

## CHAPTER 10

### Recommendations for further work and proposed research agenda

#### 10.1 Introduction

Chapters 6 to 9 have offered an initial, baseline, assessment of the heritage assets of the NE coast and the threat to which they are exposed by coastal erosion. If that threat is to be addressed this initial assessment must be used as the basis for the formulation of policies for mitigation and record. In this chapter a few broad principles are advocated by which this work may be taken further. The following paragraphs begin with noting two issues that need to be addressed as a preliminary to further work and then proceed to a consideration of a number of broad topics where more research is needed on categories of asset which seem to be particularly under threat. The identification of these topics is seen as contributing to the development of a research agenda for implementation within the context of the Phase 2 of the NERCZA. Where appropriate, these themes are cross referenced to the priorities and recommendations itemised in *Shared Visions: The North-East Regional Research Framework for the Historic Environment* (NERRF) (Petts and Gerrard nd). Chapter 21 of that volume deals specifically with 'Maritime and coastal archaeology' and makes a number of recommendations for further research. The present chapter concludes with comments on specific sites under immediate or imminent threat.

#### 10.2 SMP2

The NERCZA study north of the mouth of the Tyne has had to be undertaken with reference to the SMP1 produced in 1997. This is significantly more limited than the SMP2 document produced for the coast south of the Tyne and, in particular, does not offer details of rates of erosion and predicted coastlines. Work on SMP2 for the coast north of the Tyne is underway at the time of writing and is due for completion in the near future. In order to make the NERCZA north of the Tyne comparable to that to the south it is important that the assessment is reviewed in the light of the SMP2 criteria when they become available. The SMP2, being currently undertaken by Royal Haskoning, is expected to be available sometime during 2009.

#### 10.3 Designation

Of the historic assets described in the previous chapters forty-two, by their status as Scheduled Ancient Monuments, are deemed to be of national importance. This is less than 2% of the sites identified in the HERs, not counting the 968 new sites that have been added by the APTE (Chapter 2). The national average for scheduled sites in relation to the record as a whole is 3.14% and there is clearly a considerable discrepancy in the coastal zone. The situation with Listed Buildings is less clear-cut in that the NERCZA brief stipulated that only those buildings specifically associated with coastal and maritime activities should be taken into account. Indeed, while most, but not all, lighthouses are listed, the statutory designation of lifeboat stations and facilities associated with the volunteer life brigades is more patchy.

Only major seamarks, deemed to be of architectural interest, have been afforded listed status.

The significance of an historic asset will clearly have a bearing on the lengths to which it is appropriate to go to mitigate the effects of sea level rise and coastal erosion. Scheduled Ancient Monuments and Listed Historic Buildings have vested in them a level of interest above that enjoyed by the majority of HER entries. Indeed, as noted above, Scheduled Ancient Monuments are deemed to be of national importance. Given the discrepancy in the proportion of coastal sites on the Schedule and the patchy nature of the List of Historic Buildings in respect of specifically coastal and maritime structures, a review of the NERCZA data base for this purpose is regarded as a matter of priority. It is envisaged that such a review will identify those assets that could be put forward for consideration for statutory designation. The documentation required for the submission of proposals to English Heritage's Heritage Protection Department is considerable and in most cases requires a field visit. This is beyond the scope of the NERCZA desk-based study.

## **10.4 Research Agenda Themes for informing NERCZA Phase 2**

Both the nature of the coastline and the extent of development have a bearing on the survival of assets and the degree to which they are under threat. The cliffs of County Durham, Tyne and Wear and North Yorkshire, while subject to landslips are relatively resistant to sea level rise whereas the lowlying areas around Teesmouth and Hartlepool Bay are particularly vulnerable to even small rises, which is also the case along most of the Northumberland coast. The coast between Saltburn and Tynemouth is heavily developed and the threat to assets in this zone is likely to come as much from mitigation strategies as from sea level rise.

During the course of the assessment a number of broad themes have emerged which relate to categories of asset that are either particularly vulnerable or are topics that have received too little attention to make a valid assessment possible.

### **10.4.1 Inter-tidal peats**

Inter-tidal peats, reflecting formerly lower sea levels, have been identified at a number of locations along the NE coast, notably at Hartlepool Bay (Chapter 6), Whitburn Bay (Chapter 7), Cresswell (Chapter 8), Low Hauxley (Chapter 9) (see also Raistrick and Blackburn 1932). At Hartlepool these are associated with archaeological deposits dating from the Mesolithic, Neolithic and Romano-British periods while artefacts and palaeofaunal remains have been recovered at the other localities. Access to these deposits is generally difficult and only possible at low tide, while some are never exposed, although the Low Hauxley land surface extends into the cliffs below a later dune system from where Bronze Age burials continue to emerge. It was noted in Chapter 6 that such deposits are particularly vulnerable to alterations in the wave regime that can be brought about by the construction of sea defences. In order to assess the threat to such deposits posed by various mitigation strategies their full extent needs to be established, together with their date and their archaeological and palaeoenvironmental potential. This has already been largely achieved for the Hartlepool Bay peat (Waughman 2005). These deposits are also a major component of the research

undertaken into sea level change outlined in Chapter 3. They are the focus of NERRF Research Theme **M1**, Research Priority **Mi** and Recommendations **MT18** to **MT23**.

#### **10.4.2 Deflation and blow-out of sand dunes**

While sand dunes are a major feature of the NE coast, particularly north of the Tyne, the history of these systems is little understood. At some locations they appear to have formed during recent centuries whereas elsewhere their presence can be documented from the Bronze Age. Even where some management has been undertaken, dune systems are dynamic and constantly on the move. Part of this movement is the process of deflation and blow-out in which the sand of the dune is re-deposited through wind action and underlying deposits are exposed. At a number of locations where this has occurred, archaeological deposits have been exposed; examples being the Mesolithic and Bronze Ages sites at Low Hauxley and Ross Links and those at Bamburgh where Bronze Age and Anglo-Saxon burials have been found in and around a blow-out known locally as the 'Bole Hole'. Low Hauxley lies at the north end of Druridge Bay and the dune system there extends for over 8km while that at Ross Links is 3km in extent. These systems seal land surfaces that were the focus of human activity from the 6<sup>th</sup> to early 2<sup>nd</sup> millennium cal BC and the potential for making significant discoveries is considerable, but one that is seriously threatened by erosion of the dunes. Comparable dune systems are widespread along the Northumberland coast and offer the prospect of important discoveries similar to those at Low Hauxley and Ross Links. However, while these sites are known to be important and are, to some extent, monitored, the potential elsewhere is unknown and priority should be given to recording dune deflation and blow-out along the entire Northumberland coast north of the Coquet and as far as Scremerston. They are the focus of NERRF Research Priorities **Mi**, **Mvii**, **liv** and **EMiv** and Recommendations **M26** to **M27**.

#### **10.4.3 Land reclamation**

The history of land reclamation in the major tidal estuaries, especially that of the Tees, is yet to be addressed. The association of sea banks and walls with traces of the salt making industry, some of which can be dated to the Medieval Period, provides an indication of a way in which this topic may be approached while desk based studies of cartographic and documentary sources should be carried out in parallel. The salt making industry is itself an important field of inquiry and currently the subject of a programme of documentary research and field work being undertaken by David Cranstone (*pers. Comm.*).

#### **10.4.4 Pre-Industrial shipbuilding**

Shipbuilding has been a major industry on the NE coast and in the estuaries of the major rivers. The C19 and C20 rise, decline and fall of the major shipyards of the Tyne, the Wear and Hartlepool has been well documented but few systematic data are available on the earlier phases of the industry or on the smaller scale shipyards to be found at every suitable location along the coast. Some sites are recorded in the HERs, but mainly from documentary rather than field evidence. Stafford Linsley's 2005 book on *Ports and Harbours of Northumberland* provides a starting point for consideration of that part of the coast but this is also mainly based on documentary rather than field evidence. Shipbuilding is identified as NERRF Research Theme **MO2** and Recommendations **MT1** and **MT2**.

#### **10.4.5 The fishing and whaling industries**

From time immemorial fishing has been a major industry on the NE coast but with the exception of detailed studies of individual ports or vessel types, such as the coble, the archaeology the NE fisheries is yet to be written. The remains of the fishing industry are widespread and include vessels of which there are several types in addition to the coble, such as 12m to 15m keel boats now lying inverted at Holy Island Harbour and various shore facilities mostly now converted to other uses. Several NE ports including Whitby, North Shields and Berwick-upon-Tweed also supported fleets engaged in the Greenland whaling trade. This industry required a range of special facilities for the processing and storage of the catch. At present the early C19 oil house at Berwick-upon-Tweed, later converted into maltings, is the only structure on the NE coast associated with the whaling industry to receive statutory protection through designation. The fishing industry is highlighted as NERRF Research Priorities **EMiv**, and **MDx**.

#### **10.4.6 The evolution of small harbours, docks and related facilities**

The consideration of the North Yorkshire coast in Chapter 6 drew attention to a number of small docks and harbours associated with the alum and ironstone industries. These have already been the subject of some study but lying between MHWS and LAT they are particularly vulnerable to the effects of sea level rise, either exposing them to accelerated erosion or further limiting access. Associated with this work is the study of the rutways, rock-cut channels designed to facilitate the movement of carts across the foreshore. Some recording of these features has already taken place, undertaken by Tees Archaeology, but this work needs to be supplemented and extended to cover the whole coastline from Huntcliff to Sandsend.

Small harbours and docks are not phenomena limited to the North Yorkshire coast in that similar, simple dock-like facilities have been noted at Beadnell and Seahouses while an example at Dunstanburgh has been dated to the Middle Ages. These represent the earliest stages in the development of harbour facilities on the NE coast and ante-date the construction of formal piers and harbour works in the C18. A programme of recording these features and prospecting for similar sites should be considered a priority.

#### **10.4.7 Foreshore survey of all surviving shipwrecks**

All shipwrecks documented between LAT and MHWS have been listed but in the majority of cases the evidence is documentary rather than physical. It will be necessary to undertake a survey of the foreshore in order to establish where actual vessels survive and when identified these should be fully documented. Lying between LAT and MHWS such assets, like other features on the foreshore, are particularly vulnerable to the effects of sea level rise, either exposing them to accelerated erosion or further limiting access. Only when this fieldwork has been undertaken can an assessment be made of the extent to which individual wrecks are under threat. The study of shipwrecks is identified as a component of NERRF Research Theme **MO2** and Recommendations **MT3** and **MT5** to **MT12**.

#### 10.4.8 WWII anti-invasion features

It has already been noted that 74% of the assets recorded during the APTE relate to the Second World War. Most of these features have been identified on aerial photographs taken during the course of the war or in its immediate aftermath. Many were ephemeral and were cleared at the end of hostilities while others have been removed during subsequent development projects, such as the building of housing and industrial estates. Some features such as pillboxes and anti-tank blocks do survive and are frequently encountered on visits to the coast. However, the establishment of which sites recorded by the APTE are still extant requires field visits and is beyond the scope of the current desk-based study. Priority should be given to fully recording the two Defence Areas within the NERCZA study zone, Greatham Creek and Druridge Bay, while in the longer term this should be extended to the whole coastline. Some work of this kind was undertaken by the CBA's *Defence of Britain* project, but the coverage is incomplete, very often sites are only recorded with a six-figure NGR and some parts of the survey have been found to be unreliable. This topic falls within NERRF Recommendation **F10** and Research Priority **MOvi**.

#### 10.4.9 Recreation

The recreational use of the coastline and foreshore – the 'seaside' – is only now beginning to emerge as a topic of interest and associated facilities do not generally feature in the HERs, though some beach huts at Saltburn are Grade II Listed Buildings. This topic is partly covered by NERRF Research Priority **MOvii**.

### 10.5 Site specific issues

In the following paragraphs details are provided of nine localities within the NERCZA study area where coastal erosion is currently degrading heritage assets. In each case the situation needs to be monitored and proposals for mitigation drawn up. Such proposals are likely to entail surveys of the surviving remains and in some cases, excavation leading to preservation by record. Specific proposals for the most threatened sites are contained in the project design for a Phase 2 NERCZA.

**10.5.1** The main flint scatter site at Crimdon Dene is close to the MHWS limit while the sites at Blackhall are on the cliff edge (Chapter 6.2.2). This section of the coast lies in SMP2 Management Areas 10.1 and 11.1 where the recommended policy is one of 'No Active Intervention'. The former is vulnerable to the effects of sea level rise and the latter to erosion of the cliff.

**10.5.2** Although the Overdale Wyke enclosures (Chapter 6.2.3) survive only as cropmarks, the most easterly sites lie within 100m of the present cliff edge and could become vulnerable in the event of cliff collapse or landslide.

**10.5.3** In Chapter 6 it was noted that the SMP2 recommendation for the areas adjoining Greatham Creek is 'No Active Intervention' to be followed in the middle term by 'Managed Retreat' which may entail the construction of sea defences. Three categories of asset in this area can be considered vulnerable to the effects of flooding due to rising sea levels and/or the construction works involved in the erection of sea defences. These consist of a prehistoric midden, a group of Medieval and later salterns and the features of the Greatham Creek Defence Area, the latter being one of the most complete surviving complexes in the NE. The full recording of these features and the assessment of the extent to which they are at risk is a matter of priority.

**10.5.4** The remains of an alum works are visible in the cliff face at Hummersea (Chapter 6.2.8), currently some 8m above sea level. The buildings would originally have been located on a platform, to avoid the tides. The structures have been engulfed by a landslip from the cliff above, hence the fragmentary remains exposed in the cliff face. All the North Yorkshire alum works were situated close to the cliff and several have been reduced by cliff collapse and landslip. The Kettleness site has been the subject of a detailed survey but similar surveys are also required at Boulby and Sandsend.

**10.5.5** An erosion rate of 0.2m/per year has been recorded at Trow Point and the SMP2 policy recommendation is to allow the cliff face to retreat. Clearly, if any of the Trow Point barrow survives (Chapter 7.2.4), this rate of erosion is likely to lead to its total loss in the near future. A field visit and survey is required in order to assess the condition of preservation of this feature and the opportunities for any recording depending on what currently survives.

**10.5.6** The HER records that a quantity of slaggy material has been noted eroding out of the sides of an embanked promontory known as 'Pan Close' beside the River Aln at Alnmouth. A number of mounds to the east have been identified as sleeching tips and the area is marked as 'Saltings' on the 1:10,000 OS Map (Chapter 8.3.3.1). This site is being actively eroded by the river and the SMP1 data show the whole area to be at risk of flooding. The 'Preferred Strategic Option' here is to 'Selectively hold the line' and it is unclear what the implication of this is for the site.

**10.5.7** The oyster beds which lie adjacent to the Alnmouth salt working site are subject to the same threat. This is the only example of oyster cultivation recorded on the NE coast but represents an activity that was formerly widespread in England from Roman times.

**10.5.8** The Amble hulks (Chapter 8.3.3.6) lie in the zone between LAT and MHWS and are vulnerable to every tide. They lie within SMP1 Unit 30 for which The 'Preferred Strategic Option' is 'Selectively hold the line' and it is unclear what the implication of this is for the site. A full survey should be considered an urgent priority.

**10.5.9** The multivallate fort identified from cropmarks at Fenham (Chapter 9.2.3) has already been partly destroyed by ploughing and erosion. The remaining part is very close to a low cliff about five metres high immediately above MHWS. This site is likely to be further reduced as the cliff continues to erode. Lowland Iron Age forts are poorly understood having have been only recently been recognised. Iron Age forts in coastal settings are also relatively rare, particularly on the NE coast. Therefore this site, and that mentioned below at

Scremerston, are of high regional significance and should be investigated and recorded without delay. Assessment of the condition of surviving deposits, their exposure to on-going erosion and production of a concise management plan are key priorities.

**10.5.10** The situation at Fenham is being repeated in the case of the multivallate lowland fort at Scremerston (Chapter 9.2.3) where the eastern side of the site has been lost to erosion of the cliff. The same priorities for the Fenham fort also apply to this site.