

Maritime Landscapes

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Abstract

The sea is not a palimpsest of human activity, in contrast with much of the land, but none the less both the sea, the foreshore and the coastal margin, when they are suitably observed and interpreted, contain clues to their exploitation in the past. Ships may penetrate beyond the coastal zone as such to nodal points such as ports or bridgeheads, which often lie well inland. The maritime landscape thus has to be interpreted, rather than merely plotted or observed, with the aid of models; these models tend to be more easily formulated for historic periods. This means that, for early or primitive contacts by sea, the informed observation of natural landscape features and an appreciation of the long-established parameters of navigation and pilotage are the best means of envisaging maritime settlement and economy in earlier times.

The cuckoo cries, incites the eager breast
On to the whale's roads irresistibly
Over the wide expanses of the sea ...
The Seafarer (Hamer 1970, 191)

The call of the sea has long been recognised as an alternative prompt for action, as an invitation to leave the regular round of rural or urban life and explore distant places, even if at the expense of great danger and hardship. Life on board ship takes on a routine of its own, with its own rules and norms of behaviour, and, in extreme cases, the seaman may become a stranger or a misfit in his home society. The history of maritime contact is one of movement, of transport, and of changing scenery, unlike the repetitive, introverted surroundings of much terrestrial life. The very basis of sea travel, the surface of the ocean, is changeable and mobile, unlike the firm land, which can preserve, in its surface features, the record of past activities and be read like a palimpsest by the landscape historian or archaeologist. How can the sea and the coastal zone be brought within a coherent scheme for the reconstruction of settlement and economy in former times – that is to say, within the realm of landscape history and archaeology?

From the maritime point of view, one can define three ascending levels of landscape archaeology. The first is the *plot*, the observation and the mapping of features, sometimes called 'the relict cultural landscape' (Westerdahl 1992). The plot is the field of cultural resource management, as exemplified by Fulford, Champion and Long (1997), and, as Westerdahl (1994, 266) admits, was the initial connotation of the term 'maritime cultural landscape'.

The second level may be termed the *pattern*, sometimes called 'material culture' or 'archaeology'. On land, the use of regressive mapping to identify phased patterning is a well-established technique; the surface of the open sea cannot be treated in this way, but submerged and inter-tidal cultural remains and features at the coast or on water routes inland, especially **nodal points** or **articulations** (e.g. harbours, locks) can. As Westerdahl (1994) says, this is not merely survey or conservation, but implies 'a theory on man's relationship with the shore and the sea'. He has defined the appropriate articulations as **transport zones**, which lie at right angles to the coast, and **local zones**, which lie in belts parallel to the coast. Similar concepts are used by Sherratt (1996), who identifies **trans-isthmian routes** and **patterns of linkage between adjacent coastlands**. The contact points between zones of either type comprise **transition points**, which will often, according to Westerdahl, be **maritime enclaves**, and are usually marked in the natural landscape by moraines, uplift zones, rapids or dangerous seas, so the **pattern** speaks for itself.

The third level of landscape archaeology, the *interpretative model*, comes into play where, as for instance in some of the examples from Britain which will be cited later on, a full understanding of the landscape involves a **functional** interpretation – the **web of interactions** which constitute the maritime cultural landscape, according to Firth, Watson and Ellis (1998), or the **system**, 'the total of all activities which have taken place in a given sea area', in the definition of Westerdahl (1994). Such an interpretation depends, of course, on a theory of social and political organisation in the past, that is to say, on **models**, which, for pre- or protohistoric studies, have to be based, not on documentary evidence, but on artefact distributions, traditional practice or common sense. To develop such a creative interpretation has been defined by Crumlin-Pedersen (1996) as a major objective of maritime archaeology – namely, 'to learn to perceive the landscape and the settlements as they were seen with the eyes of the sailor or fisherman in the past, approaching land from the sea or from navigable rivers'.

Problems of maritime archaeology

Coastal structures, such as wharves or quays, represent only part of the facilities, whether natural or artificial, which were used by boats and ships in earlier times, especially inland river-bank moorings, beaches used for unloading, or undeveloped creeks or havens used by smugglers or farmers. Predictive factors such as the depth of rivers or the draught of watercraft (cited by Aston 1985, 140) are difficult to determine and date, and all manner of means, from lighters to portage, were used to get to a destination if a vessel drew too much. Port

activity in the past often lay well inland of the sea coast: just one example is the Roman boat found at Barlands Farm in South Wales, which was built and equipped for sailing on the Severn Estuary (McGrail and Roberts 1999), though it lay at least 3 km from the Roman period coastline (Allen and Rippon 1997, 356). Whether on the coast or inland, where there were built port features, such as timber or stone waterfronts, encroachment (the extension of waterfronts into the watercourse) or, in recent times, mechanised port facilities have overbuilt or removed historic features on a massive scale; coastal havens, too, have been overrun or transformed by housing and the structures for tourism or retirement homes (Bayliss-Smith and Owens 1990, 231). Natural processes, too, tend to transform the maritime landscape significantly: coastline erosion may destroy whole ports, and, even where archaeological material can be recognised (as at Magor Pill) the transforms are usually violent, and both preservation and stratification of artefacts are uncontrolled (Allen and Rippon 1997). Though such destruction may be balanced elsewhere by good preservation in silted or sanded-up locations, the pattern of maritime occupation is often a patchwork, with gaps. Below high-water mark, there are often archaeo-

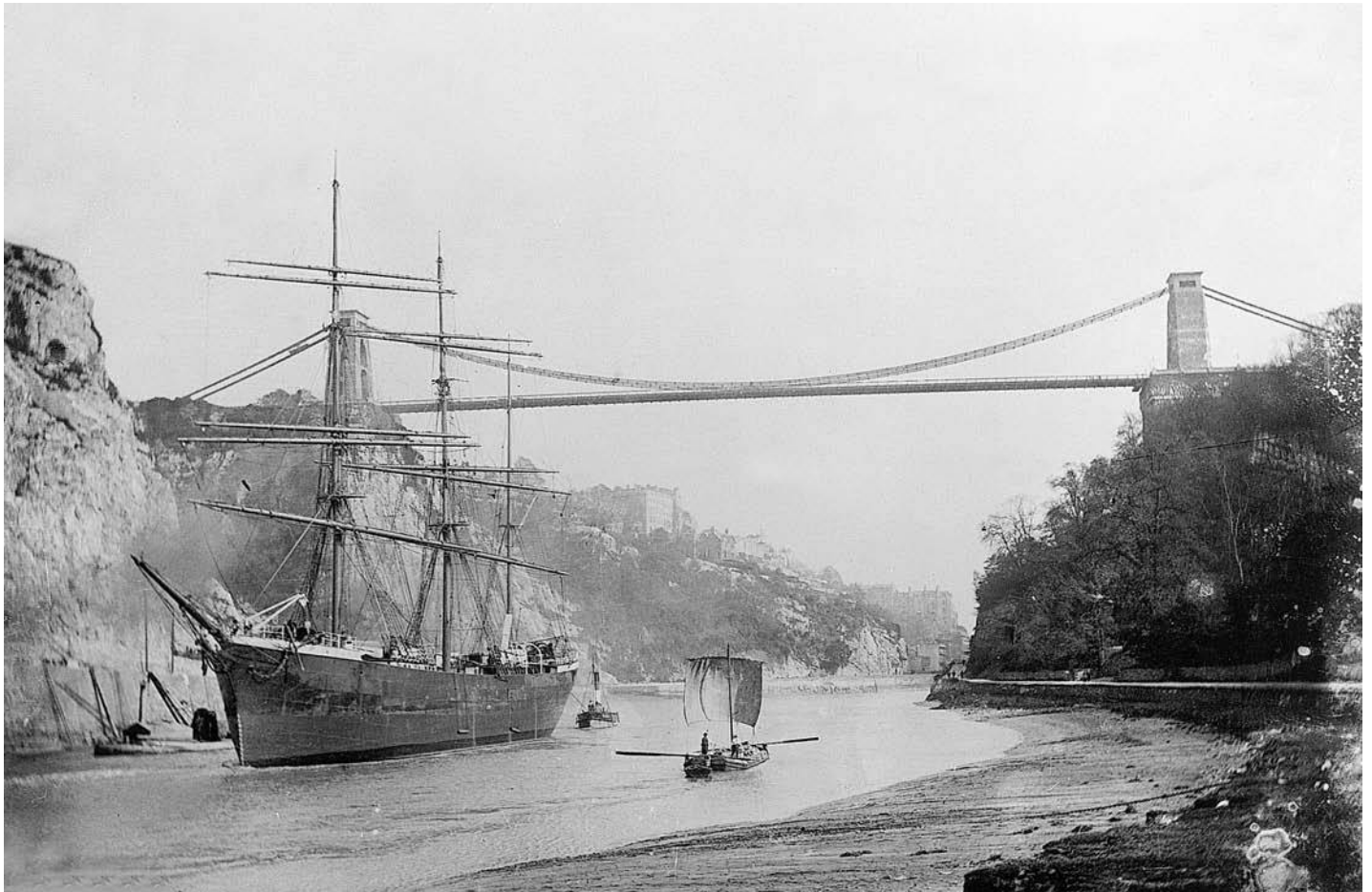


Figure 1.
Changing technology
and changed
perspectives: shipping
in the Avon Gorge
near Bristol at the end
of the nineteenth
century, as seen in a
photograph from the
York Collection,
Bristol City Museums.
The long tradition of
navigating on the tidal
Avon is seen in the
barge on the right,
which travels
upstream on the flood
tide, using its sail and
long oars to steer and
position the boat. The
steel barque on the
left is under tow from
two tugs (one out of
the picture), which
steam against the
flood, 'stemming the
tide', in order to
achieve steerage way:
This reversal of the
traditional procedure
has, in the twentieth
century, become the
usual way, and the
extreme ease and
efficiency of
tide-assisted navigation
have been forgotten.

logical remains such as fishing installations, which are difficult to date, tend to be repeatedly rebuilt, and may be impossible to relate to any nearby settlement or even to other intertidal areas. This aspect of the maritime landscape, while distinctive, is a further difficulty in its study.

In the sea, especially inshore, it is difficult to reconstruct past conditions as experienced and surmounted by seamen: though weather conditions can no doubt be assumed broadly to resemble those of the present day, other aspects of the marine environment, such as relative sea-level, or the range and force of the tides, may have changed beyond the possibility of reconstruction, or of dating the changes. Such long-term processes interact with the effects of storms, river silting, estuary enlargement, and human intervention, making further difficulties for archaeological interpretation of maritime remains (Allen 1997).

The archaeology of sea transport and travel is one aspect of the study of communications: on land, lines of communication may be marked out and preserved by roads and paths, but such lines are rarely to be found in the sea. Neither isolated losses (as in jetsam) nor assemblages (as in shipwrecks) are frequently encountered or easily found, and the movements of ships, as traceable by their wrecks, may bear no relation to their intended course, or to a regularly travelled route, though for the Graeco-Roman Mediterranean the frequency of known shipwreck sites enables some conclusions about movements (Parker 1992, 19).

Nodal points in the maritime landscape

The concept of 'maritime culture' or even 'maritime sub-cultures' has been propounded by some writers (e.g. Muckelroy 1978). Awareness of, or interest in, the sea, has been suggested as a social trait which might be discerned on the basis of archaeological remains; this concept has even been named 'maritimity'. However, study of Muckelroy's views has shown that categorical confusions render his definitions untenable (Parker 1995), and the concept of 'maritime culture' has been succinctly set in its place by Hunter (1994, 262), who writes: 'Maritime components [of a society] are no more than extrusions or reflections of the broader culture to which they belong, and are integral ...'. What we are concerned with is **specialisation** within a society or community, and there is no guarantee that specialised **functions** will leave traces in the material culture record. Going to sea may be an occasional, temporary activity, depending on other priorities or economic opportunities (as shown by Jenkins 1956), and leave no distinctive remains in settlements or burials.

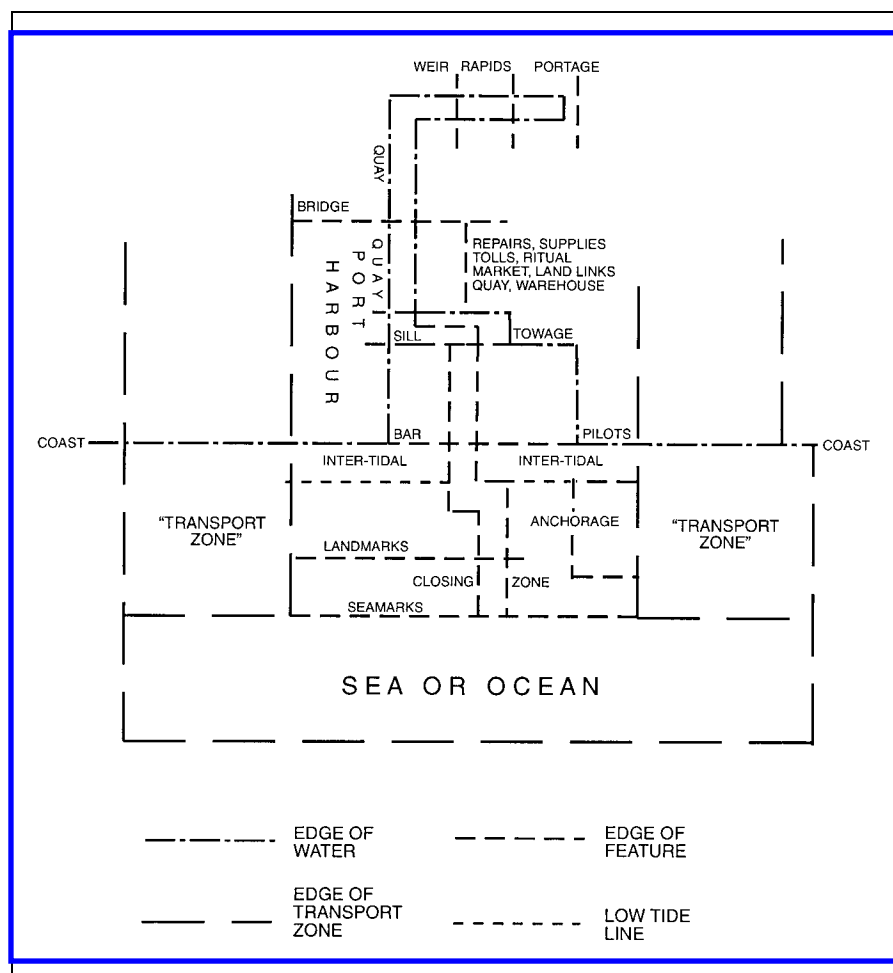
Notwithstanding, one can recognise concentrations of maritime activity, especially ports: Westerdahl (1994 and 1997) has termed these 'maritime enclaves'. These are to be expected at transition points between zones, for transition points, as, for example, where a cargo has to be offloaded into boats to lighten a ship, tend to be urban in nature. It is, however, quite possible for ships to anchor in the lee of a headland, or for boats to row up a tidal river on the flood, without pausing or landing; while there may indeed be many

nodal points in maritime landscapes, they are by no means identifiable in the firm socio-economic terms proposed by Westerdahl, but rather will need, in many cases, to be reconstructed from routes and sailing conditions. For instance, at the mouth of the River Avon below Bristol, ships requiring pilots, lighters or a tow paused at the small settlement of Pill; but Pill, until very recent times, had no parochial or manorial status and remained only a hamlet within a larger rural parish (Parker 1999). This low status means that it is unlikely that such settlements would be recognised as enclaves on archaeological evidence alone. Furthermore, any specialisation by a community can be profoundly affected by political or economic changes: ports such as Morwellham (Devon), well inland on the tidal River Tamar, show a multiple cycle of development and decline – vigorous, in the case of Morwellham, during the Middle Ages when it served Tavistock Abbey, and again in the nineteenth century during a boom in local mining, but in between times dormant, and now a mere heritage attraction (Finberg 1952). Thus location and natural conditions are not sufficient to indicate a transition point, and material remains may not define an enclave.

Maritime Landscapes

Figure 2.

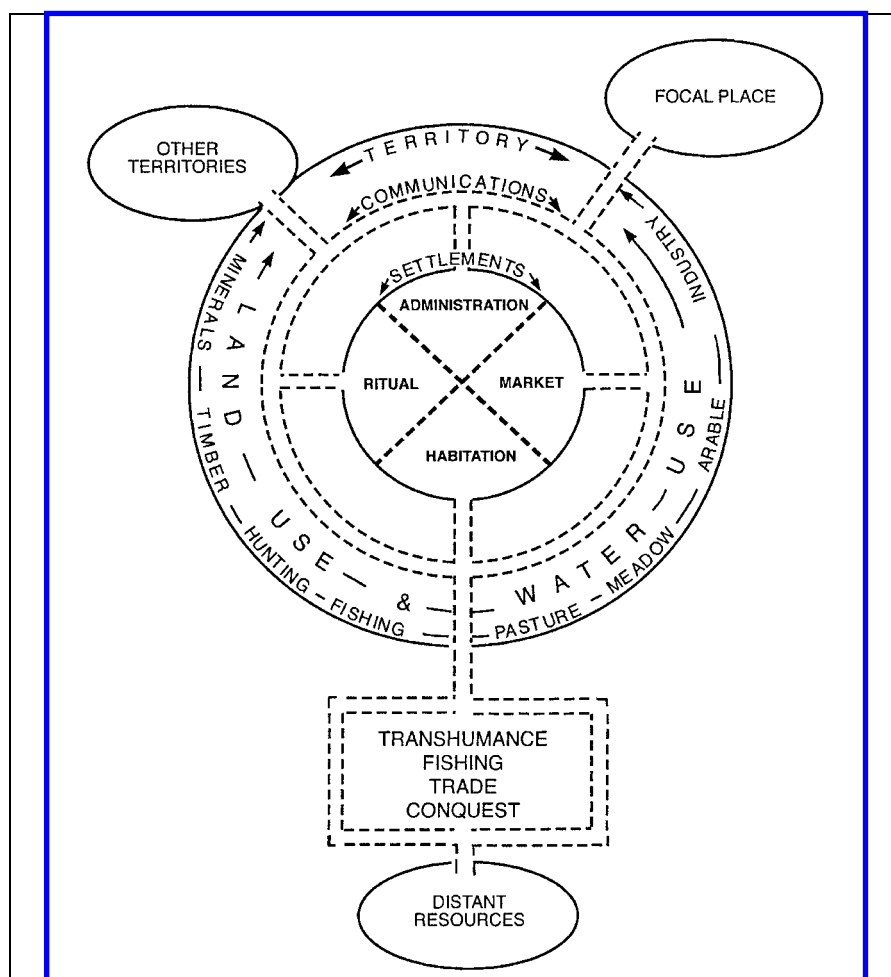
The articulation of water transport. From a functional point of view, the maritime landscape can be divided into zones, both along the coast and also from coast inland: these zones often have corresponding traditions of boat-types and practices. Zone boundaries are marked by nodal points, sometimes called maritime enclaves, where goods had to be transhipped, a pilot taken aboard, or supplementary propulsion arranged. The approach of a ship from the broad expanse of the ocean towards the increasingly constricted water of a harbour or river-port is marked out and constrained by both natural and man-made features, and it is the seaman's perception of this through the ages that constitutes the historical maritime landscape.



The transhipment of goods, at sand-bars, weirs, rapids or rock-barriers, was always an important feature of nautical trade. A similar transition lies at the change from seagoing to river navigation: sea-going ships need to be large and deep-keeled, while river boats have to be flat-bottomed and of shallow draft. Unfortunately there is overlap: seagoing ships regularly proceeded upstream to Bristol, Gloucester or even higher, while river barges such as Thames barges could, if necessary, carry out lengthy coastal voyages. The situation is too complicated for a general model to be built.

The difficulty of recognising a specialised community archaeologically has been emphasized by Dark (1995 126–9). A coastal location does not in itself indicate the status or function of a site; a port might be a place for landing people (such as pilgrims), not goods, or be involved in fishing but not maritime trade (so that assemblages of material from such a site might contain no significant indications of overseas contacts). Even if one can identify the presence of nautical specialists in a community, this need not characterise the community as a whole, for (to cite Dark 1995, 135–7) the special services of

Figure 3.
A settlement in its landscape: a new version of a diagram by Mick Aston (1985), to include use of water. The extent to which seafaring and navigation are specialised functions in a community is difficult to establish, and may leave no archaeological trace; none the less, no study of a settlement in context can ignore communications or the exploitation of water resources.



such as fishermen may just be part of the local subsistence economy, or one component in the services which the community requires.

Maritime specialisation is, in fact, rarely identifiable until relatively recent centuries, and then in particular instances. Such a case is Dartmouth (Devon) from the thirteenth to the seventeenth century. Dartmouth has a good harbour, sheltered and with deep-water moorings, albeit often difficult to enter or leave under square sail, but its hinterland, apart from tin exported from Dartmoor via Totnes, was poor. 'Dartmouth's commercial hinterland was particularly small,' writes Kowaleski (1992): like Plymouth, Dartmouth had 'a remarkable pull, a greater maritime orientation'. Especially as Totnes (higher up the River Dart) became more difficult to reach, Dartmouth became a prominent port, and, by 1377, 25 percent of Dartmouth's householders took part in overseas commerce. This specialisation continued into the sixteenth and seventeenth centuries, when the extensive reclamation and building projects which transformed the town were capitalised from fishing and maritime trade, and, according to Gray (1992, 176), 'it was the maritime character of Dartmouth which distinguished it from many other English boroughs'. So, although one might recognize Dartmouth as a specialist enclave, it can scarcely be taken as a representative of a numerous class of settlement. Nevertheless, it is clear that some kind of structure must be discernible in the maritime landscape, and this will be the subject of the rest of this paper.

Models

'Because of the complexity of the landscape,' writes Aston (1985, 154), 'we need a model on which to base, what we already know ... and to structure our future research.' Such models have, inevitably, been based on an inland agricultural settlement, and thus been either a linear strip or transect (as Aston 1985, fig. 92) or a circular territory (Aston, 1985, figs 1 and 59). Where the size or the distance away of neighbouring settlements is used to 'weight' a model, this still results in a plan plot of the focal settlement and the surrounding blocks of land (Aston 1985, figs 51 and 52). However, from the earliest days of British landscape archaeology, links and communications have also been taken into account (Aston and Rowley 1974, 119), and communications, whether intra-territorial, local or regional, are included in what one may call the rich picture of 'a settlement in its landscape' (Aston 1985, fig. 93). Although the measurement and modelling of communications are vital in geographical studies, at least of the modern world (Garner 1967, 304), it is not clear how this is to be done archaeologically.

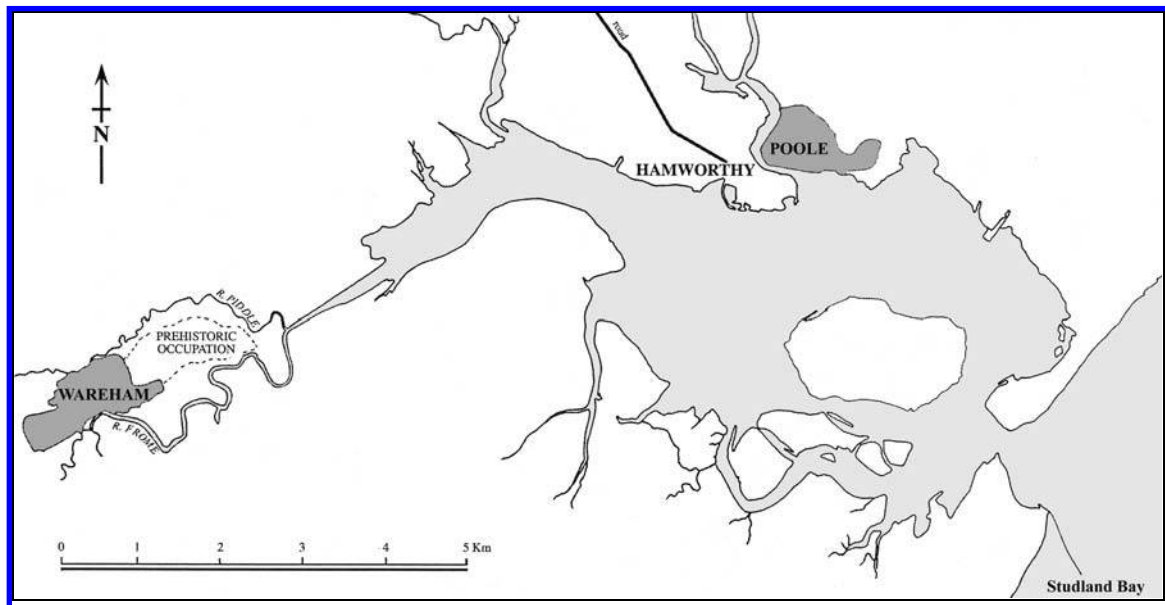
The importance of water transport is certainly prominent in Aston's study (1985, 11). 'Roads, tracks, rivers and the small harbours and ports on rivers, estuaries and the coast were vital for moving goods about in the past.' As far as river trade is concerned, parameters for its reconstruction are set by the size and draft of boats at different periods, and by changes in river silting or water flow (Aston 1985, 140). For the sea, where 'as well as a host of river jetties and

transhipment points, almost any small cove, beach or inlet around the coast would have been used in earlier times for the loading and unloading of goods', parameters for ship or cargo size at different periods can be inferred from remains of excavated quays or jetties. The distribution of artefacts can also provide a model for transport links, though, when it comes to the routes themselves, neither ridgeways, roads, river navigations nor coastal voyages can be dated by excavation (Aston 1985, 144). The extent to which artefact distributions can stand proxy for transport links is debatable, though such information can certainly be used to posit transport links and stimulate the search for other evidence.

A difficulty for landscape archaeology and the design of maritime models is the relatively undeveloped nature of conceptual mapping (pointed out by Dark 1995, 167–8). It is a truism that, at least for bulk cargoes or indivisible loads, water transport is immensely cheaper and more convenient than land, until the development of railways (e.g. Peacock and Williams 1986, 63–6): when cost is taken into account, therefore, places linked by sea-routes are closer than places linked by land. Travel by water often requires less energy than land travel, and may be much quicker: the links of eastern England with other regions round the North Sea are therefore close, even though they are separated by a considerable distance topographically (Carver 1990). The modelling of sea-transport links would thus involve the topographic distortions of conceptual mapping, whereas the landscape archaeology of settlements has traditionally been based on two-dimensional cartographic overlays. Even distribution of artefacts should, for this purpose, be plotted on a scale of dispersal which takes ease of movement or economic forces into account as a weighting factor. The alternative is to restrict the representation of transport links to a merely token systematic input or output. This would produce an incomplete view of the activity of a port settlement.

Urban landscape development

The historic landscape of an ancient port tends to be obscured by successive uses and developments, or, if the port has been abandoned, by reuse. The general trend for the development of ports is, initially, discharge on to a beach, hard, creek-margin or common open space: this tends to be one side of a market-place, overlooked by a church in the early Middle Ages; later, encroachment by individual quays or houses, with unloading direct; then, further encroachment to create a common, deep-water quay frontage, with discharge into carts or sledges; finally, the construction of warehouses or transit sheds close to the water's edge for commercially organised and often mechanised transhipment. This 'portuary landscape', as seen, for instance, at King's Lynn, can normally be recovered only by excavation; the paraphernalia of industrial docksides – bollards, rail lines, cranes, sheds, walled enclosures, basins, dry docks, canal junctions – for the most part have no parallel in early periods. The development of the port may sometimes be discerned in the street plan,

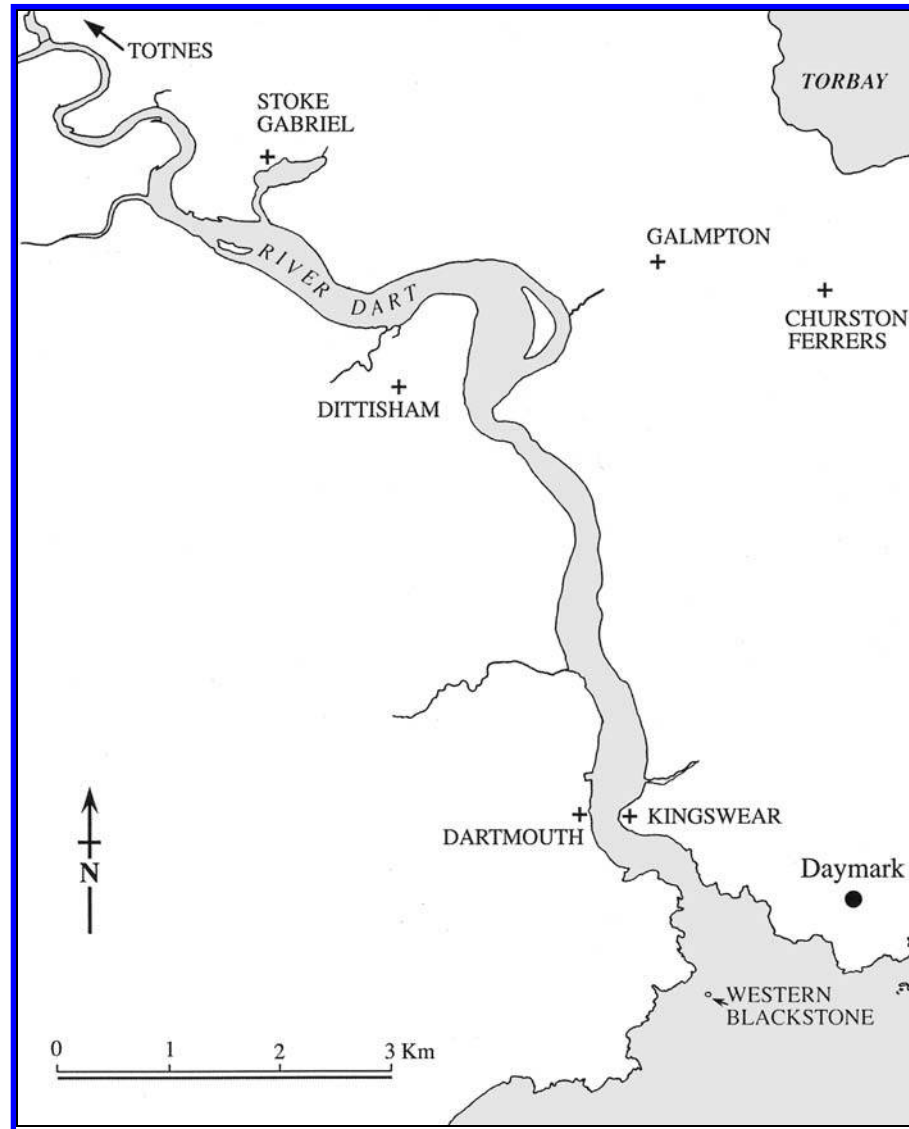


where the original beach line can survive as a sinuous street, parallel with the later waterfront (Schofield 1999). The sequence may also be truncated by site migration, a relatively frequent occurrence (cf. Westerdahl 1995). Migration is not necessarily simple: in Poole Harbour, for instance, the low peninsula on which Wareham is positioned was occupied from Mesolithic times right through to today, but at the time of the Roman conquest of AD 43 a base-port was established at Hamworthy, with better seaward and inland access; after the Roman period, however, it was Wareham which survived as a settlement and grew into a port, by the eleventh century if not before, only to lose much of its trade to the new port of Poole during the Middle Ages; in modern times, commercial traffic operates from new deep-water berths at Hamworthy, and both Poole Quay and Wareham serve only pleasure craft.

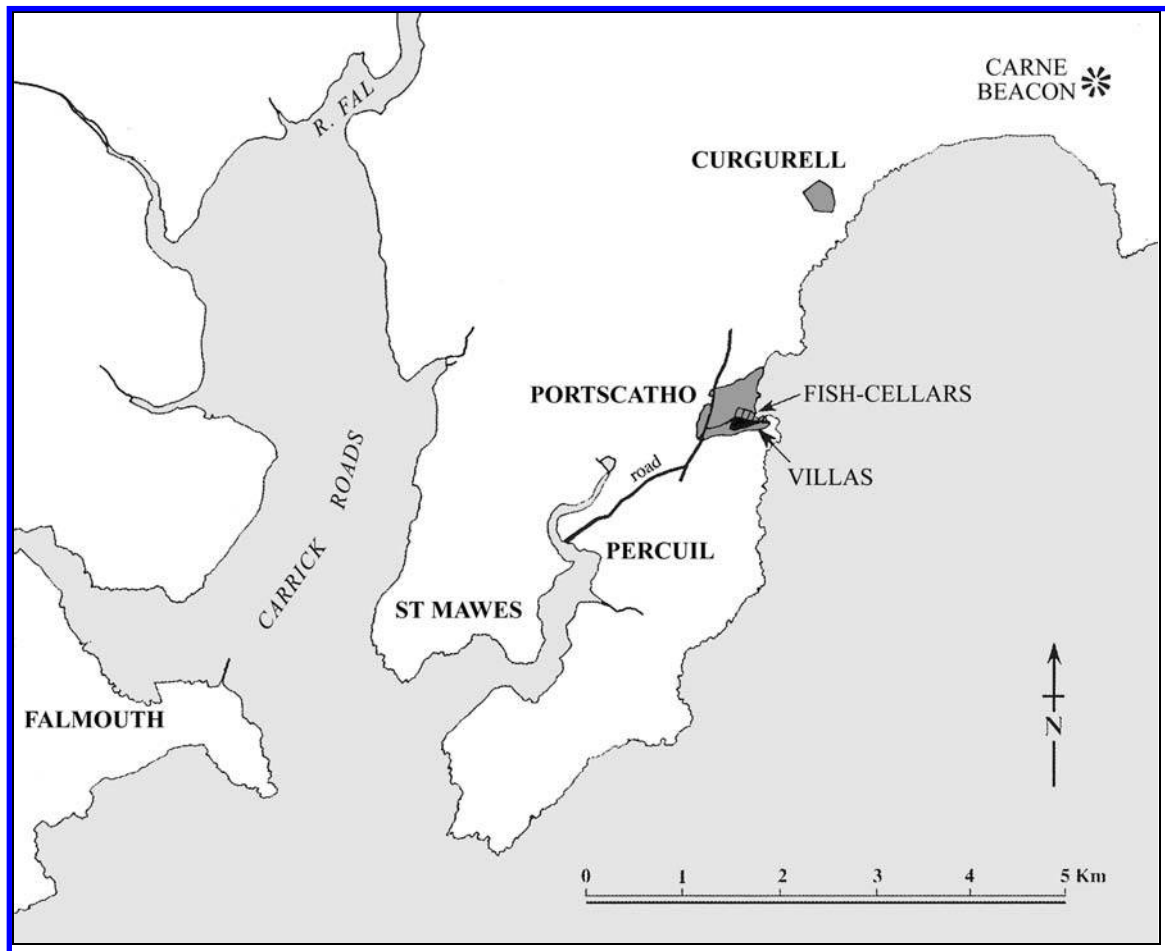
At Dartmouth, as elsewhere, encroachment was associated with a migration seawards of key elements of the settlement. In the built environment, this made formal the changes which were involved in the increased specialisation on shipping about which remark has already been made. However, the map of Dartmouth serves to illustrate a complicating factor in port landscapes, namely **dispersal** of habitation and work. Thus (in the seventeenth century, anyway) merchants and ships' captains lived across the harbour at Kingswear or Churston Ferrers, upstream at Dittisham, or even at Totnes, fifteen km upriver. Similar dispersed habitation was the pattern in other drowned-valley ports such as Plymouth, or estuaries such as Exmouth. In some cases, a substantial seaside settlement could house persons connected with the sea who worked out of a different coast, as at Portscatho (Cornwall). The village is overlooked by a row of handsome nineteenth century villas which were, for the most part, the property of merchant ship captains who, benefiting from the telegraph and the railway, sailed out of Falmouth, Britain's most south-westerly large port.

Figure 4.
Poole Harbour and Studland Bay, Dorset. Ports and other nodal points of maritime activity have a marked tendency to migrate, according to changes of the environment or of economic or political conditions. Wareham, Poole and Hamworthy have occupied the main port role in this area at different periods. The approach from the open sea to Poole Harbour, studded with wreck sites including the sixteenth-century Studland Bay wreck, is an example of the 'closing zone' which often lies outside ports.

Figure 5.
The sheltered, deep-water harbour of Dartmouth (Devon) became a specialised shipping centre in the Middle Ages. Although the narrow entrance is difficult for square-rigged ships, the River Dart provides access to Totnes. Medieval and modern activity was concentrated in the settlement of Dartmouth, which developed on the water's edge during the Middle Ages and successively encroached on the river; many of the port's seamen, however, lived in satellite settlements up-river.



Although they invested in the local pilchard-fishing industry (whose products they often carried abroad in their ships), these seamen travelled overland to Percuil or thence (by ferry) to Falmouth to board their ship. The affluence of their houses is thus not a direct reflection of the economy of Portscatho. It follows that the relationship between settlement topography and economic or social history may, in the maritime context, be complicated, and very likely needs to be analysed afresh at each place. Furthermore, since there is no guaranteed correspondence between form and function at settlements (as at Portscatho), interpretation depends on models which are historically derived. In turn this means that in general landscape studies of rural coastlines the construction of the historic landscape is reliable only from the period of historical information, as Haywood (1997) emphasizes.



The maritime perspective

It is recognised by specialists in landscape archaeology that, in place of formal or topographic analysis, visualisation of ancient landscapes may be the best way to recreate communications and transport activities: ‘visual pictures, and thinking oneself into the functioning of landscapes, is essential if any true understanding is to be achieved’ (Aston 1985, 109). The seaman’s perspective must be a principal target of maritime archaeological reconstruction.

The open sea is, in good weather, safer than the inshore zone: the mariner can move freely in two directions, without constraints of water-depth or obstructions. It is, therefore, to be expected that prehistoric boatmen were ready to follow shoals of fish or rumours of distant land over the horizon, rapidly becoming accustomed to the freedom of open-sea sailing. The sea is not formless or featureless: even in deep water, a ship’s position and direction can be gauged from the sun, the ocean swell, flotsam, sea-birds, clouds on the horizon, etc. In lower latitudes, the clear skies of summer nights provide, in the stars, a two-dimensional map by which to position oneself and steer. How

Figure 6. Map of the Falmouth–Vernan area (Cornwall). There is only an indirect relationship between the main port (Falmouth), ship building (Mylar and Percuil) and the habitation (Portscatho) of some of the skippers who sailed from Falmouth. The bay of Portscatho is overlooked by prominent tumuli and is celebrated in folklore as the setting for a royal funeral.

near the land may be judged from distant clouds, by releasing doves or from the behaviour of a monkey carried on board to keep watch for land.

The greatest hazard for a seafarer, apart from overwhelmingly violent storms, is making landfall unexpectedly, or out of control. Coral reefs or low-lying coasts may take a ship by surprise; for this reason, some of the oldest and tallest seamarks, such as the Pharos of Alexandria, were erected to provide a landfall for ships approaching a low, featureless coast. The south-west gateway to the English Channel is at the 100-fathom (183 m) depth line: here, the colour of the sea changes (Admiralty, 1922, 1–3, etc.). This point has been known since the late Middle Ages (if not earlier) as ‘soundings’, for it is the cue to start sounding – not so much to take the depth, this far out, but to sample the seabed composition; arming the sounding lead with a sticky substance was practised from ancient times. Different bottom materials will be brought up, according to route – the *Pilot (cit.)*, for instance, observes that the occurrence of dark red sand from a bottom at less than fifty fathoms is ‘said to be the special indication of an approach to the Bristol Channel’. The allusion to oral tradition here reminds us that such knowledge did not depend on official survey and publications but was for centuries transmitted by word of mouth; it is, therefore, not surprising to find in the earliest English *Sailing Directions*, of the fifteenth century, precise indications of how to navigate through the rocks and shoals of Finisterre on the basis of the colour and texture of bottom materials (Lester 1994). This shows how there is indeed an underwater landscape of which sailors have knowledge, albeit indirect, and which serves to indicate their position and articulate their voyage.

Fishermen, too, even in early times will have formed a mental map of the seabed. ‘The lore of fishing,’ according to Thompson (1995, 62), ‘was passed down the generations, together with an intimate knowledge of the seabed for miles around. The men were as familiar with the sea bottom as a farmer with his fields. They knew the shallows and deeps, rock and sand, the gullies or “drangs”. The best locations for the various forms of fishing were known by the lining up of conspicuous points ashore, establishing cross transits. Never written down, these marks were jealously guarded and passed from father to son.’ Fishing grounds were by no means always in sight of land, or so directly identifiable: from 1607 to 1610 there was a dispute between fishermen of Rye (Sussex) and French fishermen concerning herring and cod grounds which were traditionally the preserve of the Ryers – ‘The dispute,’ comments Dulley (1969), ‘was complicated by lack of agreement about the location of the Sow and the Black Smooth, the grounds in question, which appear to have been somewhere in mid-Channel’. Rocks, shoals and banks, even when permanently submerged and out of sight of the coast, may be marked by buoys, beacons or withies, planted by the seamen themselves, by their relatives or friends (as recounted by Eglinton 1982 and 1990), or (increasingly from the end of the Middle Ages, of course) by state or communal organisations. However, especially when shoals are so shallow as to dry out at low tide, only a mental map will provide the mariner or his pilot with a safe route – cf. Admiralty (1922, 239), ‘The approach

to this portion of the coast is only possible with local knowledge, and when the state of the tide permits a passage over the numerous shallow banks.'

Out at sea, the early mariner may have gauged his position on some sort of mental or drawn **plan**, related to the night sky or even the sun's daily course. As he approached the land, however, his view would become **serial**, with waypoints ahead and landmarks to either side, as recorded in the pilot books or 'rutters', which act as a kind of manual on how to get there, not as charts to pore over, and which seem to have been developed in the Middle Ages

Maritime Landscapes

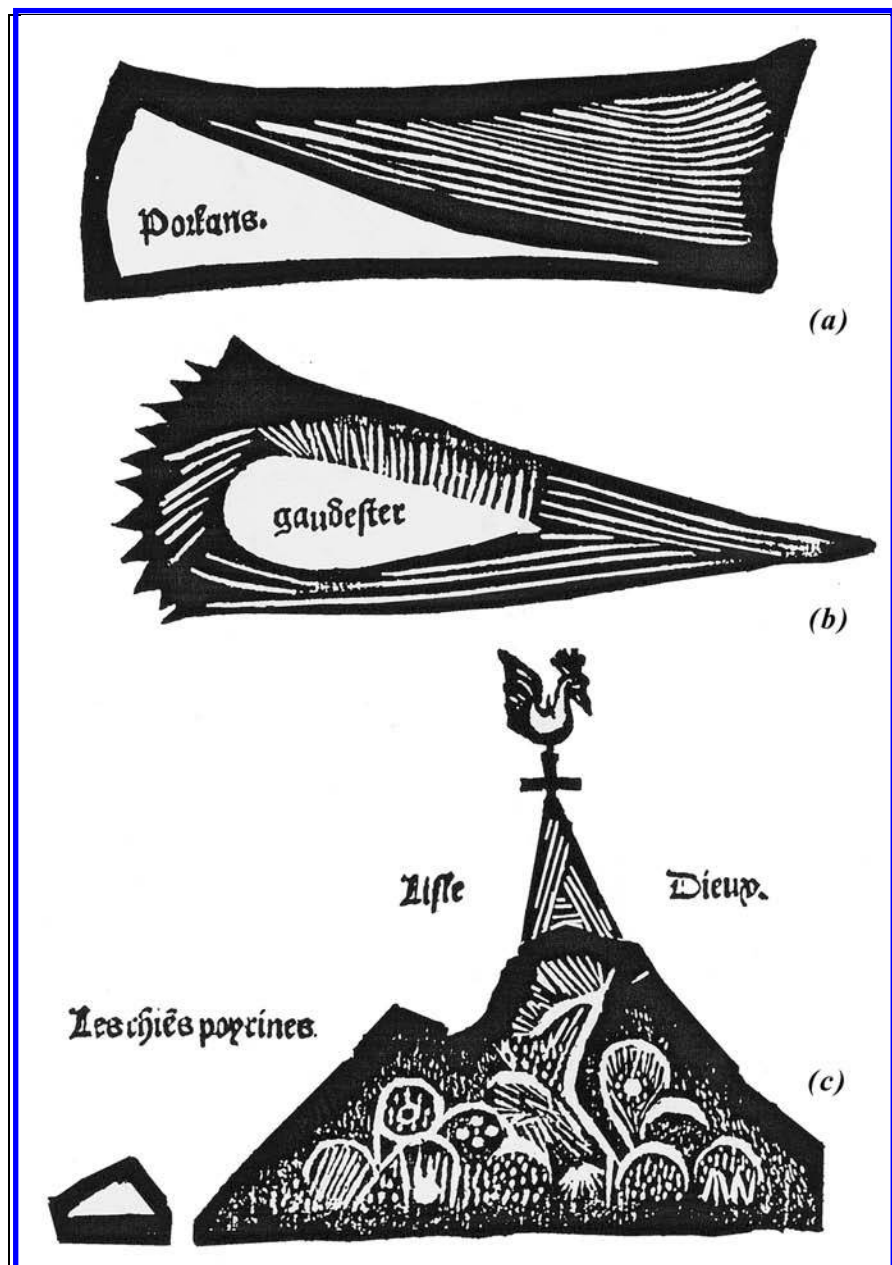


Figure 7. Outlines of landmarks, after Pierre Garcie *Le grant routtier*, first published 1520: (a) Portland Bill (b) Start Point (c) Île d'Yeu, Les Chiens Perrins and Punta du Butte. To this day the Admiralty Pilot Books specifically mention the characteristic wedge shape of Portland Bill and the coxcomb-like appearance of Start Point: the 'prospects' recorded by Garcie show that these characteristic shapes were known by sailors in the fifteenth century, and, no doubt, long before that. On l'Île d'Yeu, Garcie himself gives an indication of distance *off* by advising the seaman to be sure to have the bell-tower of the church in full view, rather than the land round about.

(Waters 1967). In a serial system of guidance, it is natural for some features of the marine landscape to be noted down, not cartographically, but in tabular or formulaic format: although the general pattern of tides for stated ports can be inferred from the state of the moon, and knowledge of the timing and direction of tidal currents is vital for much coastal navigation, it is where cargo ships need clearance, especially over sand bars or rocky sills at the entrance to harbours or docks, that accurate predictions of the tides are necessary, and these are most conveniently noted down in **tables**, also known to have existed at least from the thirteenth century (Dyson 1996). Such tabular summaries of geography can only indirectly be applied to normal topographic cartography. Guided by features of the sea and by knowledge of currents and tides, the mariner approaching land looks out for a landfall; if it is dark, like St Paul's companions (*Acts* xxvii, 29), he prays for daylight. Mountains, especially with their crown of cloud, are excellent landfalls, often venerated with a shrine and seafarers' offerings; in Britain, ancient geographers knew of a *Promontorium Herculis* in the Bristol Channel area, perhaps the steep, rocky Hartland Point (Devon), and distinguished among Romano-British placenames by its classical name, no doubt as it was known to visiting sailors (though 'Hercules' may stand for a native deity). To identify landfalls, mariners, from Medieval times on, if not before, have used **prospects** – sketches of the coastline as seen from the sea (Waters 1967). These give the outline of distinctive landscape features, often natural, but also incorporating buildings as well as unusually-shaped hills and prominent clumps of trees.

To some extent, this maritime landscape is different from the landsman's. The names given to landmarks by sailors may be different – as, for example, 'See Me Not', the seaman's name for Crook's Peak in the western Mendip Hills of Somerset. The landmarks also serve distinctive technical functions for the seaman: not only do pilot books give compass bearings to features as a guide to position, they also offer **clearing lines** or **transits**, alignments of nearer and further points in view, which, when passed, permit a ship to turn in towards port or head off in another direction after passing a hazard. Thus 'Brent Knoll in line with the east side of Steep Holm, bearing 133°, leads south-west of the Mackenzie Shoal' (Admiralty, 1922). Another important use of landmarks is to give a **distance off** from land; mariners need to ensure that prominent buildings are not obscured by high ground on the coast, as off Île d'Yeu in the medieval rutter (Figure 7) or off Margate in North Kent (Marsden 1996, 34).

While there may well have been changes in shoals and navigable channels since antiquity, in general terms one can see that these prospects and natural landmarks could have been in use from earliest times. Even when a building is cited in a transit, it rarely seems that it was purposely erected in a position to serve as a guide to seamen. The church towers of the Somerset coast, for instance, cannot be formed into any such scheme; nor are there sufficient references to burial mounds, or other man-made features, to support the suggestion that these were positioned so as to provide pilotage reference points.

On the other hand, some **coastal landmarks** have certainly been erected to guide ships, especially where a reference point is needed on a coast which is difficult to 'read' from out at sea, or where one landmark has to be distinguished from another (Admiralty, 1922, 529). In medieval Europe, landmark structures were quite frequently chapels or hermitages. Such, for example, are St Michael's Chapel, Rame Head, on the western side of Plymouth Sound (Nenk, Margeson and Hurley 1994, 199), or St Nicholas' Chapel at Ilfracombe, perched on the rocky headland at the harbour entrance (Cherry 1989), which served as watch-houses, and also lit a beacon or light at night, thus being the forerunners of lighthouses. This dedication of headlands and islets to saints in the Middle Ages, and the devotion to them of religious persons, may be an echo of older traditions (cf. on Hartland Point, above).

The progress of a ship towards port might be interrupted by darkness, fog, contrary winds or foul tides; then a suitable **anchorage** or **haven** has to be found. In the Bristol Channel is the classic anchorage of Lundy Island, a vital sheltering-place in westerly gales and a key waypoint on the approach to Bristol (Admiralty, 1922, 30 and 76–81). The island, the rocks and the seagrounds round it are fully described in the *Pilot*, suggesting the long tradition of anchoring there which goes back certainly to the thirteenth century, when the lords of the island, the Marisco family, succeeded in controlling the seaborne trade of Bristol (Oppenheim 1968, 6). Even in good weather, sailing ships may need to await a change of wind in order to round a headland, or, in tidal waters, anchor out in the channel to await the next favourable tide. Thus, the approach to Bristol is punctuated by anchorages at Walton Bay, Hollowbacks or King Road before the final ascent of the Bristol Avon.

The final approach to a port involves a progressive **closure** of the room available for a ship to manoeuvre, especially as not only rocks and sandbanks but also fishing-stakes or moored fishing-nets crowd in on the navigable channel. Tomalin (1998) has written of an 'apron' of wrecks and other debris in the approach to a harbour, for instance, in Studland Bay on the approach to Poole, and has taken this as a token of the increased hazard of approaching the harbour entrance (Figure 4). In fog or darkness, the coast may be unseen till too late: the shouts of seamen or the cries of seabirds reflected from the cliff, the smell of smoke, of farm animals or of mown crops from the land, may have been all that served early mariners for a warning. In good conditions, on the other hand, distinctive natural or built landmarks serve as a guide, and sometimes a **daymark** visible from well off the land serves as a point on which to steer; at Dartmouth (Figure 5) the daymark, a tall column, is said to stand on the site of a medieval chapel.

All the above hazards, of course, when conditions are good, provide the seaman with confirmation of his position and enable his progress towards the destination to be measured. **Customary occurrences**, too, play a part in the scene: fishing-boats tend to be anchored on regular fishing grounds, coasters cross one's course on their regular routes inshore, and boats put out to meet the new arrival. Here the seaman encounters a **transition point**, where pilots

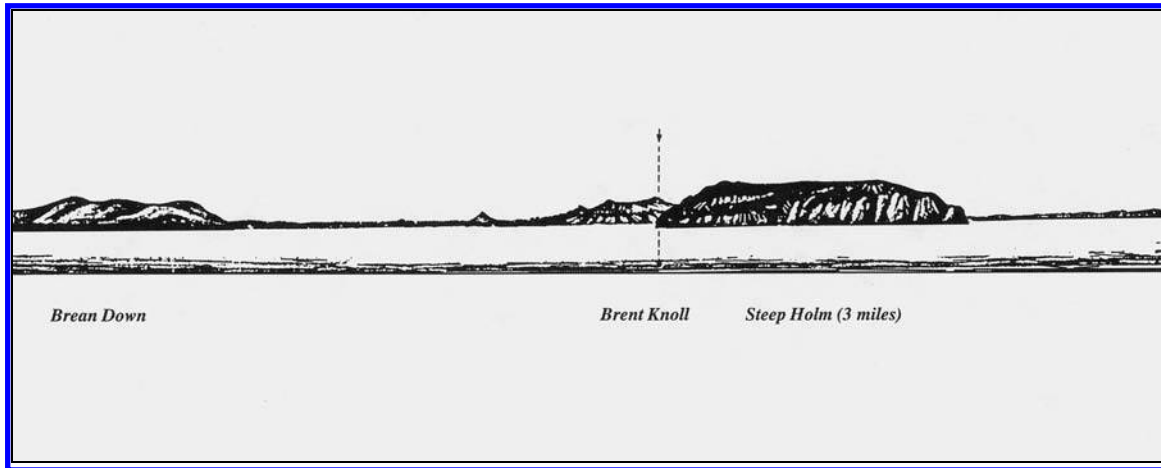


Figure 8.
Clearing line: Brent Knoll and Steep Holm, on the north Somerset coast (after Admiralty, 1922, 122). The transits (lines of sight) between landmarks enable seamen to measure their position and steer round hazards – here, the left-hand (eastern) side of Steep Holm island in line with the summit of Brent Knoll (on the Somerset mainland) leads south-west of the Mackenzie Shoal, a hazard to shipping in the Bristol Channel.

and tugmen ('hobblers') put out from their stations at the mouth of an estuary or river, normally where there is a difficult bar to cross (cf. Figure 2). Such helpers provide local knowledge, essential not only in shoal waters off the coast, but also vital to predict the depth of water on a bar, such as that at the mouth of the Exe, at the particular state of the tide and of river-flow at the time in question. Many channels within the river, such as the Exe from Exmouth to Topsham, change their course between shifting sands, and up-to-date local knowledge is essential there, too, to make a safe passage.

Finally, the arriving ship salutes, pays vows, greets a welcoming shore party, and comes to rest in the close embrace of the port. Her progress may be marked symbolically and ceremonially at a range of places, for the symbolic aspects of the organisation of space or the arrangement of buildings apply equally to waterways as to land-routes (Parker 1999). The control of access by rulers is a feature of the landscape which applies especially to waterborne communications: rulers like to control, not only goods, but also knowledge or even persons coming from distant parts, so the organisation of quaysides and waterfront open spaces may be expected to reflect attitudes to exploration or distant trading ventures. As the case of medieval Bristol shows, however, these arrangements are by no means self-evident and normally require some input from comparative sources for their full explanation.

The cultural landscape

Going to sea is never merely an economic or practical action. In modern industrial societies, the sea air and novel surroundings provide a leisure outlet; in earlier periods, men set out to seek their fortune and experience exotic scenery and customs in distant parts; in simple communities, to join a fishing or trading expedition was a socially integrating activity, a test of a young man's daring and sense of community. There must, therefore, in many communities have been an attitude to the sea, held not just by specialist seamen but in the folklore and customs of the whole community. Modern archaeologists differ

in their view of what this attitude might have been in early periods (as is well discussed by Wooding 1996): some, especially prehistorians, regard the sea as a conceptual barrier, a mysterious and frightening enemy with which primitive resources of technology, organisation or courage could not engage; others, such as Crawford (quoted by Wooding), saw even the sea around the west of Britain as 'grey waters bright with argonauts'. The latter view, namely that seagoing is a natural and normal activity, especially for particular societies, can even be expressed in jargon such as 'maritime consciousness' and invoked as a hypothetical explanation for the development of seaborne contact, for example in the Mediterranean Late Bronze Age. The same is implicit in the suggestion of Westerdahl (1997) that to the prehistoric world view of *agrios* and *domus* should be added the term *mare* – that is to say, one should expect to find symbolic labels on early settlements, structures or artefacts which would reflect a construction of the world divided between home, abroad, and, indeed, at sea. While such concepts of maritime awareness are stimulating and important, for the most part one has to recognise that it is not so much 'maritime consciousness', as the demand of economic or social factors, which induce a seafaring response: it is the search for raw materials, or for additional land, which ultimately provides the impetus for seaborne exploration, and well-documented cases show that technological and spiritual competence responds to meet the need (Richards 1999, 207).

The sea has been widely held to be divine, or the abode of one or more gods, and it features in creation and other myths. Offerings to the sea are made, not only to propitiate its wilder moods, but as a component of a society's ritual activities. Embedded in this, however, may be the control of economic or social forces, and, in particular, the demonstration by individuals or groups of their ability to travel to distant places and bring back goods and knowledge. Such an idea, according to Bradley (1997a), can be seen in some kinds of rock art: before the period of fixed settlement (or, indeed, of specialised trading towns) territory was marked, not only by field-boundaries, town walls or linear earthworks, but by signs – 'notched trees, stone cairns, buoys, etc.' – set down on land or in the sea, to be 'read' by strangers and competitors. For prehistory, such markers are often 'specialised monuments devoted to the dead': burial mounds may thus demarcate or point to routes of transhumance or festal assembly, and in doing so focus the attention of a stranger on the territory which he approaches. The sea is often in view in these contexts – at Tanum (Sweden), for example, fields of rock-engraved boats lie close to cairns which were prominently sited above what was a navigable fjord in the Bronze Age. It may be (as Bradley (1997b) suggests) that the boats do not represent actual craft but allude symbolically to the waters nearby.

In Cornwall, at Carne Beacon (Veryan) a very large tumulus stands prominently, overlooking Gerrans Bay; it is clearly seen on the skyline from Portscatho (cf. Figure 6). The tumulus, whose date is uncertain, is associated in folklore with King Gerrans being rowed across the bay to his funeral. Closer to Portscatho is the hamlet of Curgurell, its name said to derive from Crukelgorhel,

‘ship barrow’; near the shore is a mound, known as Roundhouse, which may be a barrow (Thompson 1994, 41). This is just one example of a conjunction of a port settlement, a fish-rich bay, and funerary markers overlooking the sea. Elsewhere, as for example on the high ground of Uphill (Somerset), now marked by the derelict Uphill Old Church, among the complex earthworks are very probably more than one round barrow: a cemetery here would be a forceful demarcation of the creek of Uphill, at the western end of the Mendip Hills, and the mouth of the Somerset Axe river.

In later periods, the association of burial mounds with the sea is often explicit. On the Isle of Man, for instance, ‘the graves of first-generation Viking settlers . . . were frequently marked by coastal mounds that would have been visible from the sea’; at Balladoole, a ship-shaped stone cairn, containing two burials, was built over an eleven-metre long boat, its outline represented by hundreds of clench nails (Richards 1999, 198). Indeed, as Hunter (1994, 264), remarks, ‘the importance of the sea as a route for transport, and the mystery which the sea itself provides, together serve to create a major cultural symbol. In *Beowulf*, it was not without good reason that the body of Scyld was sent by boat out into the unknown . . . nor that Beowulf’s cenotaph was built in a prominent position that made it visible from far out at sea.’

Conclusion

An appreciation of the maritime aspects of the historic landscape requires archaeologists to adopt a mariner’s perspective, in which the sky, the sea, the seabed, seamarks and landmarks articulate navigation, pilotage and safe arrival in port. The models for reconstructing this perspective can be based on the procedures of working ships and transferring cargoes, on the development of port facilities and settlements, on the recognition of landmarks and the continuity of local practice and traditions, and on an awareness of the place of *mare*, the sea, in the conceptual world of earlier periods and their ritual landscapes. The archaeology of communications may be less tangible and more complicated than the archaeology of agriculture or armed domination, but it does exist and (as Cederlund 1995, 103, has emphasized) should have a central position in the study of the past.

Acknowledgements

Unpublished communications were kindly supplied by C. Westerdahl. The paper was read in draft form by M. Aston, for whose encouragement the author is grateful. Figures 2, 4, 5 and 6 were drawn by Susan Grice.

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