

## **Broad Character: Cultural Topography**

### **Character Type: Cultural Topography (intertidal)**

#### **Irish Sea Regional Perspective**

##### **Introduction: Defining/Distinguishing Attributes**

The intertidal zone across England's Irish Sea coastline is extensive and provides many areas such as the Solway Estuary, Dee Estuary, Mersey Estuary and Morecambe Bay important for wildlife watching, particularly of overwintering birds such as Barnacle Geese on the Solway (<http://www.rspb.org.uk/wildlife/birdguide>).



*The foreshore around the Irish Sea coast are dynamic, with constant accretion and erosion. Here at Silverdale, the beach and salt marsh was eroded over exposing a former shingle foreshore and 19<sup>th</sup> century midden*

long been exploited as a rich food source, particularly shellfish, but also for flukes (flounders) and whitebait at high tides (Mitchell 2005, 17-18). Areas of rocky foreshore, known locally as skears, are harvested for mussels, and many are marked on both modern and 19<sup>th</sup> century OS maps in the Walney Channel, Morecambe Bay and off the north coast of the Wirral Peninsula. Traditionally the sands and mudflats are exploited for harvesting cockles and shrimps by hand rather than by boat.

Around the edge of Morecambe Bay, and along much of the Cumbrian coast are areas of sandy foreshore, interspersed with smaller areas of shingle or rocky foreshore. The foreshore, particularly areas of rock and shingle, contains a rich and diverse legacy of prehistoric and historic remains which are vital to enable a deeper understanding of the long-term relationship with the sea and of those maritime influences which have contributed to England as a major mercantile, industrial and imperial nation. These include areas cleared as small landing places, often with rough quays built from the cleared rocks. On a scale too small to be mapped by HSC, the remains of these individual landing places and quays can be seen all around the coastline of the North West, especially in the estuaries of Morecambe Bay, for example at Ulverston and Arnside in Cumbria. Today, these shingle and rocky foreshores are used mainly for leisure, such as fishing, and walking the coastal paths as part of the appreciation of the views out to sea.

Fishing is one of the key attributes of the intertidal areas, and they have

Morecambe Bay has long been a key route between the main part of Lancashire and the Cartmel and Furness Peninsulas, known as Lancashire-over-Sands, and this only changed with the advent of the railways and modern roads. Today, only the section from modern Lancashire to the Cartmel Peninsula in Cumbria is still used regularly, mainly for charity walks.

### **Historical Processes; Components, Features And Variability**

Along the west Lancashire coast and on the north Wirral coast, evidence for submerged prehistoric forests have been recorded, including some of late Mesolithic date (Griffiths *et al* 2007). At Formby Point, near to known submerged forests of unknown prehistoric date, coastal erosion has exposed a series of human footprints (adult and child), animals (aurochs, cattle, red deer, roe deer, unshod horse, dog/wolf, wild boar, sheep/goat) and wading birds (crane, oystercatcher and rail) preserved in silts and muds. Most of the footprints are in the intertidal zone, are late-Mesolithic (Gonzalez *et al* 1996; [http://www.seftoncoast.org.uk/hist\\_footprints.html](http://www.seftoncoast.org.uk/hist_footprints.html)), and represent activity along a near-shore intertidal environment. In Cumbria, around the Esk Estuary at Ravenglass, is further evidence of human activity in an inter-tidal area, the exact location and extent of which is not recorded, but which is probably of early Mesolithic date. Extensive surveys undertaken nearby have demonstrated that this area was extensively cleared and exploited in the Mesolithic (Hodgkinson *et al* 2000, 61-2). Associated raised beaches are a physical indicator of environmental changes resulting from a general rise in sea-level, as the ice cap melted, an increase in rainfall and natural successions of woodland vegetation (Hodgson and Brennan 2006, 25). In the earliest phase of the Mesolithic, by *c.* 7250 BC, the coastline of north-west England lay at *c.* 20 m OD below the current level (Tooley 1974, 33). This produced a coastline drawn roughly along a line from just west of Anglesey to west of Walney Island in Morecambe Bay, forming a belt of now submerged land, about 10-15 km wide (Tooley 1985, Fig. 6.1). This gradually diminished up to *c.* 5200 BC, when it lay at 2 m OD lower, by which time Britain had become an island (Tooley 1974; 1978; 1985). In the same area as the submerged forest at Meols on the Wirral are numerous exotic finds dating over a wide period from the first millennium BC (Griffiths *et al* 2007). The site is thought to have been an *emporium*, or beach trading site, with organised exchange between local elites and foreign traders.

Outside the main ports of Cheshire, Liverpool, Lancaster and Carlisle from the medieval period and up to the 19<sup>th</sup> century, port facilities along England's Irish Sea coast were located at minor creeks and quays. There were numerous individual wharves and quays, many of which were dispersed. Most survive as stone alignments on rocky foreshores or as preserved timbers within areas of sands, mudflats and shingle foreshore. The dynamic nature of the shifting sediments means that there is the potential for many, as yet unrecognised, port facilities.

Most of the former fishing features recorded along this Irish Sea coast are probably of post medieval date, but the recorded example at Cowp Scar, at the mouth of the Leven Estuary, Morecambe Bay, has been dated to the medieval period. This comprised a complex series of fish traps, ponds and sluices built of stone and timber, covering an area of approximately 275m by 350m. Some of the traps date to the 14<sup>th</sup> century, but the complex is thought to have continued in use into the post medieval period (Newman 2006, 116-117). The Cowp Scar traps were exposed by shifting sands, allowing them to be surveyed and recorded, but the continual movement of sediments has now covered them up again.

The extensive sandflats along this coast are associated with many shipwrecks, although the exact location of many of the wrecks is not known. Likewise, many carts, pack animals and

individual travellers were lost making the difficult crossing of Morecambe Bay crossing. Even in modern times, the sands of the Bay remain treacherous, and individuals are occasionally trapped by high tides or by quicksand and lost, the most notorious recent example being the Chinese cockle pickers, where 21 people died ([http://en.wikipedia.org/wiki/2004\\_morecambe\\_bay\\_cockling\\_disaster](http://en.wikipedia.org/wiki/2004_morecambe_bay_cockling_disaster)).

### **Values And Perceptions**

The fringes of the extensive sands fronting the Irish Sea are valued as places for recreational activities such as bird watching, sporting activities, leisure fishing, sunbathing and sea-bathing. The wider areas of sandflats and mudflats have long been widely exploited by fishermen, particularly for shellfish collection, and this plays an important part in the cultural heritage and traditions of local fishing communities (Mitchell 2005).



*The extensive sand and mud flats of Morecambe on an historic chart. The upper part of the Bay was not mapped because the nature of the constantly shifting sediments (sourced from the UK Hydrographic Office ([www.ukho.gov.uk](http://www.ukho.gov.uk)))*

Conversely, sandflats and mudflats have long been perceived as severe hazards to coastal and estuarine shipping from their mobility and the resulting difficulties in maintaining accurate charts. The north end of Morecambe Bay and the Solway Firth, for example, are either not surveyed on historical Admiralty charts because of the unreliability of the shifting sediments, or are shown in sketchy detail with warnings about the nature of the shifting sands. Equally, their notoriety to ship's pilots is be matched by dangers of stranding and quicksands for walkers, particularly in Morecambe Bay, but also elsewhere along the region's coast.

Intertidal studies have often been encouraged from a maritime archaeological point of view due to the richness they represent from a historic environment perspective (see Fulford *et al* 1997). Perspectives that integrate ‘land’ and ‘maritime’ understandings can shed new light about past human activities within this Character Type.

### **Research, Amenity And Education**

Some survey and recording of well-preserved archaeological sites has been undertaken around the coastal fringes of the extensive inter-tidal sands, muds and rocky foreshores of north-west England. In particular, work has been undertaken on the exposed fish traps complex at Cowp Scar (Newman 2006, 116-117). Apart from work at Ravenglass, Cumbria, and Formby Point, Merseyside, there has been little, modern excavation. The recent publication on the vast range of artefacts and submerged forest at Meols, Merseyside, was undertaken on material recovered by local amateur archaeologists from the late 19<sup>th</sup> century (Griffiths *et al* 2006). The large number of wrecks recorded from the English sector of the Irish Sea, including a large number of World War Two aircraft, is unexplored, and in many cases the location of individual wrecks is known only vaguely or not at all. The same can be said for the many individuals, carts and animals that have been lost in the sands of Morecambe Bay over several hundred years. Recent desk-based survey work includes the Rapid Coastal Zone Assessment (Johnson 2009) and western portions of the National Mapping Programme for Hadrian’s Wall World Heritage Site (NMR Event 1360986), which have mapped the extent of archaeological features recorded on the Historic Environment Records, as well as new archaeological features from aerial photographs along the Irish Sea coastline.

### **Condition And Forces For Change**

The sediments around the North West coast are extremely dynamic and are constantly shifting. Climate change and rising sea level will potentially change this pattern, and extreme weather events, such as the 2009 Cumbrian floods, can potentially deposit large amounts of sediments to the existing sandflats and mudflats. Within river estuaries, the fluidity of the sediments also affects the course of rivers, leading to the constant erosion and accretion of salt marshes, sandflats and mudflats. In Silverdale, on the Cumbria/Lancashire border, for example, recent shifts in the course of the River Kent has led to the rapid erosion of salt marsh and the exposure of a vast Victorian midden, now completely washed away.

Policy changes to flood prevention and coastal erosion are also a major potential force for change to the inter-tidal sands, muds and saltmarshes. For example, in the Lyth Valley, Cumbria, improved and drained land may be left to revert to wetland, with the withdrawal of support for drainage pumps by the Environment Agency, changing the flow of sediments into Morecambe Bay. Elsewhere, a policy of managed realignment means that sea defences will not be maintained or replaced, potentially leading to coastal erosion.

### **Rarity And Vulnerability**

This Character Type has large areas in the Solway Estuary, Morecambe Bay, Ribble Estuary, Liverpool Bay and the Dee and Mersey Estuaries which come under Natura 2000 sites. These include designations as Sites of Specific Scientific Interest (SSSIs), Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar Sites, and include National Nature Reserves. Although these designated areas comprise a large proportion of England’s Irish Sea inter-tidal zone, they are internationally rare and of importance for their natural habitats and wildlife. The inter-tidal sands and mudflats are also of cultural importance, particularly in Morecambe Bay, for the traditions of shellfish collection, particularly the harvesting of cockles and mussels. Cockle picking, particularly, has changed to a permit

scheme following an unprecedented rise in numbers of cockle fishermen in recent years (<http://www.nwnwsfc.org>).

Ecosystems of this Character Type are vulnerable to human activities such as recreational disturbance, commercial exploitation of shellfish and worms, and oil and industrial pollution. This Character Type can be impacted by events far upstream, including materials such as pollutants and sediments. Contaminants can be introduced which do not disintegrate rapidly in the marine environment, such as plastics, pesticides, furans, dioxins, and heavy metals. The inter-tidal area is vulnerable to climate change, which could affect the dynamics of the shifting sandflats and mudflats.

### **Published Sources**

- Fulford M., Champion T. and Long A (eds.) 1997. *England's Coastal Heritage: A Survey for English Heritage and the RCHME*. RCHME/EH Archaeological Report 15. London: EH/RCHME
- Gonzalez S. and Cowell R. 2007. *Neolithic Coastal Archaeology and Environment around Liverpool Bay*. In J. Sidell, F. Haughley (eds.) *Neolithic Archaeology in the Intertidal Zone*. Oxford: Oxbow Books
- Griffiths D., Philpott R.A. and Egan G. 2006. *Meols: the archaeology of the North Wirral coast: discoveries and observations in the 19th and 20th centuries, with a catalogue of collections*. Oxford: Oxford University School of Archaeology
- Hodgkinson D., Huckerby E., Middleton R.H. and Wells C.E. 2000. *The Lowland Wetlands of Cumbria*. North West Wetlands Survey, Lancaster Imprints **8**. Lancaster: Lancaster University Archaeological Unit
- Hodgson J. and Brennan M. 2006. The prehistoric period. In M. Brennan (ed.) *The Archaeology of North West England. An Archaeological Research Framework for North West England. Volume 1 Resource Assessment*. ALGAO and CBA North West, Archaeology North West, **8**, pp. 23-58
- Johnson B. 2009. North West Rapid Coastal Zone Assessment (NWRCA). Archaeological Research Services Ltd. report no. 2009/53 for English Heritage
- Mitchell W.R. 2005. *Around Morecambe Bay*. Chichester: Phillimore
- Newman C. 2006. The medieval period. In M. Brennan (ed.) *The Archaeology of North West England. An Archaeological Research Framework for North West England. Volume 1 Resource Assessment*. ALGAO and CBA North West, Archaeology North West, **8**, pp. 115-144
- Tooley M.J. 1974. Sea-level changes during the last 9000 years in North-West England, *Geographical Journal*, **140**, pp. 18-42
- Tooley M.J. 1985. Sea-level changes and coastal morphology in north-west England. In R.H. Johnson (ed.), *The Geomorphology of North-West England*, 94-121. Manchester: Manchester University Press

### **Websites**

- <http://www.birdlife.org/datazone>. Retrieved February 2011
- <http://www.jncc.gov.uk/>. Retrieved February 2011
- [www.magic.defra.gov.uk](http://www.magic.defra.gov.uk). Retrieved February 2011
- <http://www.nwnwsfc.org>. Retrieved February 2011

<http://www.rspb.org.uk/wildlife/birdguide>. Retrieved February 2011

[http://www.seftoncoast.org.uk/hist\\_footprints.html](http://www.seftoncoast.org.uk/hist_footprints.html). Retrieved February 2011

[http://en.wikipedia.org/wiki/2004\\_Morecambe\\_Bay\\_cockling\\_disaster](http://en.wikipedia.org/wiki/2004_Morecambe_Bay_cockling_disaster). Retrieved February 2011