

PRELIMINARY ARCHAEOLOGICAL ASSESSMENT IN BRIDGWATER BAY: GORE SAND AND STERT FLATS

by Richard McDonnell

Introduction

Recent changes to the course of the River Parrett in the intertidal zone of Bridgwater Bay have drawn attention to the archaeological significance of this area and to the potential danger of unrecorded evidence and material being destroyed by erosion. This paper describes the area and briefly reports on the results of a limited period of casual field assessment, during June and July 1993, and a brief reconnaissance of the cartographic and aerial photographic evidence. It also includes an inventory of archaeological and palaeoenvironmental sites and outlines the archaeological potential of the area.

In recognition of that potential the Royal Commission on Historical Monuments (England) has commissioned the writer to undertake a level one rapid identification survey of the Gore Sand, Stert Flats area over the winter of 1993-94. The level of recording and the methodologies to be employed follow the draft recommendations for data standards put forward by Milne and Goodburn (1993). It is hoped to take advantage of the scouring effect of the equinoctial and winter storms on the deposits of mud that mask the surface of large areas of the bay. Further investigations of the cartographic evidence will be undertaken over the same period.

Survey Area

The field assessment undertaken during the summer of 1993 was limited to the area to the west of Stert Island. The area for which the cartographic and aerial photographic evidence was assessed is larger and includes Gore Sand and Stert Flats. This represents

the area of the proposed Royal Commission rapid identification survey and extends for some 36 square kilometres. Its western limit is Hinkley Point while its northern limit is marked by the wreck of the *Nornen* on the southern end of Berrow Flats (Figure 12).

Bridgwater Bay

Bridgwater Bay is located at the eastern end of the Bristol Channel and immediately downstream of the Lower Severn Estuary (Figure 1). It is formed by the north-facing coast between Hinkley Point and the Parrett Estuary and the west-facing coast between that estuary and Brean Down. The Bay is directly exposed to the westerly gales and seas from the Bristol Channel and beyond that, the Irish Sea. The Somerset Levels lie immediately to the east and are fronted by the Bay. With the exception of the River Axe to the north, all of the major rivers and arterial drains on the levels and Moors feed into the River Parrett; it is the largest and only tidal river on the Levels.

Within the Bay there are approximately 50 square kilometres of charted ground exposed by the Lowest Astronomical Tide (LAT) between Chart Datum (CD) and Mean High Water Springs (MHWS). This area forms a roughly rectangular shape, oriented approximately north south, which is divided into three, named areas. These are, from north to south, Berrow Flats, Gore Sand and Stert Flats, the last two areas being divided by the intertidal channel of the River Parrett. Where the Parrett issues from its landlocked course into the intertidal area there are two named islands. Fenning Island is no longer a true island but is now joined to, and part of, Stert Point. Stert

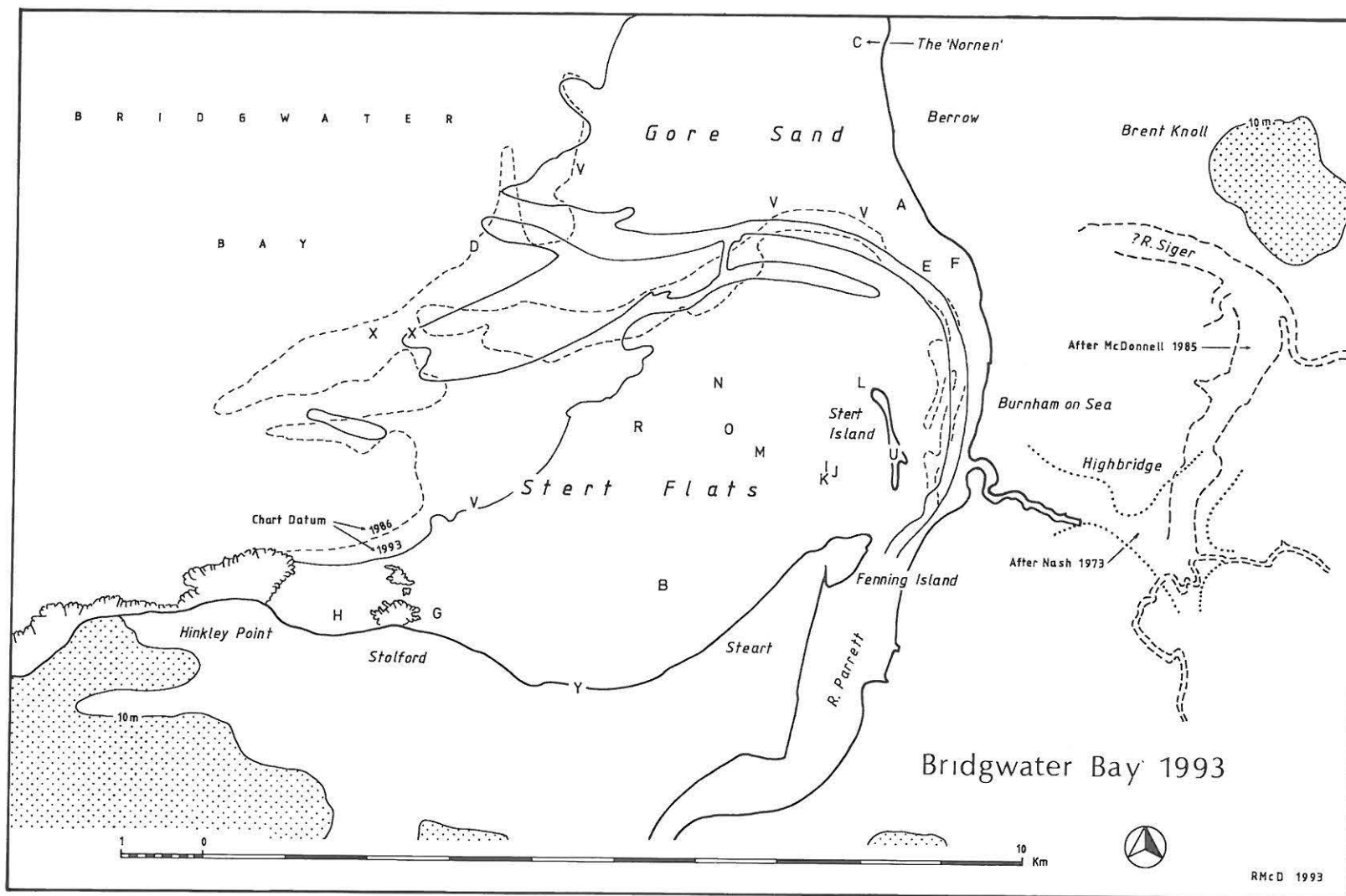


Figure 12. Plan showing the suggested deep water inlet at Highbridge, the abandoned course of the River 'Siger' and the location of intertidal archaeological and palaeoenvironmental sites.

Island lies 600m to the north east of Fenning and comprises an area of vegetated dune sand and shingle of which the two highest parts are above HWS. There is a deep channel between Fenning and Stert islands.

The nature of the exposed surface in the Bay includes rock, firm clays, sand and shingle. There are also seasonally mobile deposits of soft mud. Limited areas of surface exposures of peat are recorded and at Stolford there is the remains of a submerged forest.

On Berrow Flats the topography is characterised by a gently westward shelving area of sand and mud but in the two southern areas, of Gore Sand and Stert Flats, the ground is cut by deep channels associated with the intertidal courses of the Parrett and by the channel between Stert and Fenning islands. Some of these channels are up to 9m deep from their immediate edges. There are also substantial shingle ridges to the west of Stert Island.

Since at least 1832 the intertidal loop of the River Parrett has gradually moved northwards (Farr 1954) but the most recent and more rapid changes suggest that the mouth, at chart datum in the area of Bridgwater Bar, is now broadening southwards and silting up. A second, northern channel is developing and deepening. These changes to the intertidal channel have been sufficient to cause pilotage problems for shipping using Dunball Wharf and, as a consequence, the area is currently being re-surveyed by the Harbour Master at Bridgwater. This survey to date has comprised a limited hydrographic survey, the use of oblique aerial photographs (taken 1990) and walking the area (Captain P. Lee pers. comm.). The Hydrographic Department of the Admiralty have recently published an updated survey which shows the new northern channel (Chart 1152 September 1993).

Stert Flats is designated as a National Nature Reserve (NNR) and Gore Sand and Berrow Flats are

included in the Bridgwater Bay Site of Special Scientific Interest (SSSI).

The Somerset Coast was identified by the Royal Commission on Historical Monuments (England) (1992, 25) in their Archaeological Field Survey Programme 1992/93-1996/97 as an area requiring rapid identification and recording of monuments.

History of Research

While the main body of the Bay has received no detailed attention from archaeologists, important work has been undertaken at the extreme northern end, at Brean Down (Bell 1990) and at the western end, at Stolford. At this last site research on sea level changes and a palynological and dendrochronological study of submerged forest remains has been undertaken over a number of years (Kidson and Heyworth 1973; Heyworth and Kidson 1982; Heyworth 1985). The intertidal deposits of Bridgwater Bay were also included in this programme of work (Kidson and Heyworth 1976). The aerial photographic evidence has been recorded up to 1985 (McDonnell 1985) and the area was included in a summary account of the known archaeological and palaeo-environmental sites on the English side of the Severn Estuary and Bristol Channel (McDonnell and Straker 1989). A recent survey undertaken by the Energy Technology Support Unit includes a review of the historical, coastal changes to Bridgwater Bay (Energy Technology Support Unit 1993).

The deposits of peat and alluvium exposed in Bridgwater Bay are likely to be a westward extension of the geomorphological sequence recorded in the Somerset Levels and Moors. Over the past 25 years considerable work has been undertaken on the prehistoric exploitation of the peat moors (Coles and Coles 1986) and on the later prehistoric and early historic exploitation and settlement of the

alluvial levels and moors (Miles and Miles 1969; Leech 1977, 1981, 1982; Leech *et al.* 1983; McDonnell 1979, 1985, 1986, 1991).

The Evidence

The existing record of intertidal archaeological sites in the area of Stert Flats and Gore Sand is derived from the Somerset Sites and Monuments Record (SMR). In the following list the upper case letters refer to the sites' location on Figure 12.

SMR No.	
A 10259	Described as an 'old land surface' on Gore Sand, suggested as 'medieval'.
B 11131	The remains of a ship, possibly a World War II target vessel on Stert Flats.
C 11148	The wreck of the 'Nornen' (nineteenth century) at the north end of Gore Sand.
D 12001	The wreck of the 'Border Dene' on the Gore.
E 12002	A line of stakes, probably a fish trap on Gore Sand.
F 12003	The nine legged, lower lighthouse (nineteenth century).
G 34078	Mesolithic flint from Stolford.
H 35204	Deposits of peat and areas of submerged forest remains at Stolford.

The limited archaeological field assessment undertaken to the west of Stert Island, during June and July 1993, located several sites of archaeological and palaeoenvironmental potential and discussions with local fishermen have revealed evidence of other potential archaeological sites within the Bay. The field assessment has noted previously unrecorded deposits of peat, animal bone, an unexploded aerial mine, ditches, wooden structures and a causeway linking Stert and Fenning islands. All of the wooden structures are provisionally identified as the

remains of fish weirs. Local fishermen have also reported the wreck of a large wooden boat and the wreckage of several aircraft.

New sites recorded as part of the initial field assessment of the area and a preliminary assessment of the aerial photographic and cartographic evidence include:

- I The remains of a stone and concrete causeway between Fenning Island and Stert Island (field assessment, aerial photographic evidence).
 - J Deposit of peat in the channel between Fenning Island and Stert Island (field assessment).
 - K Deposits of animal bone associated with deposits of peat (J) (field assessment).
 - L Ditches or trenches located off the north west end of Stert Island (field assessment).
 - M A wood and stone fish weir on Stert Flats (field assessment).
 - N Miscellaneous wooden structures on Stert Flats (field assessment).
 - O An unexploded aerial mine on Stert Flats (field assessment).
 - P* The report of a crashed Lancaster Bomber on Stert Flats (local knowledge).
 - Q A B17 Bomber on Gore Sand, currently being excavated by enthusiasts (local knowledge).
 - R The reported wreckage of a crashed Dornier on Stert Flats (local knowledge).
 - S* The report of a large wooden vessel on Stert Flats (local knowledge).
 - T* The report of a very large anchor fluke on Stert Flats (local knowledge).
 - U The site of an enclosure and four buildings on Stert Island (cartographic evidence).
 - V Fish weirs (cartographic evidence).
 - X Nineteenth century buoyage system (cartographic evidence).
 - Y Sea wall between Stolford and Stert called the Country Sea Wall in 1723 (cartographic evidence).
- * Indicates position approximate.

Other unlocated sites of Second World War aircraft include a Whitley bomber on Stert Flats, a Mustang on the foreshore at Stolford and a Heinkel He 111P in Bridgwater Bay (Hawkins 1988). Some of these aircraft may have been salvaged or fallen outside the intertidal area. It is also possible that some of the sites recorded above from local knowledge may represent some or all of these aircraft. During World War II Stert Flats were used as a bombing range.

A preliminary reconnaissance of the cartographic evidence, both land-based and nautical surveys, indicates a rich source of information regarding the evolutions of previous intertidal channels of the Parrett, islands no longer extant, drying grounds since moved or eroded and place names no longer in use or transferred to other features or areas. In the mouth of the Parrett there were three islands that are now either no longer present or are joined to the mainland and whose names have disappeared from later maps. Two of these, Dunball Island and Slab Island, were recorded in 1723 while Stag Island, of dubious island status, was recorded as late as 1946. Stert Island, with a building annotated 'The Warren House' in 1723 and at that time part of the Stert peninsula, was probably severed from the mainland and became an island at the beginning of the nineteenth century. The Ordnance Survey of 1885 shows four buildings on the island and a rectangular enclosure with part of one side defined by a rhyne. Fenning Island is also recorded at the beginning of the nineteenth century but by 1904 had become part of the mainland. Some intertidal features bear Old English names such as Chisel Patch, Slab Batch, Fenning Island and the Gore (Ekwall 1960).

Conclusion

The results of this limited assessment of Bridgwater Bay suggest that the area is

likely to be rich in archaeological and palaeoenvironmental evidence. The proximity of the Somerset Levels, and the body of published work relating to the cultural development and exploitation of that area, adds to the significance of the archaeological potential of Bridgwater Bay. Even at this early stage, however, some limitations have been identified.

The potential for exposures of prehistoric cultural material and associated geomorphological stratigraphy within the intertidal area of Bridgwater Bay will depend upon the scope of the movement of the intertidal course of the Parrett. An oscillating, tidal channel in the order of 9m deep will scour out and destroy both organic, cultural material and evidence of its palaeoenvironmental context. There are likely to be substantial areas, both intertidal and on the alluvial deposits of the levels, that have been swept 'clean' by the action of large tidal channels. At the same time, however, such a channel, where it is now cutting through a new area, will expose a correspondingly deep stratigraphic profile. Further detailed examination of the cartographic evidence and firmer dating of transitory features such as islands, drying grounds, channels and gutterways will help define those areas likely to have been disturbed by channel migration in the past.

Although the cartographic record, principally nautical charts, provides evidence of channel movements for the post-medieval period, other methodologies will need to be investigated to provide evidence from earlier periods. Techniques used in landscape surveys have already proved useful in this respect. The similarity in size and shape of the loop of a large, abandoned river on the Levels to the south of Brent Knoll and the loop of the River Parrett in the present intertidal zone has been noted (McDonnell 1985). This similarity suggests that either an intertidal channel of the Parrett, or a landlocked

stretch of the river itself may once have lain four kilometres to the east of its present position. This feature can be traced on the ground during periods of heavy rainfall (Williams 1970, Plate 11b), on aerial photographs, in the pattern of field shapes, the disposition of parish boundaries and the deposits of coastal dune sand. There is compelling evidence from a Saxon Charter, dated 663, but possibly of 693, that this river was called the Siger (Leech 1981). It is not clear at this stage whether or not this was a Saxon name for the Parrett or whether it is another river altogether. Evidence has also been put forward for a deep water inlet at Highbridge during the Romano-British period (Nash 1973) though this is considered unlikely (Leech 1981). It is possible, however, that this feature may be a southern section of the now abandoned river discussed above.

Pilotage problems caused by the movement of the intertidal channel of the Parrett are not new. In 1832 two lighthouses were built to mark the channel on the recommendation of Lieutenant Henry Mangles Denham who had just completed an hydrographic survey of the area. The lower light, a nine legged, timber structure was sited on the foreshore while a taller, masonry tower was built 500m inland. They were intended to operate as leading lights but by 1844 the channel had already moved far enough for Trinity House to announce the suspension of the transit as an aid to navigation (Farr 1954).

Fieldwork in Bridgwater Bay poses more practical problems than most intertidal work in the Severn Estuary/Bristol Channel. In order to safely reach and return from many parts of the area it is necessary to use a suitably seaworthy boat. The combination of the encircling, intertidal channel of the Parrett and the channel between Fenning and Stert islands allows a flooding tide to flow from east to west on the central, eastern part of the Stert Flats, i.e. from the landward side where one would least expect it. Even before it is possible to really get to grips with the archaeology of the area it will be necessary to become familiar with the detailed topography and the tidal behaviour of the low water Bay.

Author's address:
Dungeon Cottage
Cocklake
Wedmore
Somerset
BS28 4HB