Broad Character: Navigation

Character Type: Navigation Hazard

Regional Perspective: Southern England

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INTRODUCTION: DEFINING/DISTINGUISHING ATTRIBUTES

A substantial proportion of the navigational hazards in the region can be related to the presence of features such as sandbanks, rocks, areas of turbulent water and strong tidal currents (MA Ltd, 2007). The Navigational Hazards Project (Merritt et al, 2007) identified a number of areas within the region that are particularly hazardous. These, together with the large amount of shipping traffic in the region, have resulted in a high number of wreck sites.

The entrances to many of the harbours and ports in the region eg Chichester Harbour Southampton Water (the approach to the Port of Southampton) encompass many navigational hazards and are characterised by navigational aids which aid safe shipping. An elaborate hairpin route is needed by large ships entering or leaving Southampton due to the shoals (Glasspool, 1998). Typical offshore ledges and shoals elsewhere in the region include Bembridge Ledge, Princessa Shoal and Nab Shoal, all west of Bembridge Point on the Isle of Wight.

Navigational aid highlighting hazards within Southampton Water (© Hampshire & Wight Trust for Maritime Archaeology)

HISTORICAL PROCESSES; COMPONENTS, FEATURES AND VARIABILITY

The Navigational Hazards Project (Merritt et al, 2007) identified a number of areas within the region that are or were of a particularly hazardous nature. The south east coast of the Isle of Wight has a partially sheltered rocky shoreline (Merritt et al, 2006) while the area surrounding Bembridge Point is characterised by a partially sheltered rocky foreshore with large rocky ledges extending out from the shoreline. There are several offshore ledges and shoals to the west of Bembridge Point including Bembridge Ledge, Pricessa Shoal and Nab Shoal (Merritt et al, 2006).

The coastline around Selsey Bill in Sussex is characterised by numerous offshore hazards. A band of rocks and banks known as the Grounds and the Owers create a natural barrier around the Looe, offshore from the Bill. The coast is exposed to south westerly prevailing winds increasing the dangers of these offshore features (Merritt et al, 2007).

Areas of shallow water include the eastern approaches to the Solent which tend to be characterised by the presence of fine grained sands and silts in the channel, known to be highly mobile (Merritt et al, 2007). The risk lies in the shallowness of the area, its mobility and the extensive foreshore banks lying on either side of the approaches to several major harbours and ports including Southampton, Portsmouth and Chichester (Merritt, 2007). Between the entrance to Cowes and the entrance to Southampton Water is an extensive area of sandbanks the largest of which is known as Brambles Bank which is known to dry out at low water (Merritt, 2007). Other key banks recorded (of which there are many) include Ryde Middle Bank which lies in the middle of the channel to the south east of Brambles Bank, East Knoll, Horse Sand Mother Bank (Merritt, 2007).

Exposed shingle bank in Southampton Water (© Hampshire & Wight Trust for Maritime Archaeology)

The narrow entrance to Chichester Harbour is dominated by yacht traffic, which navigates carefully to avoid the Chichester Bar a shallow spit which can present a significant hazard at all states of the tide. These waters have been utilised since before the Roman occupation which has resulted in a wealth of recorded shipwreck losses.

The hazardous nature of certain areas of water can also relate to the state of the sea. For example, the shoreline around St Catherine's Point on the Isle of Wight is characterised by eddies, overfalls and races that are recorded in the 18th century

Mackenzie charts (Merritt, 2006). There are eddies running off the end of Hurst Spit during a flood tide and the currents through the entrance to the channel can initially run fast (Merritt, 2006).

St Catherine's lighthouse on St Catherine's Point, Isle of Wight (© T Millership)

The Needles and their surrounding area have been defined (Merritt, 2006) as one of the smaller but more hazardous areas. This area encompasses the Needles, the gravel banks extending out eastwards to the deeper Dolphin Bank from the extremity of the Isle of Wight and the extensive Shingles Bank to the north on the other side of the channel running past Hurst Spit. The Needles have been charted in all of the charts studied during the Navigational Hazards Project from the earliest Waggoner to the most recent 1935 Admiralty chart reviewed for the pilot study (Merritt, 2006). Another prominent navigational hazard in the region is Old Harry Rocks, two chalk sea stacks located at Handfast Point on the Isle of Purbeck in Dorset.

The Needles, Isle of Wight (© T Millership)

The region's maritime trade and transport links with continental Europe are known to have developed from the Bronze Age onwards with the English Channel being a thoroughfare for continental trade. Today, the Southern England coastal and offshore region is one of the world's busiest seaways. This large amount of traffic, together with the hazardous nature of some of the waters in the region has resulted in a high number of wreck sites.

A density analysis of the wreck distribution was undertaken by the South Coast REC project (James et al, 2010) which also shows a high number of sites in the eastern Solent area which contains the approaches to Southampton and Portsmouth, at the entrance to the western Solent, near the Isle of Wight, and in the area around Poole Harbour and (James et al, 2010). These areas were also identified as 'high hazard' areas in the ALSF-funded Navigational Hazard Project (Merritt et al, 2007).

The rocky features along the north eastern tip of the Isle of Wight are well-known to modern sailors, but have claimed a large legacy of shipwrecks in the past. Twenty five wrecks and obstructions have been recorded in the area, five of which occur within the harbour itself.

VALUES AND PERCEPTIONS

Navigation hazards have been a consideration for mariners since prehistoric times and these hazards were only perceived by those who knew about them. However, the state of the tide affected whether or not those hazards were exposed or hidden. These hazards became visible in people's consciousness due to their dangers. Very often, tales and myths will be associated with them.

The creation of nautical and maritime charts generally expressed and recorded the knowledge of the surveyed area at the time but they also represented a tool for recording hazards and other dangers associated with the sea.

Wrecks were fatal for many but also highly dramatic events for those who lived to tell the tale and add to local stories of hazards on the high seas. They are now also perceived as recreational opportunities, with the many wrecks of the region being dived upon by amateur dive groups and professional organisations. Many wrecks are also valued for their addition to habitat diversity in their areas.

An unusual recreational opportunity occurs on the Brambles Bank in the Solent each year. With the exceptional fall of tide that comes with the equinoxes in March and September, the Brambles actually shows above the surface (Glasspool, 1998) and a cricket game between the Royal Southern Yacht Club and the Island Sailing Club is held on it annually.

RESEARCH, AMENITY AND EDUCATION

Thousands of wrecks have been recorded in the region. Wrecks are fragile and non-renewable resources serving as exceptional opportunities to discover our common past as well as important habitats for aquatic life since they act as artificial reefs for entire and unique ecosystems. In this sense, wrecks are also seen as beneficial sites of increased biodiversity by marine ecologists. Further collaborative work between marine biologists and archaeologists would enable a deeper understanding of species living in wreck sites, how they contribute to wreck preservation, and contextualising this information within regional sea dynamics.

Shipwrecks also attract divers, representing unique recreational tools as well as educational ones, allowing a more comprehensive understanding of the different uses and dangers of the sea. Shipwrecks could also be understood as tools linking different

places and people providing unique knowledge about our past. This knowledge could be exploited as educational and recreational tools, bringing a distinctive insight to regional and national history.

The Hampshire and Wight Trust for Maritime Archaeology (HWTMA) (www.hwtma.org.uk), and others, have undertaken investigations of many of the shipwrecks of the region over the past twenty years. They have produced publications, talks and teaching packs which communicate their findings to a wide audience. A recent educational resource developed by the HWTMA is the Maritime Bus which travels across the region, engaging people of all ages with the wrecks and other maritime archaeology remains of the area.

Through the Aggregates Levy Sustainability Fund (ALSF) distributed by English Heritage, Bournemouth University undertook the 'Mapping Navigational Hazards as Areas of Marine Archaeological Potential' project. The project offers a methodology for identifying and mapping areas of maritime archaeological potential by characterising areas exhibiting trends in ship losses due to environmental, structural and meteorological navigational hazards, which have been described in historical sources such as charts and pilotage documents (Merritt et al 2005, 2007). Further research like the Navigational Hazards project could further develop quantitative systems for assessing the archaeological potential for wreckage material in the marine environment.

CONDITION AND FORCES FOR CHANGE

Thousands of vessels have wrecked over the past centuries on the Southern England coastline. Their preservation will depend, amongst other factors, on the construction materials and the natural environment where they wrecked. In general, the best survival of wooden parts of ships occurs with those that were buried in silt or sand soon after sinking. An example of this is the Mary Rose (Portsmouth Historic Dockyard). Steel and iron, depending on their thickness, may retain the ship's structure for decades. As corrosion takes place, sometimes helped by tides and weather, the structure collapses. Today's prevalent marine conditions will also affect the degree of survival especially regarding the movement of sediments or scouring by currents.

Hazards, such as banks, shoals and rocky outcrops amongst others, are subject to natural erosional processes. However, their rate of change and extent may be influenced by human-made activities or constructions that change the marine conditions. The shifting of sandbanks and shoals means the character of the landscape/seascape is in continuous change. These changes often reveal material remains that are being covered and uncovered or embedded within such bedforms. The latter may also be revealed, in advance of exposure, by seismic surveys.

Exposed shingle bank in Southampton Water
(© Hampshire & Wight Trust for Maritime Archaeology)

RARITY AND VULNERABILITY

Navigation hazards, whether natural or human-made represent a resource for characterising the time-depth of regional landscape/seascape. There may be a link between the occurrence of natural obstacles and the presence of wrecked craft, lost gear or accumulated prehistoric or historic deposits. Local environmental conditions will also indicate whether there is potential for preservation of prehistoric or historic materials.

The vulnerability of this Character Type is that sandbanks in shallow areas near coastal settings are known to be extremely mobile and may require frequent repeated survey in the vicinity of ports to ensure the safety of navigation (BGS 2002).

PUBLISHED SOURCES

BGS. 2002. *North Sea Geology: Strategic Environmental Assessment - SEA2 & SEA3 Technical Report 008_Rev1*, BGS on behalf of DTI

Glasspool, J, 1998 Solent Shores. Nautical Books: London

James, J W C, Pearce, B, Coggan, R A, Arnott, S H L, Clark, R, Plim, J F, Pinnion, J, Barrio Frójan, C, Gardiner, J P, Morando, A, Baggaley, P A, Scott, G, Bigourdan,N, 2010 The South Coast Regional Environmental Characterisation. British Geological Survey Open Report OR/09/51

MA Ltd, 2007 SEA8 Technical Report – Marine Archaeological Heritage. Report prepared for DTI

Merritt, O, Parham, D and McElvogue, D, 2006 Enhancing our Understanding of the Marine Historic Environment. Pilot Study Report for English Heritage, Aggregates Levy Sustainability Fund

Merritt O, Parham D, McElvogue D. 2005. *Enhancing our Understanding of the Marine Historic Environment: Navigational Hazards Project Source Appraisal*, Bournemouth University on behalf of English Heritage, Bournemouth

Merritt O, Parham D, McElvogue D. 2007. *Enhancing our Understanding of the Marine Historic Environment: Navigational Hazards Project Final Report*, Bournemouth University on behalf of English Heritage, Bournemouth

WEBSITES

http://www.hwtma.org.uk