include a church, a public house and/or shops (after NMR Monument Type Thesaurus and Historic Characterisation Thesaurus). For inclusion in HSC, villages are included only where their overall character is distinctly maritime rather than just by virtue of their proximity to the coast.

Sources and geoprocessing: historic and modern OS map, historic and modern charts

Expression: coastal land, inter-tidal

8.1.2 Urban settlement

Description: A settlement normally larger than a village, usually with a level of administrative autonomy, a range of residential, civic, commercial and industrial functions and belonging to the ‘Urban Settlement’ Class described in the Historic Characterisation Thesaurus. For inclusion in HSC, such urban settlements are included in their entirety only where their overall character is distinctly maritime rather than just by virtue of their proximity to the coast.

Sources and geoprocessing: historic and modern OS map, historic and modern charts

Expression: coastal land, inter-tidal

9 RECREATION

9.1 Recreation

This Broad Character Type and Character Type refers to areas whose character is dominated by activity or material resources whose primary purpose relates to leisure, pleasure, or inspiration. This broad definition includes areas devoted to a considerable diversity of coastal- and marine-specific tourist and leisure activities whose commercial income forms a very important sector of the economy for many coastal areas. It also includes areas dominated by less directly commercial aspects, such as those frequented by wildlife watchers, and areas given over to extensive public art installations such as Antony Gormley’s Another Place’ on Crosby Beach.

Recreational enjoyment of the coast has a long history in England with origins in the earliest expressions of the Romantic movement; as such Recreation Sub-Character Types are likely to recur in Previous HSC for some areas. The growth of industrial towns, the railway network and, during the later 19th and early 20th centuries, the increase in public holidays and workers' purchasing power led to the rise and massive expansion of seaside resorts and their attendant accommodation and entertainment facilities along many parts of the England's coastline. Later and current themes affecting the expression of 'Recreation' include the post-war rise and later decline of the holiday park, the post 1950's decline of the English seaside resort and various initiatives aimed at regeneration. While much of England's coastline and inshore marine areas could be viewed as a 'recreational resource' in loose terms, for HSC assessment, the emphasis needs to be on areas where 'recreation' forms the dominant character of an area, and where the character of that recreational activity has a distinctly maritime flavour rather than just being coastally situated. There can be no hard and fast line here but for example, a fairly typical public park in a coastal town would be relevant to an HLC or EUS if of appropriate scale, but not for HSC. By contrast, the gardens of many coastally- situated large houses open to the public are designed specifically to make use of the coastal topography and display or shelter coastally-specific plant species, often ones intolerant of frost. Similarly, a fairly strong argument can be made for including extensive golf-courses utilising coastal sand dunes as they rely for their physical existence on the coastally-specific dune formations and for their economic existence by drawing on the coastal tourist trade.

9.1.1 Aquarium

Description: An area of buildings, artificial ponds and/or tanks in which aquatic plants and animals are kept for observation and study (after NMR Monument Type Thesaurus).

Sources and geoprocessing: historic and modern OS map

Expression: inter-tidal, coastal land

9.1.2 Bathing/swimming

Description: Area used by people predominantly for bathing and/or swimming.

Sources and geoprocessing: historic and modern OS maps; documentary sources

Expression: water column, sea surface, inter-tidal, coastal land

9.1.3 Recreational dive area

Description: An area used by recreational divers, sometimes concentrated on wreck sites and other areas of topographical, ecological or historic environment interest.

Sources and geoprocessing: historic and modern charts, documentary sources

Expression: sea floor, water column, sea surface

9.1.4 Golf course

Description: A prepared area of ground designed specifically for playing the game of golf.

Sources and geoprocessing: historic and modern OS maps

Expression: coastal land

9.1.5 Holiday park

Description: Areas dominated by commercial complex(es) encompassing lightly-built holidaymaker's accommodation and associated facilities, sometimes including entertainment areas. Includes self-contained complexes often styled 'holiday parks' but also caravan parks and aggregations of chalet accommodation.

Sources and geoprocessing: historic and modern OS maps

Expression: sub-sea floor, sea floor, water column, sea surface, inter-tidal, coastal land

9.1.6 Leisure fishing area

Description: Area dominated by use for recreational fishing and angling.

Sources and geoprocessing: documentary sources

Expression: water column, sea surface, inter-tidal, coastal land

9.1.7 Leisure sailing area

Description: Area used for recreational sailing, yachting, and other small craft pursuits.

Sources and geoprocessing: modern OS maps, modern charts, RYA Recreational Sailing Routes and Areas database, documentary sources

Expression: sea surface, coastal land

9.1.8 Marina

Description: An area of dock, harbour or basin, sometimes inland, used for mooring yachts and other small pleasure craft (after NMR Monument Type Thesaurus).

Sources and geoprocessing: modern OS maps, modern charts

Expression: sea surface, inter-tidal, coastal land

9.1.9 Parks and gardens

Description: Areas of parks and garden areas used for relaxation, inspiration and entertainment. Includes rural designed landscapes, whether or not open to the public. For HSC, only those assessed as possessing distinct maritime characteristics in their content, layout or design (rather than just being coastally situated) are included, otherwise they are of relevance to HLC alone.

Sources and geoprocessing: historic and modern OS maps

Expression: inter-tidal, coastal land

9.1.10 Seaside entertainment

Description: Areas dominated by commercial fairground-style entertainment facilities, such as amusement arcades and fun fairs, used by coastal visitors.

Sources and geoprocessing: historic and modern OS maps

Expression: inter-tidal, coastal land

9.1.11 Sports facility

Description: Areas whose dominant character is provision for sporting activity, whether or not commercially provided, and whether or not within areas of purpose-built structures. May include, for example, extensive land-based sporting facilities aimed specifically at the summer population of coastal holidaymakers or areas regularly used for water-sports and often designated as such. Note: some specific sporting facilities are covered by other Sub-Character Types, including 'Golf course' and 'Leisure sailing'.

Sources and geoprocessing: historic and modern OS maps

Expression: water column, sea surface, inter-tidal, coastal land

9.1.12 Wildlife watching

Description: Areas whose character is dominated by the recreational observation of wildlife, for example, areas regularly frequented by bird-watchers, boat trips to observe seals or cetaceans, or underwater nature trails.

Sources and geoprocessing: documentary sources, modern OS maps

Expression: sea floor, water column, sea surface, inter-tidal, coastal land

9.1.13 Promenade

Description: A designed open space within or extending from a settlement area, usually linear and specifically intended for strolling and public walks. For HSC, such promenades will be associated with good coastal views and will commonly form part of the planned complex of facilities of a coastal resort. The intended presentation scale of an HLC will determine whether or not it is appropriate to portray promenades as polygons in their own right.

Sources and geoprocessing: historic and modern OS maps, documentary sources.

Expression: coastal land

9.1.14 Pleasure pier

Description: A raised platform, generally of iron and/or wood, supported on spaced pillars or props and projecting out into the sea and designed to provide primarily recreational access over the sea from the shore to an adjacent position near or below MLW. Very varied in size and complexity, pleasure piers commonly support buildings providing light entertainment facilities and some incorporate embarkation points at their seaward end and/or along their sides for ferries and pleasure shipping. To be distinguished from 'Working pier', included under the 'Ports and docks' Broad Type and Character Type, whose primary function is to facilitate the transfer of cargo and/or passengers on and off shipping.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: sub-sea floor, sea floor, water column, sea surface, inter-tidal, coastal land

9.1.15 Leisure beach

Description: Largely inter-tidal areas, usually predominantly of sand, used mostly for leisure and relaxation by coastal visitors. May be managed actively, eg by periodic scraping or beach replenishment, or passively, eg by groynes, to retain the sand cover, and may have a range of directly associated built facilities.

Sources and geoprocessing: historic and modern OS maps

Expression: sea floor, inter-tidal, coastal land

9.1.16 Recreational open ground

Description: Area of public open space given over to public access and informal recreation but distinguished from a public park by lacking formal design, facilities or management. Any agricultural management of these areas is secondary and used as a tool to maintain the land's suitability for public recreation. Recreational uses of this land may include long distance footpaths, areas enabling the display and presentation of historic features (which may themselves be 'Managed heritage assets' (qv)), and areas of coastal land set aside for public appreciation of the maritime and coastal landscape. For inclusion in HSC, there needs to be a distinct maritime character to the open ground, for example an area of unrestricted public access extending alongside the coast where the available evidence shows recreation to be the dominant land use.

Sources and geoprocessing: historic and modern OS maps, documentary sources

Expression: inter-tidal, coastal land

9.1.17 Managed heritage asset

Description: The area of an archaeological or other heritage site, building and/or associated grounds managed for the public presentation of its heritage values. Where that area is on coastal land, for inclusion in HSC the heritage values of the presented area should have a distinct maritime character and/or associations.

Sources and geoprocessing: historic and modern OS maps, documentary sources

Expression: sub-sea floor, sea floor, water column, sea surface, inter-tidal, coastal land

10 CULTURAL TOPOGRAPHY

The 'Cultural topography' Broad Character Type covers a range of areas whose form appears largely the product of natural processes, where the physical imprint of man's activity is subtle and easily overlooked, but which are also made cultural and perceived as such by people to varying extents. Many of these areas are often described as 'semi-natural environments' but it is their cultural dimension and perception that are the prime concerns of HSC and which need emphasis in the assessment of these areas and in their accompanying Character Type texts.

That less obvious cultural dimension draws on various themes. Many such areas are themselves defined to varying extents by effects from man's activity, examples being the limitation of saltmarsh expansion by sea defences (coastal squeeze), the artificial retention of inter-tidal sand by groynes in some areas and corresponding depletion in others, and the huge quantities of valley floor and estuarine silts brought down from millennia of farming and extractive industries on land. Less intense imprints are the 'background noise' of littered debris from sea surface to sea floor and the occasional sea-floor shipwrecks present across all the seas. Of even more major concern culturally are man's complex effects, direct and indirect, on marine biodiversity and on global climate patterns, with increases in marine acidification, rising sea-levels and increased wave-height and storminess. With general acceptance that cultural processes have played a critical formative role in shaping the present expressions of all these aspects, they are 'cultural artefacts' as much as 'natural'; so too with the physical effects of our management responses seeking to restore sustainability to man's relationship with the coastal and marine environment. The cultural dimension of many seemingly 'natural' areas may also derive from unintensive or hidden economic activity and civic amenity provision which these areas produce now or in the past, for example the recreational use of many areas of dunes, rock climbing on cliffs, angling in most lakes and watercourses, wildfowling on saltmarshes, water extraction from rivers, lakes and reservoirs, and military training over huge areas. Surviving palaeolandscape components also represent areas which were once human habitat and which contain evidence for past topographic and ecological regimes, the contexts shaping much earlier human cultural activity and landscape perceptions.

Beyond the physical, HSC's concern with cultural landscape perception also bears strongly on these areas. Most such areas are named, forming part of our (and others') territorial understanding and sense of identity at levels from the national right down to the personal and individual. Similarly nearly all of these areas are 'owned' and considered as property with associated rights over the cultural activity that may occur on them. Most of the areas in this Broad Character Type are also celebrated by people as 'wild places' to be explored, enjoyed and admired, balancing their experience of the more obviously less 'wild' in their lives.

10.1 Palaeolandscape component

The Character Type 'Palaeolandscape component' includes surviving areas of ancient topographic features of former exposed land with evidence or strong potential for associated palaeo-environmental deposits and/or old land surfaces. The relevance of these to HSC is as areas of former human habitat with evidence for past topographic and ecological regimes, the contexts shaping much earlier human cultural activity and landscape perceptions. In inter-tidal or marine contexts these will now be submerged beneath the sea, buried beneath post-transgression sediments or buried deep in the muds and silts of estuaries and rivers. This Character Type includes submerged forest remains recorded in some inter-tidal and inshore areas. Palaeolandscape components with associated deposits or OLS may also extend beneath coastal land in many areas but should only be indicated as such where there is evidence or reasonable potential for such survival.

The relationship between this Character Type, its Sub-character Types, and Present and Previous HSC will vary. Although its presence provides evidence for an entry under 'Previous HSC', there will be areas where the dominant cultural character in the present is perceived to be the known existence of palaeolandscape components on or beneath the sea floor or inter-tidal areas. In such circumstances, they will form the assessed Present HSC too.

10.1.1 Palaeolandscape component

Description: Relates to surviving areas of ancient topographic features of former exposed land with evidence or strong potential for associated palaeo-environmental deposits and/or old land surfaces. This non-specific Sub-character Type should be used for areas containing varied topographic features or where their form is ill-defined.

Sources and geoprocessing: Bibliographic references (incl. seismic and other survey data), UKHO, HER, NMR

Expression: sub-sea floor, sea floor, inter-tidal, coastal land

10.1.2 Palaeochannel

Description: The course or channel of a river or stream preserved as a geological feature (NMR Monument Type Thesaurus). This specific Sub-character Type should be used for areas containing individual examples or an individual palaeochannel system. For larger areas with extensive inter-fluvial ridges and other features, use 'Palaeolandscape component'.

Sources and geoprocessing: bibliographic references, (incl. seismic and other survey data), UKHO, HER, NMR

Expression: sub-sea floor, sea floor, inter-tidal, coastal land

10.1.3 Submerged forest

Description: tracts of submerged land retaining macrofossil evidence, often in situ, for former woodland and other woody vegetation cover.

Sources and geoprocessing: HER, NMR, bibliographic references, historic and modern OS maps, historic and modern charts

Expression: sub-sea floor, sea floor, inter-tidal

10.1.4 Peat deposit

Description: Peat deposits comprise unconsolidated semi-carbonised plant remains formed in freshwater-saturated environments. As a Sub-character Type under the 'Palaeolandscape component' Character Type, peat deposits referred to here are those formed in earlier periods and may be exposed by erosion on the land, inter-tidal or sea-floor surface, or they may be buried beneath later deposits. They may also underlie areas of present active peat formation, whose present surface character should be recorded separately under the 'Cultural Topography (landward)' Sub-character Types ('Wetland' or a new 'Peat bog' sub-type). Their excellent preservation of organic remains gives peat deposits a particular importance in understanding past environmental conditions but they have a vital role in cultural landscape perception terms too. 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. 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.

Sources and geoprocessing: HER, NMR, bibliographic references, historic and modern OS maps, historic and modern charts

Expression: sub-sea floor, sea floor, inter-tidal, coastal land

10.2 Cultural topography (landward)

This Character Type refers to those aspects of cultural topography, as described in 1.10, whose physical expressions are predominantly to landward of Mean High Water. For defining HSC terms and extents of their polygons when applied, the inter-tidal zone is perceptual at least as much as a matter of technical

definition. What really matters for HSC is the actual expression of Sub-character Types at any given location, not a technical cut-off at MHW

10.2.1 Cliff

Description: A 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. In coastal areas, cultural aspects of cliffs include their use as vantage points for military and maritime safety structures, recreational uses for rock climbing and coastal walks. Many have provided ready opportunities for quarrying and other extractive industries, and many distinctive cliffs have specific names and serve as familiar coastal landmarks.

Sources and geoprocessing: historic and modern OS maps, HER and NMR

Expression: coastal land.

10.2.2 Dunes

Description: 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 old land surfaces sealed by the onset of dune formation and, in some cases, their preservation of sequences prehistoric and later old land surfaces within their fabric during their long development. Their tendency to occur behind good landing beaches often produces extensive military defences and structures within dune systems, while the remoteness of extensive dunes has been used for siting explosives works. Many currently provide a recreational resource for coastal visitors.

Sources and geoprocessing: historic and modern OS maps.

Expression: coastal land

10.2.3 Lake, pond

Description: An inland body of fresh water, 'lakes' generally refer to larger examples, 'ponds' to smaller, but there is no clear break along the gradation between the two. Similarly with the extent to which they are artificial: most ponds and lakes are 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. All but smallest ponds are individually named as distinctive familiar features in landscape perceptions; many are used for a breadth of recreational and inspirational activities by anglers, artists, those visiting to enjoy the views and to picnic, while many larger lakes support a range of watersports. The sense of spiritual fulfilment which lakes often engender has a very long history in our cultural landscape perceptions, along 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.

Sources and geoprocessing: historic and modern OS maps, environmental data

Expression: coastal land

10.2.4 Reservoir

Description: A body of water, wholly or partly artificial and sometimes covered, used to collect and store water for a particular function (after NMR Monument Type Thesaurus). In this Sub-character Type, the emphasis in the scope is the particular function that the reserve of water is designed to serve, although that can change through time. Many larger examples were designed to provide supplies of drinking water and remain in that use, while others have become redundant and now serve primarily as wildlife reserves or watersports centres.

Sources and geoprocessing: historic and modern OS maps, environmental data

Expression: coastal land

10.2.5 Watercourse

Description: A channel used for or formed by the conveyance of water. Can be largely natural in formation, eg. a river or artificial eg. an aqueduct or a drainage channel. Use a more specific Sub-character Type where known. (after NMR Monument Type Thesaurus). Watercourses have an enormous 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 many others. Watercourses have always had an important place in man's landscape perceptions and river names preserve some of the most archaic of surviving place name elements. In variously 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. Reflecting that position often at the margins of the territorially familiar and a special reverence for water evident in early religions, many ritually deposited items and hoards have been found in the beds and banks of largely natural watercourses.

Sources and geoprocessing: historic and modern OS maps, environmental data

Expression: coastal land

10.2.6 Wetland

Description: A generalised term referring 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 enormously and the vegetation cover may be broken by areas of open water. A more specific Sub-character Type should be used (or created) where known; following that guidance, the separate identification of 'Salt marsh' (qv) will probably remove many inter-tidal wetland areas and leave to landward most application of this non-specific Sub-character Type. The surviving extent and distribution of wetlands has been hugely affected by human activity, especially land drainage and reclamation for agricultural use and urban expansion. In terms of cultural perceptions, wetlands are areas that were often at the margins of the regularly visited and territorially familiar, 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, wetlands' marginal place in our familiarity is reflected in their frequency as the setting for novels and literature designed to invoke fear. Economic activity past and present includes wildfowling and the cutting of peat for fuel and garden soil enhancement. Many wetland areas are managed as wildlife reserves and enjoyed recreationally by wildlife watchers and others seeking inspiration.

Sources and geoprocessing: historic and modern OS maps, environmental data

Expression: inter-tidal, coastal land

10.2.7 Lagoon

Description: A body of shallow water, of 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. Lagoons' enclosing bars 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.

Sources and geoprocessing: historic and modern OS maps, environmental data, documentary sources

Expression: inter-tidal, coastal land

10.3 Cultural topography (inter-tidal)

This Character Type refers to those aspects of cultural topography, as described in 1.10, whose physical expressions are predominantly in the inter-tidal zone. For defining HSC terms and extents of their polygons when applied, the inter-tidal zone is perceptual at least as much as a matter of technical definition. For example, the relationship between the actual extent of sandy foreshore and the levels of Mean High Water

and Mean Low Water will vary from place to place due to many factors. What really matters for HSC is the actual expression of Sub-character Types at any given location, not technical cut-offs at MHW and MLW.

10.3.1 Saltmarsh

Description: Saltmarshes are areas in the upper inter-tidal zone whose vegetation cover is dominated by salt tolerant herbaceous plants. The tide is the dominating characteristic of a salt marsh, the cyclical inundation by salt water defining the plants and animals that can survive in the saltmarsh area. The extent and distribution of saltmarsh has been strongly affected by human activity, especially land reclamation for agricultural use and urban expansion, and by the impacts of pollution. A particular issue is 'coastal squeeze', where lines of fixed sea defences prevent the inland expansion of saltmarsh in the face of rising sea levels and losses to erosion. Now seen as a valuable buffer mitigating the coastal impacts of rising sea levels and increased storminess, some areas of saltmarsh are being deliberately allowed to expand by breaching former sea defences. Economic uses of saltmarshes have included seasonal grazing and wildfowling. In some areas they supported a prolific salt-making industry, boiling off the brine to leave sea salt and leaving tangible remains include 'red hills': mounds of burnt debris and briquetage. Past and ongoing human activity has also affected the creation of deposits supporting saltmarsh in at least some areas: millennia of material washed downslope from agricultural soil disturbance and extractive industries on land have had profound geomorphological effects on many of our river valleys and contributed to the amounts and chemical composition of the silts deposited in our estuaries.

Sources and geoprocessing: historic and modern OS maps, environmental data

Expression: inter-tidal, coastal land

10.3.2 Sandy foreshore

Description: The foreshore is, for HSC, broadly equated with land sloping down through the inter-tidal zone from the landward coastal margin. The extent of the foreshore is defined by perception of inter-tidal rather than by detailed tidal levels (see 1.10.3). A foreshore surface may be covered by exposed sediments of various grain sizes, by loose rock or bedrock, or it may have a vegetation cover as in a 'Saltmarsh' (qv). In a 'Sandy foreshore', as may be expected, the predominant cover is exposed fine rock sediments of a grain size generally perceived as 'sand'. It is the perception that matters more than the technical definitions of sand by particle size (eg http://www.bgs.ac.uk/planning4minerals/Resources_3.htm). Human interventions have had a considerable effect on the current distributions of sandy foreshores, with deliberate retention of sand in some areas by use of groynes, and corresponding depletions elsewhere, by beach replenishment works, and by quarrying of beach sand for the construction industry to name a few. Many sandy foreshores are now visited unintensively for leisure (if intensively visited, they may better class as 'Leisure beach' (qv)) and they form one of the principle areas by which most people engage directly with the inter-tidal and marine zones. Other cultural activity now or previously affecting this Type includes shellfish and bait gathering, and impromptu areas for landing and loading cargo. As easy landing places, many sandy foreshores form the focus for military coastal defence systems. Their shelving profile also makes them high risk zones at times of extreme high spring tides and storm surges so many are backed by coastal sea defences. The distribution of sand on foreshores varies on long and short cycles, giving potential in some areas for the occasional exposure of buried old land surfaces, occupation layers and structures, and associated palaeo-environmental deposits.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources

Expression: inter-tidal, coastal land

10.3.3 Shingle foreshore

Description: The foreshore is, for HSC, broadly equated with land sloping down through the inter-tidal zone from the landward coastal margin. The extent of the foreshore is defined by perception of inter-tidal rather than by detailed tidal levels (see 1.10.3). A foreshore surface may be covered by exposed sediments of various grain sizes, by loose rock or bedrock, or it may have a vegetation cover as in a 'Saltmarsh' (qv). In a 'Shingle foreshore', the predominant cover is exposed coarse rock sediments of a grain size generally

perceived as 'shingle' or 'pebbles'. Some result largely from natural processes, Chesil Beach for example, but human interventions have had a considerable effect on current distributions of many shingle foreshores, some retained by the use of groynes, others starved of shingle content by the same. Shingle beaches may contain remains of former military coastal defence works, sometimes exposed within present deposits, and many have formed military training areas. Many shingle foreshores are now visited unintensively for leisure (if intensively visited, they may be appropriate to class as 'Leisure beach' (qv)) and recreational angling from the shore. They form one of the principle areas by which most people engage directly with the inter-tidal and marine zones. Some shingle foreshores form banks or spits, creating sheltered marine areas which become the focus for leisure activities. Many have the potential for attracting marine and bird life, becoming a focus for 'Wildlife watching' (qv).

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: inter-tidal, coastal land

10.3.4 Sandflats

Description: Sandflats are relatively mobile, thick sand deposits, submerged at high tide and exposed at low tide, and often expressed as areas of sandbanks detached from the shore by tidal channels. Their form results from the complex interaction between hydrodynamic and sediment transport processes. Where sediment deposition results in deposition of finer particle sizes - clays and silts - the outcome is 'Mudflats', which can also be differentiated from sandflats in the ecological communities they support and, for HSC, their cultural implications. The processes giving rise to sandflats vary in their outcomes through time, producing shifting positions and sizes of sandbanks within an overall area of sandflats. Sandflats are common features of estuaries and shallow bays but can also occur on the open coast where prevailing currents and marine topography regularly produce appropriate depositional conditions. In a cultural sense, sandflats have long been perceived as severe hazards to coastal and estuarine shipping from their mobility and the resulting difficulties in maintaining accurate charts. But even if their internal structure may alter, many areas of sandflats are specifically named. Their cultural notoriety to ship's pilots may be matched by dangers of stranding and quicksands for walkers using sandflats at low tide to short-cut otherwise long coastal journeys. Other common cultural activities on sandflats include shellfish harvesting for food and bait while some support areas of shellfish farming. Activities on many areas of sandflats are now controlled by various wildlife conservation designations, themselves a cultural intervention. More obviously destructive intervention derives from the impact on sandflats of dredging navigation channels to coastal ports. Pollution from coastal industries and nitrogen run-off are also identified as affecting sandflat ecology.

Sources and geoprocessing: historic and modern OS maps, environmental data, documentary sources

Expression: inter-tidal

10.3.5 Mudflats

Description: Mudflats are relatively mobile, thick deposits of clays, silts, organic detritus and some very fine sand content, submerged at high tide and exposed at low tide, and often expressed as areas of muddy banks in sheltered areas along estuary sides, to seaward of saltmarsh (qv) and along the fringes of sandflats (qv). Their form results from the complex interaction between hydrodynamic and sediment transport processes. Where sediment deposition results in deposition of coarser particle sizes - sands - the outcome is 'Sandflats', which can also be differentiated from mudflats in the ecological communities they support and, for HSC, their cultural implications. The processes giving rise to mudflats vary in their outcomes through time although the conditions producing mudflats lead to greater stability in their position and extent than is the case with sandbanks in sandflats. Culturally, in many estuaries, past and ongoing human activity has contributed to the deposits now evident as mudflats: millennia of material washed downslope from agricultural soil disturbance and extractive industries on land have had profound geomorphological effects on river valleys and contributed to the amounts and chemical composition of the silts deposited in our estuaries. Mudflats also contribute hazards to estuarine shipping. Common cultural activities on mudflats include shellfish harvesting for food and bait while some support areas of shellfish farming. Activities on many areas of mudflats are now controlled by various wildlife conservation designations, themselves a

cultural intervention. More obviously destructive intervention derives from the impact on mudflats of dredging navigation channels to coastal ports, while the bow-wave wash from passing shipping has been invoked as a cause of mudflat erosion on some cases. Pollution from coastal industries and nitrogen run-off are also identified as affecting mudflat ecology.

Sources and geoprocessing: historic and modern OS maps, environmental data, documentary sources

Expression: inter-tidal

10.4 Cultural topography (marine)

This Character Type refers to those aspects of cultural topography, as described in 1.10, whose physical expressions are predominantly to seaward of Mean Low Water. For defining HSC terms and extents of their polygons when applied, the inter-tidal zone is perceptual at least as much as a matter of technical definition. What really matters for HSC is the actual expression of Sub-character Types at any given location, not a technical cut-off at MLW.

10.4.1 Coarse sediment plains

Description: Extensive areas of seafloor whose surface sediments predominantly comprise different grades of pebbles, rocks, boulders etc with lower sand and very low silt and clay contents. Of cultural relevance is their role as a spawning ground and habitat for particular commercially-exploited fish species and hence their correlation with particular fisheries and their management considerations by government, conservation bodies and fishing communities. Bottom trawling methods also have significant impacts on marine habitats and biodiversity in this Sub character Type. Coarse sediment plains also provide distinct preservation conditions for their share of the occasional sea-floor shipwrecks present across all the seas. Their relationship to marine topography has implications for the potential form and survival of underlying palaeolandscape components (qv). They will also incorporate their areas' share of the 'background noise' of pollution, especially by littered debris, which now affects all marine areas from sea surface to sea floor.

Sources and geoprocessing: BGS, JNCC, UK SeaMap, Natural England

Expression: sub-sea floor, sea floor

10.4.2 Fine sediment plains

Description: Large areas of seafloor whose surface sediments predominantly comprise different grades of sand and very low silt and clay content. Of cultural relevance is their role as a spawning ground and habitat for particular commercially-exploited fish species including flatfish and hence their correlation with particular fisheries and their management considerations by government, conservation bodies and fishing communities. Bottom trawling methods also have significant impacts on marine habitats and biodiversity in this Sub character Type. Fine sediment plains also provide distinct preservation conditions for their share of the occasional sea-floor shipwrecks present across all the seas. Their relationship to marine topography has implications for the potential form and survival of underlying palaeolandscape components (qv). They will also incorporate their areas' share of the 'background noise' of pollution, especially by littered debris, which now affects all marine areas from sea surface to sea floor.

Sources and geoprocessing: BGS, JNCC, UK SeaMap, Natural England

Expression: sub-sea floor, sea floor

10.4.3 Mud plains

Description: Extensive areas of seafloor whose surface sediments predominantly comprise fine sediment grades with high silt and clay contents. Occurring mainly in sheltered seas around England, they have cultural relevance as the chief habitat for a range of commercially-exploited shellfish species, including nephrops spp. (Langoustines/Dublin Bay prawn), and hence their correlation with particular fisheries and their management considerations by government, conservation bodies and fishing communities. Trawling methods also have significant impacts on marine habitats and biodiversity in this Sub character Type. Mud

plains provide distinct preservation conditions for their share of the occasional sea-floor shipwrecks present across all the seas. Their relationship to marine topography has implications for the potential form and survival of underlying palaeolandscape components (qv). They will also incorporate their areas' share of the 'background noise' of pollution, especially by littered debris, which now affects all marine areas from sea surface to sea floor.

Sources and geoprocessing: BGS, JNCC, UK SeaMap, Natural England

Expression: sub-sea floor, sea floor

10.4.4 Mixed sediment plains

Description: Large areas of seafloor whose surface sediments predominantly comprise heterogeneous sediment grades, from pebbles and gravels to sands, silts and clays. The overall composition can be highly variable, as can the form of their grades' mixing: in addition to well-mixed sediments they may include component mosaics and/or layering. Their highly variable composition and form distinguishes this Sub-character Type from the coarse and fine sediment plains and their more definable cultural implications for fish habitat, shipwreck preservation and palaeolandscape form, however bottom trawling methods still have significant impacts on marine habitats and biodiversity in this Sub character Type. These areas also incorporate their share of the 'background noise' of pollution, especially by littered debris, which now affects all marine areas from sea surface to sea floor.

Sources and geoprocessing: BGS, JNCC, UK SeaMap, Natural England

Expression: sub-sea floor, sea floor

10.4.5 Sand banks with sand waves

Description: An area of sand banks containing extensive wavelike structures and megaripples formed by rapidly moving currents of water on the sandbanks' surface. May occur around the margins of sandflats (qv) and be barely submerged at various states of the tide or they may occur in deeper water. They can pose hazards to shipping and many in shallower waters appear on charts. They form a spawning ground and habitat for various commercially-exploited fish species including flatfish and shellfish, hence their correlation with particular fisheries and fishery management considerations by government, conservation bodies and fishing communities. Shellfish harvesting, dredging and bottom trawling methods have significant impacts on marine habitats and biodiversity in this Sub character Type. Sand banks with sand waves also provide distinct preservation conditions for shipwrecks present within them. Their relationship to marine topography has implications for the potential form and survival of underlying palaeolandscape components (qv). They will also incorporate their areas' share of the 'background noise' of pollution, especially by littered debris, which now affects all marine areas from sea surface to sea floor.

Sources and geoprocessing: historic and modern charts, JNCC, UK SeaMap, Natural England

Expression: sub-sea floor, sea floor, inter-tidal

10.4.6 Exposed bedrock

Description: Areas of the sea-floor whose surface predominantly comprises bedrock exposures along with associated rocks and boulders but little finer sediment deposition. Variation in depth and surface irregularity of the bedrock exposures will correspond with the dangers they pose to shipping. However where bedrock rises significantly from the general level of the sea-floor in shallower waters, it may be more appropriately classed as the 'Submerged rocks' (qv) navigation hazard, and if it breaks the sea surface, then as 'Rock outcrops' (qv). Where bedrock extends onto the foreshore it may become part for a 'Rocky foreshore' (qv) if not dominated by overlying sediments. Bedrock exposures are liable to snag fishing gear and may figure as 'rough' or 'catchy' areas in fishing ground perceptions. Their potential hazard to shipping may increase the shipwreck debris to be found in this Sub-character Type, while it will also contain its share of the 'background noise' of pollution, especially by littered debris, which now affects all marine areas from sea surface to sea floor. The Sub-character Type 'Exposed bedrock' is not appropriate for use at Sub-sea floor level: it's no longer 'exposed' there.

Sources and geoprocessing: BGS, historic and modern charts, JNCC, UK SeaMap, Natural England

Expression: sea floor

10.4.7 Cultural topography (marine) (unspecified)

Description: Areas of the sea-floor or sub-sea floor whose implications for historic cultural character have not been defined beyond the likelihood that they will contain their share of the 'background noise' of pollution, especially by littered debris, which now affects all marine areas from sea surface to sea floor and deposits beneath it. Application of this Sub-character Type generally reflects limited data availability at the time of HSC assessment. Such limitations can occur for various reasons but this Sub-character Type should not be used as a convenient proxy for researching sources likely to bear evidence for these areas' sea floor/sub sea floor character. With that in mind, the sources listed below are examples whose content may normally be expected to be checked before use of this Sub-character Type.

Sources and geoprocessing: BGS, historic and modern charts, JNCC, UK SeaMap, Natural England

Expression: sub-sea floor, sea floor

11 WOODLAND

11.1 Woodland

The 'Woodland' Broad Character Type and Character Type becomes of relevance for inclusion on HSC where its character and the activities underlying it have a distinctly maritime flavour or connection. Examples may include where woodland has been established along the edges of tidal rivers, cliffs and former coastal rough ground to minimise erosion. Coastal woodlands, usually uniquely named with clearly defined ownership and management rights, were often important in providing timber and other materials for boat building and other coastally-focussed activities. Patterns of woodland also form distinctive elements of the coastal landscape visible from the sea, aiding position-finding from ships.

While acknowledging these aspects of maritime relevance, most woodland will also be covered in the HLC for the area. Many HLCs adopt detailed subdivision of 'Woodland' Sub-character Types much which is not necessarily appropriate for HSC. So while keeping with terms deployed by most HLCs, HSC's coverage of woodland at Sub-character Type level has been kept fairly generalised, according with Character Type (sometimes Broad Character Type) level of many HLCs.

11.1.1 Ancient woodland

Description: Ancient woodland is formally defined as land that has had continuous woodland cover since at least 1600 AD (http://www.english-nature.org.uk/pubs/gis/tech_aw.htm). The two main varieties are:

'Ancient semi-natural woodland' - ancient woodland sites that have retained the native tree and shrub cover that has not been planted, although it may have been managed by coppicing or felling and allowed to regenerate naturally; and

'Ancient replanted woodland' - ancient woodland sites where the original native tree cover has been felled and replaced by planting, usually with conifers and usually during the 20th century.

The Ancient Woodland Inventory is a digital database of ancient woodland but has a number of limitations, for example that only ancient woodlands over 2ha in extent on the 1920s base maps are included (see http://www.english-nature.org.uk/pubs/gis/tech_aw.htm for full discussion). Those limitations, coupled with the relevance to HSC discussed in 1.11.1, need consideration when assessing this Sub-character Type.

Sources and geoprocessing: historic and modern OS maps, environmental data, documentary sources

Expression: coastal land

11.1.2 Plantation

Description: Plantations are areas deliberately planted, often cyclically-replanted, with trees on new sites as a crop to supply industrial and domestic demands for wood. The new sites distinguishes them from 'Ancient replanted woodland' (see 1.11.1.1).

Very few plantations date prior to 1700 and those from the 18th and 19th centuries were generally of small scale, unintensively managed and of native or exotic deciduous species. By far the majority of existing plantations result from the creation of the Forestry Commission in 1919 in response to Britain's shortage of timber after the First World War. The establishment of 20th century plantations accelerated after the Second World War, driven by the perceived need for self-sufficiency in timber coupled with rapidly increasing investment in, and mechanisation of forestry processes. These modern plantations commonly contain only one or two species of tree, usually conifers, and often extend over considerable areas, subdivided by access roads and rides into compartments of trees planted at of one time.

While a number are coastally located, few plantations have clear maritime distinctiveness beyond a role for some in visually distinguishing one portion of the coastline from another.

Sources and geoprocessing: historic and modern OS maps, environmental data, documentary sources

Expression: coastal land

12 ENCLOSED LAND

The 'Enclosed land' Broad Character Type relates to areas whose character is dominated by land enclosure, usually for agricultural land but which may be of many differing forms and patterns reflecting its location and a considerable range of potential dates, purposes and backgrounds in terms of cultural processes. HLCs have developed a very wide-ranging terminology for types of enclosed land to correspond with that diversity in form and understanding across the country. Much of that HLC diversity has only limited relevance for inclusion in HSC, even where the enclosed land in question is coastally situated, and most should be left for coverage by HLC alone. The key criterion for inclusion of enclosed land in HSC is that its character and the processes and activities underlying it have a distinctly maritime flavour or connection. Obvious examples will include areas of enclosed reclaimed land along the coastline.

12.1 Reclaimed land

The 'Reclaimed land' Character Type refers to areas of land enclosed, drained and taken in from along the coast for a variety of mostly agricultural purposes. It does not include areas of land reclamation designed specifically for urban settlement or port expansion. Distinctively flat with wide horizons, areas of coastal enclosed reclaimed land are often very extensive, sometimes now extending far inland and undertaken over a considerable period. Field patterns in reclaimed land are often defined by networks of drainage ditches rather than upstanding field boundaries. Time depth within long-established areas of land reclamation may be evident from the ditch patterning and the size of fields they produce, coupled in some areas with successive lines of former sea wall behind the latest. Some areas of reclamation are maintained by pumping stations, formerly wind-pumps, transferring water into larger channels enclosed by levees draining major areas. Enclosed land can be reclaimed from various coastal contexts, whether directly from the sea, or from tidal marsh buffering the sea from the land, or from former coastal wetlands that were no longer tidal. In some areas of land reclaimed from former tidal marsh, sea walls are being deliberately breached under 'managed realignment' policies to return them to saltmarsh as a buffer against rising sea levels and storm surges.

12.1.1 Reclamation from sea

Description: Within the range of reclaimed land described in 1.12.1, this Sub character Type relates to that for which the topographic or other evidence indicates the land was reclaimed directly from the sea by enclosure and drainage.

Sources and geoprocessing: historic and modern OS maps, environmental data, documentary sources

Expression: inter-tidal, coastal land

12.1.2 Reclamation from tidal marsh

Description: Within the range of reclaimed land described in 1.12.1, this Sub character Type relates to that for which the topographic or other evidence indicates the land was reclaimed from tidal marsh, usually salt marsh, by enclosure and drainage. Under ‘managed realignment’ policies, some areas of this Sub-character Type are being returned to saltmarsh as a buffer against rising sea levels and storm surges.

Sources and geoprocessing: historic and modern OS maps, environmental data, documentary sources

Expression: inter-tidal, coastal land

12.1.3 Reclamation from wetland

Description: Within the range of reclaimed land described in 1.12.1, this Sub character Type relates to that for which the topographic or other evidence indicates the land was reclaimed from former wetland that was no longer, or may never have been, tidal. Examples may include reclamation from former fen bogs.

Sources and geoprocessing: historic and modern OS maps, environmental data, documentary sources

Expression: coastal land

13 UNIMPROVED LAND

The ‘Unimproved land’ Broad Character Type refers to a range of Sub character Types which have not undergone agricultural improvement; their general, though not universal, agricultural use is for grazing livestock. Generally unintensively managed and perceived by many as ‘semi-natural’, these are often also areas of presently unenclosed land, sometimes held as common land. Reflecting the unintensive management, these areas often retain evidence for earlier enclosure, settlement and other activity from the prehistoric to the recent. Apart from grazing, these areas are often well-used for recreation and many have wildlife conservation designations, themselves a cultural intervention. Some areas of coastal unimproved coastal land are still used for military training and contain sites of past coastal defence installations.

Although unimproved land does have relevance for HSC as forming the distinctively coastal character of many areas, much of that HLC diversity does not have clear coastal character or representation. The key criterion for inclusion of unimproved land in HSC is that its character and the processes and activities underlying it have a distinctly maritime flavour or connection. To accommodate and underline that, the Sub-character Types under this Broad Type are covered by the ‘Coastal Rough Ground’ Character Type.

13.1 Coastal rough ground

Under the Broad Type of ‘Unimproved land’, the ‘Coastal rough ground’ Character Type includes various forms of very unintensively managed and often unenclosed land which characterise the coastal land periphery of many areas. Such coastal rough ground often contrasts with highly intensively managed areas immediately adjacent inland but also, as a summer grazing resource, it forms an important and distinctive part of the coastal agricultural economy. It also frequently provides a refuge for rare and endangered ecological communities specific to coastal margins, hence it is often subject to wildlife conservation designation, especially heathland. Of particular relevance for HSC, coastal rough ground provides the Character Type accommodating much of our coastal access provision and most of our long distance coastal footpaths: the places in which many people experience directly their coastal landscape and seascape perceptions. Typical forms of coastal rough ground are rough grassland, scrub and heath.

13.1.1 Rough grassland

Description: This Sub character Type encompasses those areas of ‘Coastal rough ground’ (qv) dominated by unintensively managed grassland. Maintenance of such grassland may be the result of long traditions of coastal rough grazing but in some areas it is being deliberately re-introduced as a conservation measure to prevent land reverting to scrub. Various cultural aspects typical of this Sub character Type are discussed in 1.13 and 1.13.1

Sources and geoprocessing: historic and modern OS maps, environmental data

Expression: coastal land

13.1.2 Scrub

Description: This Sub character Type encompasses those areas of ‘Coastal rough ground’ (qv) covered by scrub vegetation: areas dominated by shrubs or bushes of woody plants and sometimes including small trees. Scrub may vary considerably in its openness or impenetrability, and coastal scrub may be dominated by distinctive scrub species. The effect of salt spray blown by strong winds may shape stands of coastal scrub into dramatic asymmetrical shapes that have a strong impact on visitors perceptions of such areas. In some areas, the development of coastal scrub from rough grassland is being inhibited deliberately by the re-introduction of grazing as a conservation measure. Various cultural aspects typical of this Sub character Type are discussed in 1.13 and 1.13.1, though scrub may be so dense as to prevent recreational access, or the desire for it.

Sources and geoprocessing: historic and modern OS maps, environmental data

Expression: coastal land

13.1.3 Heathland

Description: This Sub character Type encompasses those areas of ‘Coastal rough ground’ (qv) dominated by dwarf shrubs including heathers and gorses in varying proportions, sometimes in a mosaic with patches of grassland and locally damp areas. Usually on acidic soils in relatively wet areas, they provide a habitat for many rare plant and animal species for which their surviving areas are extensively and frequently covered by wildlife conservation designation and conservation management initiatives. Various cultural aspects typical of this Sub character Type are discussed in 1.13 and 1.13.1.

Sources and geoprocessing: historic and modern OS maps, environmental data

Expression: coastal land

14 CIVIC PROVISION

14.1 Civic Provision

The ‘Civic Provision’ Broad Character Type and Character Type relates to services provided by national or local government, or by other public bodies, that meet identified social needs or are otherwise available to members of society. Many are physical representations of the principles of civil society which have developed in Britain and Europe over many centuries: providing for good health and spiritual succour, respectfully disposing of the dead, educating young people and enabling the continued development of adults, and dealing appropriately with those who break the law. The class also encompasses the civil bureaucracies that maintain these services. The terms included in HSC under this Broad Character/Character Type are restricted to those having a distinct maritime expression.

14.1.1 Prison hulk

Description: A de-masted ship, moored and re-used as a floating prison (after NMR Maritime Craft Type Thesaurus). Commonly re-using decommissioned naval vessels, British use of prison hulks was initially authorised by Parliament in 1776 to accommodate prisoners of war during the American War of Independence. During the 19th century prison hulks were also used for civilian prisoners and formed holding quarters for civilian prisoners awaiting transportation. In England, most were moored in estuaries at or near naval bases in the Thames, the Medway, the Solent and the Tamar. Notorious for their appalling conditions, the use of prison hulks had largely been abandoned in Britain by the 1860s.

Sources and geoprocessing: historic and modern OS maps, historic and modern charts, documentary sources.

Expression: sea floor, water column, sea surface, inter-tidal, coastal land

14.1.2 Government office

Description: The offices and associated grounds of a national or local government department or related agency given legal responsibility for the administration of the country or a part of it (after Historic Characterisation Thesaurus). For inclusion in HSC, the scope of activity administered from the Government Office in question should have a direct maritime connection, for example Customs Houses, harbourmasters' offices and other port administration offices, rather than just being coastally situated.

Sources and geoprocessing: historic and modern OS maps, documentary sources.

Expression: coastal land

14.1.3 Educational establishment

Description: The buildings and associated grounds of a school, college or similar educational institution. For inclusion in HSC, the scope of the dominant educational activity should have a distinct maritime connection, for example sail-training. Naval and other specifically defence-related training colleges should be subsumed under 'Military base'.

Sources and geoprocessing: historic and modern OS maps, documentary sources.

Expression: sea surface, inter-tidal, coastal land

15 COMMERCE

Systems, activities, functions and institutions involved in transferring goods and services from producers to consumers and thus affecting the business and profitability of an economy. The scale of such commercial operations can range from facilities serving fairly localised networks to facilities directly serving major national and international trade hubs. In all cases, such systems of commerce also depend on the separate class Communications and the products of several other classes such as Industry, Navigation and Ports and Docks (after Historic Characterisation Thesaurus).

15.1 Financial administration

Commercial operations trading commodities depend heavily on bodies providing the necessary financial administration, especially banking and insurance support. While many such major national institutions such as the Bank of England and the Stock Exchange handle a diversity of financial policy and transactions and so are beyond the scope of HSC, some have a specialist association with maritime trade or sector of it, often of long standing such as Lloyds of London and the Baltic Exchange: accordingly those do come within the view of HSC.

15.1.1 Financial Institution

Description: The offices and directly associated grounds of institutions and companies providing financial services to commercial operations. For inclusion in HSC, the services provided by such offices should have a largely maritime character or connection.

Sources and geoprocessing: historic and modern OS maps, documentary sources

Expression: coastal land

16 HLC

HSC (Historic Seascape Characterisation) does not normally extend its landward overlap with HLC (Historic Landscape Characterisation) beyond areas whose historic character has a distinctly maritime expression. In most cases, that produces HSC polygons in coastal land and inter-tidal areas whose present and previous character is accorded values from the HSC terms hierarchy, whether or not that matches the perspective recorded in HLC.

However some areas have a distinctly maritime previous character but may not have any such maritime expressions in their present character. An example of such circumstances would include areas of known historic coastal fortifications which have subsequently been levelled and redeveloped for residential housing or other entirely land-based uses. For these cases, 'HLC' is entered as the value for present character at all levels of the HSC terms hierarchy.

Using 'HLC' as a holding term in this way signals to HSC users to consult the relevant HLC for that area's historic character in the present but to explore the HSC database where records of earlier maritime-related historic character will be found. It enables HSC to include such areas of previous maritime character without unduly importing the breadth of HLC terms into HSC terminology to cover their present non-maritime character. It also avoids the ambiguity of leaving a nul value or a blank for those areas' present character. Because 'HLC' is used in this manner as a holding term and a pointer, the HSC user should refer to the relevant HLC database for details of the various historical processes, values and perceptions, research potential, etc, relating to those areas' present historic character.

This approach should not be used to bring into HSC landward areas that have neither present or previous maritime character, nor should it apply to seaward of the coastal land overlap with HLC coverage.

16.1 HLC

As description for HLC Broad Type.

16.1.1 HLC

Description: As description for HLC Broad Type

Sources and geoprocessing: relevant sub-regional HLC databases; regional HLC databases where available; National HLC database

Expression: inter-tidal, coastal land