RAPID COASTAL ZONE ASSESSMENT

YORKSHIRE AND LINCOLNSHIRE

Bempton to Donna Nook

English Heritage Project 3729

T. Brigham, J. Buglass & R. George
HUMBER FIELD ARCHAEOLOGY, The Old School, Northumberland Avenue, KINGSTON UPON HULL, HU2 0LN.

February 2008

Humber Archaeology Report No. 235

List of Contents

List of Figures and Parish Maps

(Bound at end)

List of Plates

1 SUMMARY

This volume represents the first stage in a Rapid Coastal Zone Assessment (RCZA) undertaken by Humber Field Archaeology, on behalf of English Heritage, in order to provide an assessment of the archaeological potential of the coast between Whitby, North Yorkshire and the Norfolk border. This volume covers the coastal sector between Flamborough Head and Donna Nook, and includes the banks of the Humber estuary as far upstream as Sunk Island and Grimsby. This work was undertaken between April 2006 and May 2007.

The RCZA is based on the principles and methodology presented in Version 8 of *A Brief for Rapid Coastal Zone Assessment Surveys* (English Heritage 2006a), and originally outlined in *England's coastal heritage: A statement on the management of coastal archaeology* (English Heritage & RCHME, March 1996). The area of coverage principally includes the shoreline (to Lowest Astronomical Tide level) and 1km band of cliff and coastal hinterland, although virtually the entire Flamborough Head peninsula is included. In addition, aerial photographic survey and analysis to National Mapping Programme standards covers the same area, but includes entire 1km map squares, which in many areas extends the area of coverage inland. Areas below low-water mark, such as records of shipwrecks, wreck fastenings, dive sites and dredgings, are not generally included.

The RCZA aims to establish a more comprehensive and reliable database assessment of the range and scope of the archaeological resource than is currently available. Not only should this lead to a significant improvement in the archaeological coverage within the various Local Authority HERs, but it is also intended to inform long-term strategies for the management of the cultural heritage resource, especially in the light of the current Shoreline Management Plans. The results have been published in the form of a series of reports, arranged by coastal section, and supported by maps showing distributions of sites. A digital archive is also available, including a GIS-based record of the NMP data.

The project describes and locates 2264 records, 1864 of which are in the East Riding area, 400 in Lincolnshire/North East Lincolnshire. Of these, over 600 entries are new to the local SMRs/HERs, principally deriving from NMR records, including the results of the aerial photographic survey commissioned for the project.

2 INTRODUCTION

2.1 Background

The project is a joint venture between English Heritage as the commissioning organisation and Humber Field Archaeology as principal contractor, to enhance the coastal archaeology record of north-eastern England, and identify sites at short- and medium-term risk in the coastal hinterland along the Yorkshire and Lincolnshire coast and in the mouth of the Humber estuary. The relevant information gathered by the project has been formulated as a series of desk-top reports provided to English Heritage and the National Monuments Record, with summaries and pdf versions of the reports available via OASIS/ADS, and digital archives, including a GIS-based record of the aerial photographic analysis. The first stage of the project (Bempton to North Somercoates) includes resources for adding the information to the Historic Environment Record (or Sites & Monuments Record) databases maintained by the Humber Archaeology Partnership (for the coast of the East Riding of Yorkshire), the North-East Lincolnshire Archaeology Service, and Lincolnshire Sites & Monuments Record Office (for North-East Lincolnshire and Lincolnshire). These record offices now use versions of exeGesIS software, although these will be subject to constant update. All aerial photographic data has also been added to the NMR database to extend NMP coverage.

The value of rapid coastal zone assessment surveys of the intertidal zone and its immediate hinterland has been established in a number of areas of the United Kingdom, supported by fieldwork where this is safe and practicable. It has proved possible elsewhere, for example in Norfolk and Suffolk and the Isles of Scilly, to identify and locate large numbers of new HER monuments and activity records, which can be collated using GIS-based systems, and disseminated in a number of ways.

The Humber Wetlands Project, an English Heritage-sponsored project evaluating and assessing the wetlands heritage of the Humber/Holderness region between 1994–2001, made the decision to omit sites within the intertidal zone in their Holderness study (see Van de Noort & Ellis 1995), and this is therefore an area where work is required. In addition, large areas of land are currently eroding, and recent fieldwork (e.g. near Easington) has identified archaeological sites which are at risk of destruction by:

- Active coastal erosion
- Commercial, industrial and residential development
- The potential relocation of current coastal facilities to new sites further from the areas at immediate risk

The collection and collation of information will allow areas of the coastal hinterland to be particularly targeted for field survey where the results of the documentary and aerial photographic surveys suggest that this is suitable. An updated project design for this second phase is a deliverable stemming directly from the completion of the desk-based assessment.

2.2 Definition of the Study Area

The area of interest covered by this volume comprises a 1km strip of coast which extends across (north to south) the East Riding of Yorkshire, North-East Lincolnshire and Lincolnshire, from Bempton parish in the north to Donna Nook coastguard station

(TF 431 995) in the south. It includes the mouth of the Humber estuary as far inland as Patrington Channel at the east end of Sunk Island on the north bank, and Grimsby on the south bank (Fig 1). For the study, it was considered essential to survey the available data covering the intertidal zone (above Lowest Astronomical Tide level) and the coastal hinterland from high tide level for a distance of up to 1km inland. The aerial photographic survey extends this area in many places, as it complies with standard National Mapping Programme recording procedures, which is to cover entire complete 1km squares.

Broadly, the coastline south of the chalk cliffs of Flamborough Head consists of the glacial tills of the Holderness coast, which are receding at an estimated rate of 1.8m+ per year. Spurn Point is normally an area of accretion, but is periodically eroded and breached, particularly during easterly storms. The Point has at times virtually vanished, and is in general continually being re-established further and further west as the coast at Kilnsea retreats. The intertidal estuary of the River Humber between Spurn Point and Sunk Island consists of an area of shifting patterns of erosion and deposition of alluvium and sand. The area between Grimsby and Donna Nook is also principally an area of accretion, although there is some movement of sediments and periodic erosion of beach sediments in the Cleethorpes area.

The Humber is the only major river to enter the sea along this stretch of coast, but there are minor streams and channels, including the Gypsey Race, which enters the sea through Bridlington Harbour. Natural drainage in Holderness originally ran from north-east to south-west, with streams commencing in the low gravel hills along the coast and entering the Humber through the drainage system of the River Hull, Patrington Channel etc. This has now been largely reversed, via canalised drains such as Tunstall Drain and the Earl's Dike.

This area encompasses a wide range of archaeological sites of local, regional and national importance, from prehistoric settlements to Second World War defences, as well as a diverse geology and geography. These are unevenly affected by a variety of risks, both natural and developmental. The East Yorkshire study area includes two Heritage Coasts: Flamborough Head, and Spurn Point, which have a higher degree of protection from commercial development than elsewhere, but remain at risk from natural processes, particularly Spurn Point, which is currently at a critical stage in its continuing evolution.

Along this coast and within this project area there are several towns and resorts, the largest being Bridlington, Hornsea and Withernsea, with smaller settlements under imminent threat from coastal erosion, such as Kilnsea and Mappleton; other villages are generally a little further inland, such as Easington and Aldbrough. Between these are past and present industrial/commercial developments, nowadays primarily consisting of holiday camps and related leisure developments: there are highly vulnerable historical sites here and development pressures still affect the hinterland. Historic ports and related facilities are also at risk from urban development and sea defence works (e.g. the proposed marina at Bridlington).

The lead unitary authority for the area is the East Riding of Yorkshire Council. The study area is divided for the purposes of shoreline management into zones based on sediment cells, each consisting of several smaller policy management units (see below).

2.2 Coastal management

General background

As already stated, the section of the proposal area within East Yorkshire includes Flamborough Head and Spurn Point Heritage Coasts. Heritage Coasts are a non-statutory landscape definition, unlike the formally designated National Parks and Areas of Outstanding Natural Beauty (AONBs) and are defined by agreement between the relevant maritime local authorities and the Countryside Agency. Flamborough is also a Marine Special Area of Conservation, a Site of Special Scientific Importance, and includes local nature reserves. Spurn has a number of other important designations including National Nature Reserve, Site of Special Scientific Importance, and Special Protection Area status. It is also designated as a wetland of international importance under the terms of the Ramsar Convention (1976). Donna Nook is also a National Nature Reserve, and home to a breeding colony of grey seals.

For the purposes of shoreline management, the coast of England and Wales has been divided into eleven sediment cells, which can be defined as lengths of coastline which are relatively self-contained as far as the movement of sediments is concerned. Each of these is sub-divided for convenience into sub-cells, composed of a number of smaller management units. A management unit is a length of shoreline with 'reasonably coherent characteristics in terms of coastal process and land use' (Posford Duvivier 1998, 1). The sediment cells within the study area comprise parts of:

- Cell 1, extending from St Abb's Head to Flamborough Head. This has been divided into sub-cells, of which Whitby to Flamborough Head falls entirely within sub-cell 1d (which starts at Saltburn), mainly in the Scarborough Borough Council area, although the northern coast of Flamborough Head (Buckton, Bempton and Flamborough parishes) lies within the East Riding of Yorkshire Council area. The data for these is included with material from cell 2, which incorporates the remainder of the ERYC coastal area.

- Cell 2, extending from Flamborough Head to Snettisham. This cell has been divided in the study area into sub-cell 2a, comprising units 1–15 (Flamborough Head to Sunk Island) and sub-cell 2b, comprising units 16–18 (Grimsby to Donna Nook), which conveniently divide information between the East Riding of Yorkshire and North-East Lincolnshire/Lincolnshire Council areas.

Defra's 2002 Futurecoast study (Halcrow 2003), which has provided scientific information on coastal process for the second generation of Shoreline Management Plans, considers that the cell system has some shortcomings, as reflecting only one aspect of coastal system behaviour. It adopted a system based on three separate levels: coastal Behaviour Systems (areas with similar characteristics or strong interactions, defined by long-term regional evolution); Shoreline Behaviour Units (sections of shoreline that exhibit coherent behavioural tendencies, such as a bay protected by headlands); Geomorphological Units (a combination of spatially-discrete morphology, sediment and process, such as a dune system or saltmarsh). English Heritage (2006a: section 3.3), however, prefer desk-top surveys to coincide with the boundaries of sub-cells or management units. The size of the dataset for the RCZA means that further internal division has been required, notably between Scarborough Borough, the East Riding of

Yorkshire and North-East Lincolnshire/Lincolnshire, the political boundaries between the first two do not coincide exactly with the boundary of cells 1 and 2a.

A variety of local management documents have been produced, including the Filey Bay Coastal Defence Strategy, Headland Heritage Coast Management Plans for Flamborough Head and Spurn, and the Flamborough Sensitive Marine Area Management Strategy. Recently, the theme of coastal erosion and its effects on archaeology and the historic environment of East Yorkshire have been presented in an Integrated Coastal Zone Management Plan (East Riding of Yorkshire Council 2002). Principal among these documents are the Shoreline Management Plans, which set out the long-term policy for management by local authorities or groups of authorities, and the Environment Agency.

Shoreline Management Plans

A series of Regional Coastal Defence Groups (RCGs) were set up by the Ministry of Agriculture, Fisheries and Farming (MAFF), now replaced by the Department for Environment, Food and Rural Affairs (defra), specifically the Flood Management Division, and these were required to produce Shoreline Management Plans (SMPs) for areas within their remit.

- The RCGs are voluntary coastal defence groups, primarily consisting of representatives of the district authorities and any other bodies with coastal defence responsibilities, including the Environment Agency. For the study area, the coastline between Whitby to Flamborough Head (cell 1d) falls within the North East Coastal Authorities Group area (NECAG), and the coastline between Flamborough and Donna Nook (cells 2a, 2b) is included in the zone covered by the Humber Estuary Coastal Authorities Group (HECAG: information obtained from www.defra.gov.uk/environ/fcd/hltarget/HLT8report1, 28/4/2004).

- An SMP is a document which sets out a strategy for coastal defence for a specified length of coast, normally a sediment sub-cell or group of sub-cells, taking account of natural coastal processes and human and other environmental influences and needs.

The first round of 49 SMPs for England and Wales was completed between 1995–2000, and they were intended for revision on a 5-year cycle. An initial criticism of the first reports was that appropriate long-term decisions were not made, and that an improved understanding of processes acting on the shoreline was required of the second round. As a result, defra and the National Assembly for Wales have collaborated to improve the second stage SMPs by ensuring that a scientific and consistent basis for predicting coastal change over the next century is available; this study, completed in 2002, is known as Futurecoast (Halcrow 2003). In this process, English Heritage will assist in helping to ensure the protection of significant ‘coastal historic assets’, and where this is not possible, help to develop mitigation strategies which are ‘economically viable, technically sound and environmentally sustainable’ (English Heritage 2006b).

In the East Riding area, the need to protect the archaeological resource from any adverse effects of coastal defence activities or policies was outlined in a Shoreline Management Plan commissioned by the Humber Estuary Coastal Advisory Group (HECAG), comprising local authorities and interest groups (Posford Duvivier 1998). This was also highlighted in a much more comprehensive plan for the Humber Estuary (Environment Agency 2000). A

plan has also been produced for the area between St Abbs Head and Flamborough Head by the North East Coastal Authorities Group (NECAG), and by Scarborough Borough Council (1997) for the area between Huntcliffe and Flamborough Head. Revision of the Plans for both areas ('SMP2') is currently underway.

The purpose of the SMP is to determine a management policy for each policy unit (English Heritage 2006b: Part 1). The alternatives can be summarised as:

1. *Hold the existing defence line* by maintaining or changing the standard of protection. This policy should cover those situations where works or operations are undertaken in front of the existing defences (e.g. beach recharge, rebuilding the toe of a structure, the construction of offshore breakwaters, etc.), to improve or maintain the standard of protection provided by the existing defence line. Policies that involve operations to the rear of existing defences (e.g. construction of secondary floodwalls) should be included under this policy where they form an integral part of maintaining the current coastal defence systems;

2. *Advance the existing defence line* by constructing new defences seaward of the original defences. Note that use of this policy should be limited to those policy units where significant land claim is considered;

3. *Managed realignment* by identifying a new line of defence and, where appropriate, constructing new defences landward of the original defences;

4. *No active intervention* where there is no investment in coastal defence assets or operations, i.e. no shoreline management activity.

In practice, option 2 is unlikely to be adopted in the area for purposes of sea defence, although an advanced waterfront may be proposed where new developments are planned which require additional land (e.g. port or marina extensions). The table below shows the pferred options outlined in the East Riding Integrated Coastal Zone Management Plan, (ERYC 2002).

Management Unit Number	**Location**	**Preferred Option for Lifetime of SMP**
1	Flamborough	Do Nothing
2	Bridlington Promenades	Hold the Line
3	Wilsthorpe/Fraisthorpe	Do nothing
4	Barmston/Atwick	Do Nothing Hold the Line when needed at Atwick gas storage facilities Hold the Line at Barmston Drain pending more detailed economic analysis
5	Hornsea	Hold the Line
6	Rolston	Do nothing
7	Mappleton	Hold the Line

8	Aldbrough/Tunstall	Do nothing Hold the Line at Tunstall Drain pending more detailed economic analysis
9	Withernsea	Hold the Line
10	Holmpton	Do nothing
11	Easington Gas Terminals	Hold the Line (to be reviewed in 2020)
12	Easington/Kilnsea	Do nothing Retreat the line periodically at New Bank flood defences
13	Spurn Peninsula	Do nothing Local retreat or intervention where monitoring so requires
14	Sunk Bight	Hold the Line
15	Sunk Island	Hold the Line
16	Immingham	Hold the Line
17	Grimsby and Cleethorpes	Hold the Line
18	Humberston/Donna Nook	Hold the Line

SMP review is intended to occur every 5–10 years to assess the rapidly changing situation, the overall planning process being staged.

Stage	**SMP**	**Strategy plan**	**Scheme**
Aim	To identify policies to manage risks.	To identify appropriate scheme types to implement policies.	To identify the nature of works to implement preferred scheme.
Delivers	Broad-brush assessment of risks, opportunities and constraints, areas of uncertainty.	Preferred approach (i.e. scheme type) including economic and environmental decisions.	Comparison of different implementation options for preferred scheme type.
Output	Generic policies (e.g. hold the line, advance the line etc.)	Type of scheme (e.g. beach recharge, seawall, setback embankment etc.)	Type of works (e.g. revetment, wall, recycling etc.)
Outcome	Improved undertaking of the longer term sustainable management for the coast.	Sets out management measures that will provide the optimum approach to flood and erosion management for a specified area.	Reduced flood and erosion risk to people and assets (natural and man-made).

The RCZA can assist in the development of a strategy plan by defining the heritage resource to inform the SMP at an early stage. By attempting to quantify the status and risk to individual monuments, it should be possible to highlight those which require imminent remedial action; this is a significant improvement on the use of raw HER and NMR data in areas where no RCZA has taken place. The presence of an 'at risk' historic asset is unlikely to influence the implementation of a management scheme in most cases, as the majority would not repay substantial outlay, but it may help to give a timescale during which action must be taken. An example would be a Romano-British field system in an area where *managed realignment* or *no active intervention* are identified as the correct course of action. However, the English Heritage position is that significant monuments should be protected 'wherever this is economically, technically and environmentally sustainable' (English Heritage 2006b). This might be time-limited (e.g. to 20 or 50 years), but some monuments would be considered of such significance that indefinite protection would be proposed: clear examples of this in the region include Whitby Abbey and Scarborough Castle, although both would still be vulnerable to cliff falls and airborne erosion.

Although the majority of listed buildings in the study area are currently protected by seawalls in coastal settlements, and hence could be considered not at risk from erosion as long as defences are maintained, rising sea level in relation to the land in fact places many such areas in doubt over a period of perhaps 50–100 years. Substantial outlay will be required to protect coastal towns and villages in the future. Cliff falls will still occur, even in areas protected by sea defences. For those which are at risk (most immediately those in unprotected coastal areas), English Heritage has outlined two options:

1. Recording, followed by staged abandonment, ruination and/or demolition, (perhaps involving removal of architecturally or culturally significant components), consistent with H&S considerations; or
2. Recording, followed by controlled dismantling/demolition and re-location to a nearby sustainable site, ideally in a comparable topographic situation to the building's original site.

England's Historic Seascapes

This project, which consists of four pilot studies, aims to apply tested Historic Landscape Characterisation (HLC) methodology to the inter-tidal and marine zone, building on an initial HLC methodology developed for Liverpool Bay (Wessex Archaeology 2005). A key role for the resulting characterisation methodology will be to frame responses to marine aggregates extraction. The involvement of the aggregate extraction industry in the maritime zone has meant that funding for the pilot studies could be obtained from the Aggregates Levy Sustainability Fund (ALSF).

This marine and inter-tidal characterisation will complement the current national programme of County-based HLC projects which, through desk-based GIS mapping and analysis, seek an archaeological understanding of the historical and cultural development of the whole of the present landscape. It will enhance English Heritage's ability to inform the management of change affecting the historic environment, using methodologies compatible with natural environment datasets. The project's analysis will be of the present landscape, and will give a context to the otherwise predominantly point-data records of the coastal and marine historic environment.

One of the four pilots is included in the RCZA Flamborough–Donna Nook study area: Withernsea–Skegness (English Heritage 2005b). The landward limit of the pilot area extends to at least Mean High Water (MHW). The seaward limit is that of the UK Continental Shelf, following the Median Line with Holland, as defined in the UK Continental Shelf Act 1964 as subsequently amended.

All estuaries within the project area have been included to the Normal Tidal Limit along their rivers and tributaries.

English Nature policy

A policy document produced by English Nature in 2005 was commissioned 'to identify environmental enhancement opportunities in advance of the production of second generation Shoreline Management Plans (SMPs)' in three key areas: Tyne to Tees, Saltburn to Bridlington, and Bridlington to Skegness. This work was intended 'to raise awareness amongst operating authorities of biodiversity opportunities linked to the implementation of SMP policies. It is also the intention that taking such an approach will integrate shoreline management with the long term evolution of the coast and help delivery the targets set out in the UK Biodiversity Action Plan.' (English Nature 2005, Foreword). In practice, the report identifies areas where new coastal natural habitats can be created, either as a result of SMP policies regarding (for example) realignment, or by separate initiatives.

The study identified a total of four such 'opportunities' between Saltburn and Bridlington, only one of which would require a change in the existing SMP policy. This opportunity was associated with integrating SMP policy and land use planning policy. A total of thirteen 'opportunities' were identified between Bridlington and Skegness, twelve of which would require some change in the existing SMP policy. Many of these were related to managed realignment. The principal outcome will be to create new areas of saline lagoons, saltmarsh, coastal and grazing marsh, reedbeds, mudflats, as well as preserve existing dunes and other natural features. The overall aim within the area would be to create at least 100ha of new mudflat per annum, in addition to 2500ha of new grazing marsh and 1200ha of reedbed, by 2010.

The policy document makes no reference to archaeology, and the areas selected would have clear implications in some areas for the historical and archaeological resource. The opportunities in the East Riding area are:

1. Tunstall Drain (TA 319 310). Although currently maintained by the Environment Agency, the line of sea defences in the area is likely to be retreated in the near future, perhaps as far as the Withernsea Road, which will allow large areas to be converted to lagoons, grazing marshes etc;
2. Barmston north (TA 169 600);
3. Barmston Drain (TA 173 587);
4. Easington–Kilnsea coast (TA 408 185–TA 412 168). Managed retreat of coastal defences to the west of existing lagoons;
5. Easington, Clay Bank Marshes (TA 404 166), Blue Bell Fields (TA 418 155);
6. Easington, Humber shoreline (TA 390 185–TA 404 185).

Work has already taken place south of the Blue Bell, in the excavation of a borrow pit for new flood defences, creating a lagoon. This was monitored archaeologically by Humber

Field Archaeology, and the borrow pit was deliberately sited by the Environment Agency to avoid an area of known Romano-British settlement immediately to the south. The potential threat to the resource is, however, clear from the scale of the works proposed, particularly, perhaps, near Tunstall Drain.

Rollback

East Riding of Yorkshire Council have commissioned a report studying the effects of coastal erosion on 24 caravan/holiday home parks considered to be at risk in the next 100 years (David Tyldesley & Associates 2003). The study presented the options open to site owners and local planners, using three sites as test cases. The archaeological implications were not considered, but are in any case clear: there is potential through the dismantling of existing sites, and the removal of those sites to new locations, or their extension to the landward side, for substantial damage to the archaeological resource as an indirect effect of coastal erosion, unless correctly managed through the planning process. To this should be added the relocation of homes and other types of business, such as farms.

In practice, the programme is already underway, with the first projects already within the planning process.

2.3 The shoreline heritage

Currently, in addition to the considerable number of policy documents, a large quantity of information has been accumulated by the regional HERs. A proportion of this has not been added to the HER databases, for example where it is presented in the form of a desk-based assessment, as a donation or bequest, and/or as material in an uncatalogued form. Information of this type held by Humber SMR/HER includes desk-based assessments for Spurn (Hall 2002), Flamborough Head Heritage Coast (Harrison 2000), and Bridlington Harbour (Chamberlin & Evans 2000). Further DBAs have been produced for Filey Bay, North Yorkshire (Brigham 2001; Buglass 2004) and the Immingham area, North/North-East Lincolnshire (Buglass 1999). While these contain material mainly derived from the HER, they may well also contain new data (for example from fieldwalking, documentary survey and aerial photographic analysis). In the maritime zone, *Artefacts from the Sea* research has been undertaken by Wessex Archaeology. Pilot studies, *England's Historic Seascapes Scarborough to Hartlepool* and *Withernsea to Skegness* are also underway, undertaken respectively by Cornwall County Council Historic Environment Service (Johns *et al* 2005)and the Museum of London Archaeology Service (Malt 2006), with a brief to provide Historic Landscape Characterisation of the intertidal and maritime zones. Exchange of relevant data with the RCZA was considered mutually beneficial, and some material forms part of this document.

Individual artefact or site findspots and event records are more likely to have been added. Prior to 2005, the HER for the East Riding alone was thought to hold over 2000 records relating to the coastal zone, including sites in the hinterland and maritime areas; a considerable quantity of further material remained to be added to the database. Of the existing records, only 12 were specifically defined as *maritime records* (pers comm Ruth Atkinson), although this was expected to expand, as the majority of the existing monument records were created prior to the installation of the maritime tab on the HBSMR system. The National Monuments record (NMR) archive for the Study Area contains several thousand monument entries and over 500 event records, although not all are relevant, and many duplicate HER holdings.

Sheppard (1912: see Plate 1) records the villages lost or partially lost on the North Sea coast as (from Bridlington southwards): Hilderthorpe (DMV partially eroded but the remainder preserved behind sea defences); Wilsthorpe (DMV partially surviving inland and beneath houses on unprotected cliff); Auburn; Hartburn; Hyde; Withow; Cleeton; Northorpe (1), Hornsea Burton; Hornsea Beck, Southorpe; Great Cowden (partial remains on cliff); Little Cowden (partial remains on cliff); Old Aldbrough, Ringbrough; Monkwell; Monkwith, Sand-le-Mere; Waxholme; Owthorne; Newsham; Old Withernsea; Out Newton; Dimlington; Turmarr; Northorpe (2); Hoton; Old Kilnsea; Ravenspurn; Ravenser Odd.

Below present Sunk Island and the area eastwards to Spurn in the Humber Estuary lie (from west to east): Tharlesthorpe; East Somerte; Frismersk; Orwiththorpe; Pensthorpe; Sunfleet; the site of Burstall Priory.

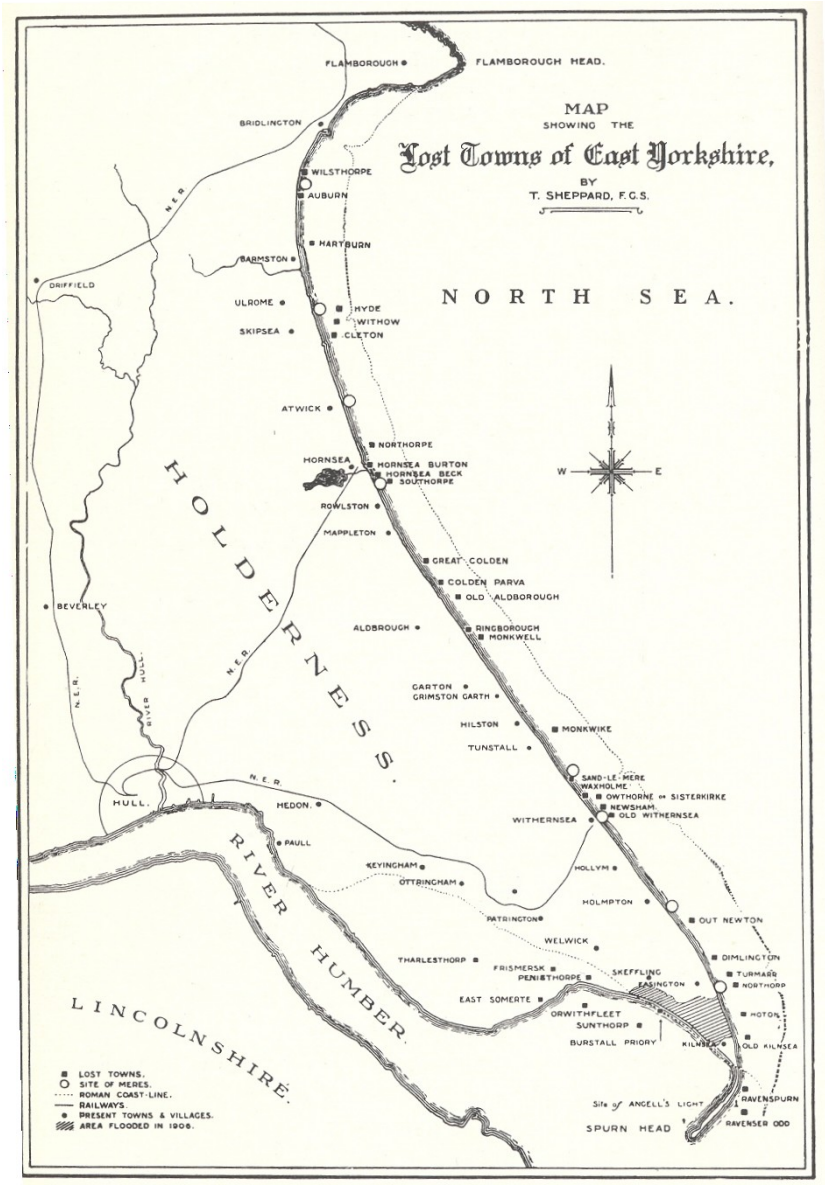

Plate 1 The Lost Towns of the Yorkshire Coast (Sheppard 1912)

2.4 Characteristics of the Yorkshire and north Lincolnshire coast

The following sections attempt briefly to characterise the main features and problems of lengths of coastline within the study area.

Filey Bay to Flamborough

The majority of Filey Bay lies within Cell 1, and will be discussed in the North Yorkshire volume; geographically speaking, however, Bempton and the northern coast of Flamborough form part of the bay.

The cliffs of Filey Bay, although partly protected by the dual promontories of The Brigg and Flamborough Head, are glacial till, and suffer from the same processes of coastal erosion and collapse as Holderness, averaging *c* 0.25m per annum. A measuring station using satellite imaging technology is currently sited within the bay, measuring the rate of erosion on a trial basis as part of an experiment by Newcastle University's Department of Geomatics.

There have been substantial and accelerating losses of areas of cliff, resulting in the collapse and destruction of elements of the World War 2 anti-invasion defences, and buildings. Prolonged heavy rainfall can cause substantial areas of slippage and mud flows similar to the rotational failures seen further north, with local areas of cliff retreat far exceeding the average in some years.

In exceptional storm conditions, the deep sands forming the beach can be partially or wholly stripped to reveal areas of the vulnerable till platform and expose many normally-buried features, such as wartime defensive structures and lines of timber posts. Wrecks of ships and a submarine can also be seen (or were formerly visible) at exceptional low tide near Bempton Cliffs. An increasing amount of timber is turning up either as drift from the breaking up of wrecks or is being revealed by scouring at the southern end of Filey Bay (J. Buglass pers comm).

A further feature of the Bay is its deep wooded ravines, created by spring-fed streams eroding the soft boulder clay; the margins of the valleys are prone to slippage like the main cliffs, although protected to a degree by tree cover. Most of the larger ravines have been developed in some way, usually with the construction of concrete access roads constructed over the culverted streams, and steps.

Since the prehistoric period, the hinterland has largely been given over to agricultural use, with some rough pasture. The area was home to scattered prehistoric settlement, with 'entrenchments' and funerary monuments, including Bronze Age barrows, on the high ground forming the Wolds edge and the slopes down to the relatively sheltered coastal plain. Medieval and later settlements are largely set back from the coast either side of the Bridlington to Scarborough road (A165), with scattered farmsteads since the enclosure of the open fields and commons. In the 20th century, areas of the cliff-top were developed, with several holiday parks in the area, but the coastal zone is generally sparsely inhabited.

Flamborough Head consists of chalk cliffs with a varying depth of glacial till capping. The high northern cliffs are being constantly eroded by the sea and chemical action, leading to cliff falls and in the very long term to a cycle of formation and eventual collapse of sea caves to form arches and stacks. The southern cliffs are protected from the prevailing

north-easterlies, and by broad ancient chalk boulder beaches, where fossil rhinoceros and elephant bones have been found (Plates 9, 10). The headland also protects the northern end of Bridlington Bay between Sewerby and Barmston, which is relatively stable compared to the main sweep of the Holderness coast, but still prone to cliff falls (Plate 11).

The headland forms an extension of the Yorkshire Wolds, an upland area which was heavily exploited from the early prehistoric period onwards; initially a source of flint and therefore visited by hunting groups, the area was settled during the Neolithic period, with barrows and other monuments characterising the succeeding Bronze Age and Iron Age: Danes Dyke is an important monument, although its exact date is still contested. The south coast, with its landing places and more sheltered location, seems to have been particularly favoured from the early prehistoric period onwards. Field systems and small settlements of Iron Age and Romano-British date show that the headland was seen as a good location, supplemented at least as early as the medieval period by fishing from the North and South Landings and the collection of seabirds' eggs.

The principal modern settlement is Flamborough village, centrally located, with scattered farmsteads. The main land-use is still largely agricultural, although several holiday camps have been built in the 20th century, and there is a substantial tourist industry relating to the cliffs and beaches, the RSPB reserve at Bempton, Danes Dyke, and the two lighthouses, one of which dates to the 17th century.

Holderness to Spurn Point

The Holderness coast, which includes Spurn Point at its southern tip, is the fastest eroding coastline in the country (Plates 13–15, 20, 21, 24, 25). The coast is characterised by cliffs of glacial till with some bands of sands and gravels, with some areas, such as Low Grounds near Barmston (Plate 12), only a few metres above sea level, whilst in other places, such as Easington, parts of the cliff are so low that they are covered by the upper beach (Plates 22, 23). In addition to normal processes of mechanical erosion by the sea, the morphology and orientation of the coast promotes the formation of *ords*, areas of low beach leading to a local acceleration of erosion, which actively migrate southward at a rate of around 500m per annum from their origin near Barmston to Spurn (Pringle 2003, 41–3, 46–9). The action of the ords not only exposes the vulnerable foot of the cliff, but can also reveal the till platform, which process has led to the undermining of sea defences and monuments, as well as accelerating erosion of the till. The proximity of an ord to Mappleton in the late 1980s raised fears that substantial areas of the village would be lost, leading to the eventual construction of sea defences in 1991. Such defences, however, have been shown to promote accelerated erosion at their southern end, and locally reduce the flow of sand and sediment which feeds and maintains the beach.

Since 1951, the erosion process has been monitored by the East Riding of Yorkshire Council and its predecessors in March and September of each year between Sewerby and Kilnsea using a series of 116 measuring posts (ERYC 2004). An average of around 150m of land has been lost since the production of the First Edition Ordnance Survey of the area in the 1850s, by comparison with modern maps, a process which appears to be accelerating. However, the process is uneven both over time and geographically, with some areas much less badly affected, while the loss in others averages just under 2m per annum. Average erosion in Holderness was already defined by the Ordnance Survey in 1889 as being 5ft 10in (1.78m), and was measured at 7ft (2.13m) at Mappleton (Bulmers

Directory 1892). The village of Great Cowden, part of Mappleton parish, has been lost since the First Edition was surveyed.

Around thirty towns and villages have been lost between the Humber and Bridlington since the medieval period, including the town of Ravenser Odd at the south end of Spurn (Plate 1), together with an unquantifiable number of sites of earlier periods. Other sites and features are routinely exposed, and are being eroded (Plate 15), including areas of submarine forest south of Tunstall and at Withernsea.

Spurn Point itself is formed by the constant deposition of sands and gravels from further north (around 144,000m^3 annually). It has shifted westward over a period of centuries, and was largely under water at high tide in the early 19th century; the headland is shown as a series of small islands on the First Edition Ordnance Survey of 1852 (De Boer 1988). It has subsequently been held artificially in its current position by the maintenance of sea defences. Despite this, a major breach occurred as recently as 1996, with further small breaches since, resulting in the loss of stretches of the only access road, necessitating constant repairs (which have themselves removed or altered areas of earlier 20th-century features forming part of Spurn's historic landscape). The reduction of sediment flow by the construction of sea defences, and possibly (although unproven) by the excavation of marine aggregates, is likely to accelerate erosion and the eventual disappearance of Spurn in its current form. This acceleration would increase if the policy of maintaining fixed sea defences is abandoned in favour of a more flexible approach, as seems likely.

Like most of the East Riding, Holderness was exploited since early prehistoric times despite its marginal nature for most of its history, with traces of Palaeolithic and Mesolithic activity, often centred around the meres and wetlands which characterised the area. Neolithic and Bronze Age settlers also made use of these environments, and traces of occupation survive in a number of places, including the foreshore at Easington. There are also extensive traces of Iron Age/Romano-British agricultural settlements, with a highly-developed pattern of fields, trackways, drainage ditches and enclosures. Many of the medieval villages which were founded in the area were located on slightly higher outcrops of sand and gravel lying above the alluvial plain, often linked by roads routed along ridges to avoid seasonal flooding as far as possible. Traces of extensive field systems still remain. A number of settlements, principally Bridlington, Hornsea and Withernsea, lie on the coast itself, and these towns, together with Mappleton, have been protected by sea defences. Most villages lie further back, the original row of medieval settlements bordering the sea and shore having been lost, as outlined earlier. The principal land-use is still agricultural, although grazing is much reduced. There are also a number of holiday camps and other leisure-related centres, particularly near the principal resorts. Spurn and Kilnsea contain an important concentration of World War 2 defensive installations (Plates 7, 8, 24–8), which are also a feature of the rest of the coast.

Grimsby to Donna Nook

Both North East Lincolnshire and Lincolnshire have a low relief with three-quarters of the land lying below 30m and much of this is close to current sea level. The form and nature of the outcropping geology has weathered to produce a characteristic landscape with some notable north–south trends.

The general landscape of the portion of North East Lincolnshire lying within the study area is typified by the low-lying topography resulting from the deposition of the various

estuarine and riverine derived alluviums over the glacial depositions (Skipsea Till) dating from the Tertiary period (Catt 1990, 21–3). These in turn overlie a solid geology of chalk laid down during the Upper Cretaceous period (Neal 1988, 1 *et seq*).

The landscape of Lincolnshire is dominated by two lines of hills consisting of relatively hard rocks which have been eroded more slowly; these are the mainly chalk Lincolnshire Wolds and the limestone Lincoln Edge and Heath. Between these uplands is a clay vale broadening southwards towards the peat- and silt-filled depression of the Fens, while to the west lies the Vale of Trent. To the east lies the Lincolnshire Marsh fringed by a sand-dune and salt marsh coastline. In the area around Donna Nook, there is some accretion, but the shoreline around Cleethorpes is showing signs of erosion, with periodic reductions in the level of the sand cover revealing shipwrecks and other features (Plates 30, 32–4) and damage to the underlying clay beds (Plate 31).

Historically, North East Lincolnshire/Lincolnshire included extensive tracts of sheep-grazed grassland, heath and fen. There was extensive clearance of woodland from Roman times and earlier, and by the 17th century the area of the county covered by woods and forests, as in many parts of the country, was greatly reduced. Many prehistoric settlements were established on the dry ground in the Lincolnshire Wolds, along the Fen Edge or Limestone Heath, or on fenland islands, while later village development was often along the springlines of the Limestone Heath or the Wolds. Here, with a ready supply of water, parishes grew up with a mixture of land of different types. Land on the lightest, most readily cultivated soils was used for crops nearest to villages, whilst cattle were grazed on pastures on the heavier, poorly drained land in the river valleys and sheep were grazed on the heaths and rough grassland.

Extensive grassland resulting from prehistoric and subsequent woodland clearance was grazed by sheep during the medieval period. Wool was a major component of the Lincolnshire economy at this time helping to provide the wealth necessary for the fine churches and the Cathedral built in the 12th to 14th centuries, and gave the leading families of the county political influence nationally.

Farming declined for a period from the late 14th century due to the depopulation brought about by the epidemics of the Black Death along with changes in the general pattern of rural settlement which left numerous deserted villages, remains of which are evident where preserved under permanent pasture today. The epidemics of the Black Death did, however, allow the periodic re-establishment of woodland. Signs of field boundaries on sites which were later considered not worth cultivating indicate past periods of intensive agricultural activity and at least local shortages of land for cropping. After a period of retrenchment, agriculture recovered during the 15th to 17th centuries. There was gradual development of farming and settlements.

Travellers of the late 17th and early 18th century described the great wastes of heathland in Lincolnshire, but this was set for change as new methods in agriculture opened up land for the development of new farms and estates and the Enclosure landscape was gradually established. In some areas the enclosures were not completed until well into the 19th century.

Small-scale mineral operations were carried out throughout the county from the medieval times onwards: clay pits for brick-making, sand pits for building, foundries or glass-works; marl, a calcareous clay, was worked for use in improving overly light soils, and

lime produced from chalk or limestone was used to improve clay soils; limestone for building stone. After workings finished, many sites provided uncultivated areas which developed wetland, grassland or woodland. Some of these remain today as important relics of habitats which were formerly much more extensive. Development continued throughout the 18th and 19th century as large drainage projects were undertaken, new sea walls were built to prevent flooding and large areas were reclaimed from the sea. The evidence for the successive sea banks for defence and reclamation can be seen through out the study area along with evidence for the once extensive salt industry. New settlements grew up throughout the Fens. Reclamation from the Wash continued up to the 1970s when the last areas of new land were brought into cultivation.

The highly effective development of the Fens led to the loss of all the extensive wetlands and grazing marshes in Lincolnshire, with the exception of the remaining coastal salt marshes. It is within these areas of coastal marsh that early archaeological sites will potentially survive in a good state of preservation.

2.5 Potential contribution of the project to the national inventory of coastal archaeology for England, and the need for action

The need to compile a record of coastal sites in the area has become more pressing in view of offshore dredging (1.2 million tonnes from the Humber area in 1992), and domestic, commercial and industrial development. The extent and effects of many of these categories will be covered by the *Seascapes* pilot projects, which provide a 'broad-brush' approach to man's usage of the maritime and littoral areas.

Fishing (both inshore and deep-sea) has always been a major industry along this coast, ranging in scale from small boats operating out of minor creeks and inlets and off the beach, for example at Flamborough, through smaller and medium-sized ports engaged in the coastal trade (*eg* Bridlington), to major ports engaged in deep-sea fishing and large-scale importation of foreign fish (*eg* Hull, *Ravenser* and Grimsby). As such, the coastal zone contains the remains of groynes, staithes, jetties, mooring posts, fish traps, shellfish tanks etc. Some of these may already appear as entries in the relevant HER; many other features will undoubtedly be entirely absent from any records, although combined archive- and fieldwork would be required for statistical analysis.

A relatively new industry along the coastal margin is represented by marine aggregate extraction: there are a number of active sites and applications for licences, particularly in the 'Humber Gateway' and Lincolnshire coast areas, which may have an effect on the rate of coastal erosion in the study area, and hence represent a potential threat to archaeology (as well as an actual threat to 'drowned' sites). There is still a degree of uncertainty regarding the movement of sediments in the area and the long-term effects of dredging, although the general framework is understood (HR Wallingford 2002). A high proportion of dredged gravel is in fact used for beach renewal to slow erosion, and conservationists suggest there may be a circular movement. Areas where such beach replenishment has occurred in the study area has been identified in the Lincolnshire *Seascapes* study to assist in filtering out potential contaminants (artefacts and ecofacts recovered from dredging), thereby avoiding creating misleading HER entries. Other coastal developments include the creation of wind farms, and increased interest in oil and gas prospection (linked to the construction of pipelines, surface-level facilities, and the creation of onshore storage caverns — near Aldbrough for example).

The importance of the area in national defence has led to the creation of chains of defensive structures of several periods, including World War 1 and 2 and Cold War installations (Spurn Point, Kilnsea, Ringborough, Cowden ranges). Despite their recent origin, many of these have already been lost to erosion and development, or are in imminent danger.

One of the great ironies in the assessment of the coastal zone is that it is the very factors which place the area most at risk which have shaped it.

Sea-level changes along the east coast have resulted in extensive post-glacial buried landscapes; several submerged forests have been identified, near Withernsea, for example, together with early archaeological sites. There is significant evidence relating to beach levels and accelerated erosion rates in Holderness down to Spurn Point.

While development can be controlled by legislation, the processes of erosion and weathering (natural and chemical) can only be ameliorated to some extent, and for finite periods, rather than halted, and they are therefore much more of a problem. In the East Riding, the rate of coastal erosion is being constantly monitored by the present local authority and its predecessors. It varies considerably, in part reflecting the geology of the areas at risk; however, up to 200m may have been lost at Filey since Roman times, whilst in Holderness the land loss has been even more dramatic. Between 1852 and 1952 the annual average erosion rate here was 1.2m, greater at some times (*eg* in the late 19th century) and in some areas (*eg* around Mappleton), resulting in an average annual loss of an area exceeding 7.2ha, although the severity varied along the whole stretch of the Holderness coastline. The long-term erosion rate in Holderness is predicted to increase to around 1.8m per annum, which it has already exceeded in some areas. This is a level previously reached in the 1880s, and probably not too different from that likely to have been current in the 14th/15th century, both times of increased storminess. Sheppard calculated that a strip of land *c* 4km wide had been lost from here since the Roman period (Sheppard 1912; Van de Noort & Davies 1993, 114): although this may be an overestimate: the harbour at Bridlington, for example, is in the same location as the medieval haven, and the effects of erosion would surely have been more severe with increasing distance southwards form Flamborough Head towards Spurn. A figure about half Shepherd's total would be acceptable based on current annual erosion rates, although this is still a very considerable area. There is therefore a good case for identifying land sites and natural features, such as the meres of Holderness, at risk from erosion and coastal development, both now and at least in the medium term (50–100 years).

The introduction of the National Heritage Act in 2002 has enabled English Heritage to assume responsibility for maritime archaeology up to a 12 nautical mile limit. The English Heritage Maritime Team has therefore been able to support a number of research projects and initiatives, as part of an ongoing recording programme. This includes the use of local sources, such as divers, fishermen, port registers and archives, all of which can provide much valuable information. *Seascapes*, which focuses on such sources in the study area forms an ideal complement to the current recording programme. English Heritage is ideally placed to co-ordinate projects related to the coastal and maritime areas through provision of advice and documentation. The enhanced record will contribute directly to better informed strategic and policy decisions at a national level, and to the development of methodologies for future enhancement of the National Monuments Record and local HERs.

2.6 Summary of previous work

- Private researchers have conducted limited and unsystematic investigations of shipwrecks in the area: these have tended to concentrate on wrecks of World Wars I and II, and on obvious secondary sources. It is understood, however, that there are current proposals by local divers to compile a wreck register for the area, and there is now a series of books covering the north-east and east coast from the mid 18th century to 2003 (*eg* Young 2001a, b, 2003a, b and several others). Most wrecks are in deep water, and hence fall within the remit of the *Seascapes* pilot projects, but a few lie in the intertidal zone.

- A 1997 study of features in the intertidal zone between Sutton-on-Sea and Mablethorpe involved the partial excavation of five wrecks of sailing ships, the discovery of the former existence of another two lost vessels, and the recording of various other archaeological features (Buglass 1997). As this area lies just to the south of the Humber estuary, it seems reasonable to suggest that some of these wrecks related to shipping coming to and going from the estuary, e.g. fishing boats from Grimsby and Hull. The fishing vessels were local to Mablethorpe and the two larger vessels had been beached to break up over the winter as alternative income for the locals (J. Buglass pers comm.).

- The Holderness coast was identified as a strong contender for a future National Mapping Programme project: a formal request for this to be considered as one of the next projects within the NMP was made to EH in May 1999. There are several factors that particularly favour the choice of Holderness for this programme. It has a very significant coastal element under threat (*c* 50kms + the Humber estuary); it is adjacent to completed mapped areas, notably the Yorkshire Wolds (Stoertz 1997); it has not seen significant AP mapping in the past, and therefore has a high potential to improve our understanding of the historic landscape over the region, particularly given the data available from the Humber Wetlands Project. The area has been deliberately targeted for aerial reconnaissance by the RCHME (now EH) over the last decade, with particularly good results in 1995 and 1996; and it is a clearly defined landscape block of a suitable size (*c* 50 OS quarter sheets).

- Desk-based assessments incorporating data from the NMR, local HERs, walkovers, aerial photography and other sources have been compiled for parts of the coast, including Spurn Point (Hall 2002) and Flamborough Head (Harrison 2000). Although these duplicate existing records to some extent, they may well incorporate information not currently on the HER/NMR databases. Recent storms and resulting repairwork on Spurn Point has removed some of the 20th-century military roadway on the peninsula shortly after the survey there was undertaken, while a recent collapse at Flamborough Head highlights the fragility even of rocky cliffs.

- The Fortress Study Group has investigated and recorded a large number of 20th-century defensive installations in the East Riding, and the results of much of this work have been incorporated into the Defence of Britain project, and through that, is also available through the NMR and on-line via ADS (Archaeology Data Service). This is timely, as sites, including the large batteries at Kilnsea and Ringbrough, have deteriorated rapidly in recent years, while other losses have

- Archaeological and palaeo-environmental fieldwork has been undertaken at various points in the coastal zone by archaeological units and other bodies, including the English Heritage-sponsored Humber Wetlands Project survey of Holderness (Van der Noort & Ellis 1995).

2.7 Location of existing core records

Relevant records are held by:

- The NMR, ULM (previously Cambridge University Collection of Air Photos), the Humber Archaeology Partnership (Hull and East Riding of Yorkshire SMR), North-East Lincolnshire Archaeology Service SMR, Lincolnshire SMR and Archives, North Yorkshire County Record Office, East Riding County Record Office, North-East Lincolnshire Record Office, the Humber Wetlands Project, the University of Hull, Hull City Museums and Galleries, Hull City Record Office, the Borthwick Institute, and Associated British Ports archives.

The coastal record of the National Maritime Museum photographic section holds a very large collection of early photographs of fishing ports and vessels, and nautical activities, some of which are likely to relate to this area. Other records which may be of interest are held by private researchers, commercial organisations and research bodies. The Receiver of Wreck holds details of wreck reports, and the Defence of Britain project and Fortress Study Group have data regarding military sites, which has been integrated into the NMR and included here.

2.8 Objectives

Clearly, monuments based along the littoral, such as sea defences, military sites, historic coastal settlements, harbours and fishing-related structures are all at risk, as are wrecks in close proximity to the shoreline, where they are vulnerable to storm damage, undermining, and the pounding action of waves. A Rapid Coastal Zone Assessment will give, often for the first time, an opportunity to look at classes of monument never looked at before, certainly in a modern archaeological sense, including those related to fishing, coastal industry etc. Also at risk are land-based monuments, which, although unconnected to the sea, find themselves on or near the coast as a result of cliff retreat. These include the same classes of monument which are present elsewhere in the region: past settlements, cemeteries, field systems, mills, moated sites etc.

The project is intended to:

- Provide new and enhanced records of coastal heritage assets for the National Monuments Record, the Humber SMR, the North-East Lincolnshire Archaeology Service SMR and Lincolnshire SMR, to a nationally agreed common minimum data standard, in order to permit an improved curatorial response to strategic coastal planning or management initiatives at local, regional and national level.

- Provide a factual basis for the initial curatorial response to individual applications

- Provide data which is compatible with the needs of other coastal managers, parallel coastal surveys, industry and researchers.

- Provide an overview of coastal change from the Late Upper Palaeolithic onwards.

- Provide a reliable map base for survey and consultation purposes.

- Assess and forecast the degree of threat to the coastal archaeological resource from natural processes and development, with regard to models of future coastal change presented in defra's *Futurecoast* study (Halcrow 2003) and Shoreline Management Plans.

- Identify and assess sites under actual or predicted threat, either from natural processes or from development.

- Provide a basis for developing management and research priorities, including contributions to a Yorkshire Regional Research Framework, in respect of sites and areas of potential with different levels of importance and under different levels of threat, based on:

    a. The identification of areas or sites meriting further survey or evaluation
    b. The identification of areas or sites requiring positive management action
    c. The identification of significant historic assets meriting consideration for protection by means of statutory designation (listing or scheduling)
    d. The identification of areas where heritage assets may be at high risk of damage or destruction
    e. The establishment of future research priorities for the coastal heritage

- Raise awareness of maritime archaeology in the North-East of England amongst archaeologists and specialists as well as the general public (for example by means of popular publications, seminars and day schools).

These objectives assist in fulfilling the stated published objectives for the Flamborough Headland, Spurn and North Yorkshire Heritage Coasts. They are also in line with those contained within the draft Regional Research Framework document (Paynton, Roskams & Whyman forthcoming and outlined in the English Heritage brief for Rapid Coastal Zone Assessment Surveys (English Heritage 2006a)

The heritage information provided by the RCZAS can be used directly to inform Defra's Shoreline and Estuary Management Programme to ensure appropriate protection, or mitigation of damage, to historic coastal assets.

2.9 Copyright and access

Copyright of new records created rests with EH, Humber Field Archaeology, and the appropriate HER to which they devolve, except where copyright is known to rest with a third party.

As with any Historic Environment Record, future public access to certain individual records may need to be restricted, subject to the terms of the Freedom of Information Act 2000, in order to respect the commercial interests of the body which has supplied the information. Each of the existing HERs held by the Local Authorities in this area will already have procedures for dealing with such cases.

3 METHODOLOGY

3.1 Introduction

For the purposes of this project, a Project Officer was assigned to each of cells 1 and 2. Information was obtained or identified from records currently held by:

- The National Monuments Record and other national databases.
- The local HERs/SMRs, including holdings not added to databases (donated information, collections, contractors' reports).
- Local museums.
- Local archives, record offices, study centres and libraries.
- Portable Antiquities Scheme.
- The Defence of Britain project.
- Local history societies and interest groups.
- Individuals who have made chance discoveries, such as beach walkers, or who hold private collections.
- Shoreline and Estuary Management Plans.
- *Futurecoast* (Halcrow 2003).
- Available studies on palaeogeography, coastal change and historic map regression (*eg* http://www.hull.ac.uk/coastalobs/general/erosionandflooding/index.html).
- Historic maps and charts, including digital versions where available.
- Subterranea Britannica on-line survey of the UK's Royal Observer Corps & UKWMO Monitoring Posts.

These records fall into the following main categories:

- Documented shipwrecks in the intertidal zone.
- Features of palaeoenvironmental interest, such as submerged forests.
- Archaeological and historical features located within the intertidal zone, or known through documentary or other sources to have been lost through coastal erosion.
- Archaeological and historical features within the coastal hinterland at short- to medium-term risk of damage through erosion or coastal development.
- Archaeological and historical features not at short- or medium-term risk, but which lie within the study area; in some instances these may provide a context for features categorised as at risk, or signpost examples of classes of features which may not be apparent in 'at risk' areas.
- Artefact records ('findspots') which may or may not be relevant to the locality.

3.2 Aerial photography and fieldwork

The aerial photographic study of such a large area has been completed to National Mapping Programme standard by a professional team with experience in analysis to this level. Most of the information provided by the NMP project exists in digital format, but the principal results, in the form of polygons, lines and point data, are included in the maps supplied with this project.

A limited walk-over (conditions survey) was undertaken, primarily to characterise the area, identify safe access points, examine the general condition of sectors of the coastline, and

visually assess sites considered at the highest risk levels. Sites whose state of preservation from existing records was uncertain were also checked.

Fieldwork, including a detailed walk-over survey and targeted evaluation techniques, such as fieldwalking, metal detecting, geophysical and ground survey, is intended to form part of a second phase of work; this will be the subject of a separate project design. Any work on the foreshore would be subject to rigorous safety procedures, including the production of a Risk Assessment based on existing best practice (*eg* those developed by Norfolk Archaeological Unit for the Norfolk Coastal Survey).

The data obtained during the course of this study is presented in the gazetteer of archaeological remains in tabulated format in Appendix 1 of this study; gazetteer numbers are also given at appropriate points in the text, which is arranged by parish (1–27). Additional published and unpublished sources are quoted in the report text and their details are noted in the bibliography. The combined results are shown on Figures 1–37.

3.3 Assessment of the risk to cultural heritage sites in the Study Area

In general, the effects of a development proposal will depend upon the adequate prior assessment of the significance of the archaeological sites and features which will potentially be affected and the degree of impact of the proposals. There are occasions when insufficient is known to make informed judgements and an assessment of risk is all that can be offered. In assessing the effects of the proposals upon cultural heritage resources, it is necessary to consider the importance of the resources, as well as the magnitude of impact. Professional judgement and a degree of flexibility need to be applied.

Importance is based on statutory designations (Scheduled Monuments, Listed Building grades) as well as on the following generally accepted criteria:

- Period
- Rarity
- Group Value
- Condition

The criteria set out in Annexe 4 of PPG 16, modified to take account of the whole range of site values, not just scheduled monuments, are used as a guide for judgements of importance used in cultural heritage studies. The following categories are used in this report (with codes used in the gazetteers):

- **National (A):** the highest status of cultural heritage site: e.g. scheduled monuments, listed buildings Grade I & II*, well-preserved historic landscapes;

- **(County)/Regional (B):** includes the bulk of cultural heritage sites with reasonable evidence of occupation, ritual, industry etc, listed buildings Grade II; reasonably preserved historic landscapes;

- **Local (C):** cultural heritage sites with some evidence of human activity, but in a fragmentary or poor state, buildings of local importance, dispersed elements of historic landscapes, such as cropmarks.

- **Unknown/Unimportant (N):** insufficient evidence or data to make an informed judgement of importance, where a building or site is considered to have no significance, or represents a monument known only from documentary sources with no specific identifiable location.

For the purposes of this Rapid Coastal Zone Assessment, the very large overall number of monuments, and the uncertain current condition of many, has required a simplified scheme of risk assessment, based on a judgement of the perceived threat from coastal erosion (as opposed to possible damage from redevelopment or the continued degradation caused by agricultural practices). The risk is categorised as 'Low', 'Medium' and 'High'.

- **High (1):** a site at imminent risk in less than 20 years, or which is being actively eroded.

- **Medium (2):** a site which may be at risk in the next 20–50 years.

- **Low (3):** a negligible risk to a site which is not at risk for at least 50 years (e.g. an inland site). Included are modern features of a temporary nature which are no longer extant, but may still survive below ground: examples include World War 2 minefields, weapons pits and other temporary earthworks.

- **Nil (N):** those sites already known to have been lost. These will include those eroded or destroyed, and modern temporary features. The category also includes casual finds, which are considered to have been removed and relocated to a place of safety

Note that the latter category shares the single code letter 'N' with sites of unknown importance or no significance. At this stage, the assignment of codes must be regarded as a rough guide; only further fieldwork will refine the individual gradings.

3.4 Assessment of impact on the cultural heritage resource

Impacts upon the cultural heritage resource are predominantly permanent adverse impacts resulting from the loss of elements of the resource base as a result of construction activities or natural action. There may occasionally be temporary reversible adverse impacts when a site or monument is affected by construction activities, or permanent adverse impacts when such monuments or their settings are affected by new development or erosion. In some cases, a well-designed development can result in permanent beneficial impacts where the setting of a historic building or landscape is enhanced, or the archaeological resource is preserved. In other cases, the effects of natural processes can be slowed or halted by remedial action, such as flood or erosion protection, perhaps attended by restoration works (e.g. repair of masonry, reconstruction of earthworks). The coastal zone can be said to be at risk from both natural and developmental factors.

Table 1 Outline of chronology from the Pleistocene to the present

Sub Era	Series		Stage	Time Period	Date	Period	Events
Quaternary	Holocene or Flandrian	Later Holocene	Post or Interglacial Period	Present	AD 2000	Anglo-Saxon arrival to present	The arrival of the Anglo-Saxons leads to the creation of most of the present settlements and the basis of the road network, with a farming system based on open fields and commons, which persists to the formation of the modern landscape following enclosure in the post-medieval period.
				2000BP	AD 410	Bronze Age to Roman Period	Bronze Age settlements and burial sites are widespread, with barrow cemeteries on the Wolds. By the Iron Age up to two-thirds of land is cleared of forests and the East Riding of Yorkshire is extensively settled. The Romans arrive in the region c AD 70, developing and extending the existing patterns of farming, and imposing some new settlements and roads on the landscape.
					2200BC	Late Neolithic	Many small settlements are created during the period, including areas around the meres and wetlands of Holderness.
					2500BC	Middle Neolithic	Continuation of land clearance around new settlements.
					2900BC	Early Neolithic	Early Neolithic ('Beaker') burial mounds and settlements spread across the East Riding onto the Wolds as farmers begin to clear forests and farm upland areas.
		Early Holocene		5000BP			
					4000BC	Late Mesolithic	Holderness area includes marshlands with numerous small lakes (meres). Worked flints and other artefacts suggest hunter gatherers are widespread throughout the East Riding, particularly in wetland areas and along coasts.
					6500BC	Early Mesolithic	5,500 BC climatic warming produces a rapid rise in sea level, raising sea levels by at least 75m. Flooding of English Channel and North Sea produces recognisable coastline and the process of boulder clay erosion began. 7,500 BC Climate similar to present day. Flora returns to UK but removal of larger herbivores by man during Palaeolithic times allows formation of forests. Hunter-gatherers and early settlers roam in the area of what is now the North Sea.
	Pleistocene or Ice Age	Late Devensian	Glacial	10500BP	10,000BC	Upper Palaeolithic	People start to return to UK after 15,000 BC, using land bridge with Europe. 13,000 BC Ice sheets gone from North England. 25,000 BC to 15,000 BC Ice sheets at their maximum Devensian extent. At about this time a two-tiered ice sheet deposits the bulk of the Holderness clays, the lower originating in SE Scotland and NE England and the upper from the Lake District. Glaciers continue formation of English Channel.
					30,000BC	Middle Palaeolithic	People retreat southwards as ice sheets advance.
		Early Devensian		50,000BP			
				70,000BP			
		Ipswichian	Interglacial		100,000BC	Lower Palaeolithic	Glacial erosion starts formation of English Channel during Wolstonian Ice Age. Earliest peoples in Britain arrive about 700,000 BC.
				135,000BP			
		Wolstonian	Glacial				
				330,000BP			
		Hoxnian	Interglacial		1,000,000BC		
				425,000BP			
		Anglian	Glacial				
				480,000BP			

4 ARCHAEOLOGICAL POTENTIAL OF THE STUDY AREA

Note: Maps 1–37 show the location of cultural heritage sites (gazetteer entries)

This section is arranged by civil parish, commencing in the north of the county and working southwards.

4.1 Bempton *(Maps 1, 2)*

Geology and topography

Bempton is the most northerly parish on the East Riding's coastline, occupying a position on the north side of Flamborough Head. The solid geology of the northern part of the parish consists of Upper Cretaceous Burnham Chalk, overlying Welton Chalk, together forming vertical cliffs c 90m in height. The chalk is capped with Quaternary chalky boulder clay, supporting a deep fine loamy soil (Burlingham 2 Soil Association). Erosion rates here are probably in the range 0–0.43m, which has been defined for Sub-cell 2a, Management Unit 1 (Flamborough/Sewerby).

Historical and archaeological summary

Prehistoric

Palaeolithic

No records of this date in area assessed.

Mesolithic

No records of this date in area assessed.

Neolithic

The Flamborough Head area is relatively rich in casual findspots of worked and unworked flints (debitage), representing a substantial Neolithic industry exploiting material extracted from the local till. Findspots in the area assessed include implements from near the northern cliff edge (BE7, 5, 11), the latter a chisel, not securely dated. Another findspot of scrapers near Metlow Hill (BE26) lies close to a later round barrow and two square barrows.

There has been little fieldwork in the northern part of the parish, and therefore no indication of contemporary occupation

Bronze Age

The principal features from this period represent a local funerary landscape, apparently including a group of four round barrows located 200m from the northern cliff edge (BE3), centred at TA 1715 7465, one of which remains visible as a mutilated mound, while the others are only visible on Knox's early 19th-century map; they do not appear on the slightly later 6" 1st Edition OS (1854). Buckden Dyke, a north–south entrenchment a little further to the east (BE4) is undated, and may even be Romano-British. The principal stretch runs between TA 1806 7439 and TA 1811 7470, although further stretches of

isolated ditch are visible from aerial photographs on a parallel alignment immediately to the west, and may continue southward for at least 2km across the headland; these may be more recent field boundaries. The northernmost 9m length of the Dyke is at threat from cliff collapse, although has been detached from the headland since at least 1950. The ditch was apparently associated with a round barrow and square barrow, presumably of Bronze Age and Iron Age date respectively.

At Metlow Hill is a scheduled round barrow (BE28) at TA 20235 72985, close to what appear to be two later square barrows. This is not threatened. Excavated between 1877 and 1889, the barrow was found to contain a stone circle or cist, containing the wood-lined grave of a 5–6 year old child. There were a number of gravegoods.

Iron Age

Two possible square barrows have been identified at Metlow Hill (BE27, 29). Other features in the area may be of Iron Age date, including the entrenchment noted above and a nearby square barrow (BE4).

Late Iron Age/Romano-British

Most of the undated enclosures and other groups of cropmarks noted in the area are likely to be of late Iron Age/Romano-British date, although some elements could be medieval or later. These include an enclosure and boundary ditches nearly 900m from the cliff edge at TA 18477 73691 (BE22), a group of ditches or field boundaries centred at TA 171 740 (BE12), and a rectangular enclosure and trackway at TA 2065 7265 (BE30).

Anglo-Saxon/Early Medieval

Although Bempton village itself is of Saxon or early medieval origin (*Bentone* DB), there are no records of this date in the area assessed.

Medieval

The medieval village lies 1km to the south of the study area boundary, but the remains of the outfields extend into the study area, with elements of medieval/post-medieval ridge-and-furrow formerly visible east of the village (BE31) and to the north (BE25). In common with most other monuments in this category in the East Riding, however, these remains appear to have been ploughed out since World War 2, almost certainly as a result of the extension of intensive arable farming during and after the war.

Post-medieval

In addition to the areas of ridge-and-furrow noted above, there are few post-medieval remains in the area, other than the pattern of roads and field boundaries, which represent the enclosure of the parish by parliamentary act in 1765. A beacon which was recorded on or near Standard Hill at TA 1925 7375 in 1829 (BE18) is presumably a late survivor of the coastal chain established during the Napoleonic Wars; several others exist in the neighbouring parishes, including Flamborough. Some sites do have antecedents, however, with beacons established in prominent coastal locations during the late 16th century.

Modern

Like many other coastal parishes, the cultural record of Bempton is dominated by features associated with World War 2, and to a lesser extent, the Cold War. As part of the coastal crust defences, Bempton (and Flamborough) were less vulnerable to sea assault than Holderness and Filey Bay because of their topographical location, and Bempton (unlike Flamborough) has no landing places at sea level. There are fewer monuments of the period than elsewhere in the county, therefore.

Two pillboxes are sited next to the cliff edge near the north end of Danes Dyke (BE24), presumably to prevent a crossing of the Dyke from the east. There was a tank target range at Hoddy Cows Farm at TA 1807 7384 (BE14) of which nothing remains; this indicates the importance of the Wolds as a wartime tank crew training area. Not far from this was an RAF Regiment ground/air live fire training range, with trolley mounted targets and a network of rails (BE6). West of this, and mainly located over the Bempton/Buckton parish boundary, was a complex of anti-glider landing obstacles, centred at TA 165 743 (BE8). It is likely that similar obstructions existed elsewhere, as a glider-borne landing would have been seen as one method of cutting off the headland, and perhaps targeting the radar station a little to the east at RAF Bempton.

RAF Bempton (BE23) was the principal wartime and post-war feature within the parish. Its post-war history meant that relatively large areas remain, although there has been deterioration and demolition in recent years. There are three separate sites. The first, on the northern cliff edge (BE10) was a three phase ROTOR period (1950s) site with Chain Home Extra Low (CHEL), Centimetric Early Warning (CEW) and Ground Control Intercept (GCI) radar arrays associated with an underground operations block. Later, a GCHQ intelligence gathering array was built on the site. Five hundred metres further inland, the 'Top Site' (BE15–23) was the original World War 2 Chain Home Low (CHL) and a later Chain Home extra Low (CHEL) radar station, containing air raid shelters, a guardhouse, and the remains of other structures. After being put on care-and-maintenance at the end of the war, the site was re-activated in 1949, as a satellite station for RAF Holmpton/Patrington (HM57) from 1964 until its closure in 1972. The site was disposed of in the early 1980s and remains in private hands. The third component part of RAF Bempton is the 'Domestic Site' which is situated to the north of the village of Bepton and is now a caravan site.

Discussion

The study area in Bempton parish includes some evidence for Neolithic activity, although this is artefactual rather than structural. Similarly, there are clear traces of a Bronze Age/Iron Age funerary landscape, but lack of excavations in the coastal 1km zone means that no occupation sites have been identified. The presence of a number of enclosures, trackways and field systems, probably mainly of late Iron Age/Romano-British date does, however, indicate the presence of agricultural settlements. This is also generally the case for the area of the parish beyond the 1km boundary. With the exception of the northern section of Buckden Dyke (BE4), none of the features can be considered to be at risk from coastal erosion, although with the exception of scheduled barrow BE28, there is slow degradation from agricultural and other sources: none of the other field monuments are specifically protected, and most have been ploughed flat.

For the medieval and post-medieval periods, traces of degraded field systems pre-dating the enclosure of 1765 remained until recently. These have now been largely ploughed out.

Of the modern structures identified, a number no longer remain, being of temporary wartime use only, including tank and RAF target ranges BE14 and BE6, as well as a weapons pit and trench BE2. The 'Top Site' at RAF Bempton (BE10) contains a number of interesting structures, which are deteriorating and increasingly unsafe.

4.2 Flamborough *(Maps 2–4)*

Geology and topography

Flamborough parish occupies the eastern tip of Flamborough Head. The solid geology of the southern part of the parish consists of Upper Cretaceous Flamborough Chalk, overlying an exposure of Burnham Chalk in the northern area. This in turn overlies Welton Chalk, which is chiefly only exposed vertically in the cliff faces. The chalk is capped with a thick mantle of Quaternary chalky boulder clay, supporting a deep fine loamy soil (Burlingham 2 Soil Association). The northern area is higher, c 90m OD, sloping down towards the south to below 50m OD. There are a number of access points to the beach, including North Landing and Thornwick Bay on the north side, Selwicks (Silex) Bay below the lighthouse at the tip, South Landing and Dykes End on the south side.

Erosion rates here are in the range 0–0.43m, which has been defined for Sub-cell 2a, Management Unit 1 (Flamborough/Sewerby).

Historical and archaeological summary

Prehistoric

Palaeolithic

No records of this date in area assessed.

Mesolithic

No records of this date in area assessed.

Neolithic

The large number of worked flint finds from the parish (e.g. FL143, and flint knapping sites FL156, 158, at South Landing, flints from fieldwalking around The Grange, FL37, Ringley Hills FL65, north of Beacon Hill, FL141 and elsewhere) suggest intensive activity during the Neolithic period, perhaps as a result of significant quantities of available flint. This may have been more readily available because of the ease of access to chalk exposures on the cliff and beach; the Burnham Chalk contains large tabular flint nodules, and is exposed, for example, in Silex Bay. Trade was occurring as well, with a basalt axe found at South Landing in 1975 (FL157), and an unprovenanced axe fragment from Great Langdale (FL79).

The popularity of the area is borne out by the fact that several occupation sites have been identified, with a particular focus in the small area between Dykes End and South Landing, including a site at Hartendale Gravel Pit, centred at TA 221 693 (FL152), and a little further east at TA 2235 6935 (FL146), where Neolithic to late Bronze Age pottery was found, and eastward again at Beacon Hill Quarry, where a Neolithic to Bronze Age site was found (FL151). A further possible site was found in association with flint production at South Landing (FL158).

The principal feature in the parish is Danes Dyke (FL36), the date of which is uncertain, but has been assigned in the past to the Neolithic or Bronze Age, partly on the basis of flints of those periods recovered during excavations in 1879. The Dyke runs for a little over 4km across the Headland, and varies in construction. Typically, it consists of a single bank constructed of chalk blocks and turves with a western ditch, but there are stretches with double and triple banks, some of which mark probably later alterations or entrances. The surviving bank reaches on average around 3m in height, 5.5m in places, and the ditch is at least 2m deep, 18m wide, but both were clearly more substantial in their original state.

Bronze Age

The Bronze Age is represented by a number of monuments, including a Neolithic to Bronze Age occupation site at Beacon Hill Quarry (FL151), excavated in 1950, which produced the rare remains of an oval beaker period building, 4.6m across, with contemporary pottery and traces of an extensive flint industry on the occupation horizon. Other artefacts were also present. Later Bronze Age pottery has also been found with Neolithic material at Hartendale (FL146).

Several barrows have been located, principally in the 19th century, and mainly no longer extant, near Ocean View Farmhouse, TA 2405 7055 (FL75), TA 2395 7035 (FL93), Cross Bow Hill, TA 24635 69945 (FL121), Sixpenny Hill, TA 2205 7185 (FL20), and at Metlow Hill (FL12) near a later square barrow. The example from Cross Bow Hill was examined by the then landowner in 1822, and contained a beaker burial; since then it has been progressively destroyed by ploughing, and was not considered worth scheduling when surveyed in 1997.

As already mentioned, Danes Dyke may be assignable to the Bronze Age; if earlier, it was almost certainly maintained during this period.

Iron Age

There are a number of undated prehistoric landscape features on the headland identified by aerial photography which may belong to the Iron Age or earlier. These are discussed in the next section. A square ditched barrow has been identified at Metlow Hill (FL13) close to a Bronze Age barrow. It appears to have been 7.6m across with a central pit.

Late Iron Age/Romano-British

A considerable number of cropmark features have been identified in Flamborough parish; most of these have not been identified, but are likely to be assignable to the late Iron Age/Romano-British period.

Two rectilinear enclosures, ditches and field boundaries have been identified at Wold Farm, centred around TA 2149 7252 (FL6); two further enclosures are located nearly 1km to the south (FL26), while 700m to the east is a further cluster of three enclosures (FL25), with a further enclosure and boundary ditch to the south-east, 400m from the north side of Flamborough village at TA 2243 7143 (FL33). On the cliff edge east of Dykes End are a group of enclosures and ditches centred around TA 2191 6929 (FL153), with a cluster of features consisting of a small circular enclosure, pit alignment and ditch to the north-east (FL133), just 200m from the south-west corner of the village.

Excavations at Flamborough Quarry in 1979 identified east–west ditches and possible Romano-British burials (FL138). Next to the cliff edge to the south-east, Beacon Hill, has been traditionally associated with the site of a 4th-century Roman signal station (FL150). Romano-British pottery has been found in the area, including Crambeck ware (FL148) and there were formerly several large stones which were thought to mark the remains of the station; the site was, however, the location of 16th- and 18th-/19th-century beacons, and there may have been some confusion with the various later structures. A position nearer the end of the headland would appear to have been more suitable for a signal station. From the general area near the cliff edge came a coin of Commodus (AD 175-92) (FL169).

A site identified as a promontory fort was excavated in 1980 at the precarious site of Briel Nook (FL21), on the northern side of the headland. A potentially similar site has been identified at Gull Nook, on the coast north of Wold Farm, including earthworks with ramparts at TA 21915 72815 (FL2), and a little inland at TA 21915 72705 (FL3) and TA 21945 72685 (FL4); the visible portions have all unfortunately been destroyed by ploughing. Undated ditches and enclosures have been located in other areas, including FL10, 29, 104, 110, 114, 118, 130, 131, 139, and in the village itself, parchmarks at TA 2295 7025 (FL99). South of Bempton Lane is what may be a trackway, extending westwards into Bempton, and crossing the line of Danes Dyke (FL43).

In addition, fieldwalking has revealed scatters of finds, particularly in the north-western part of the parish around Wold Farm (FL5, 24) and The Grange (FL40).

Anglo-Saxon/Early Medieval

There are no monuments definitely assigned to this period. The village itself is of Anglo-Saxon origin (*Flaneburg* DB).

In the northern part of the village, a large ditched enclosure was identified from 1941 aerial photographs. It is centred at TA 2282 7084 (FL47), with the north-eastern and north-western corners, and parts of the northern and western sides identified. The enclosure was at least 300m east–west, and extended southward into the village, being traceable for 200m. It does not appear on the 1st Edition OS, and is no longer extant, so the date of the feature and its purpose cannot be determined without ground investigation. There is a possibility that the structure may be early, perhaps Romano-British or Anglo-Scandinavian, which would explain its absence from later maps and its apparent indifference to, and lack of influence on, the modern road system. The location of the enclosure exactly halfway across the headland and opposite the midpoint of the Dyke suggest a strategic defensive function.

Medieval

The principal extant medieval structure, apart from the church of St Oswald (FL108), which is c 1100, but externally largely Victorian, is Flamborough Castle (FL94). The remains of this fortified manor house consist of three sides of a chalkstone tower, with the earthworks of a hall and outbuildings, and surrounding boundary features of crofts and tofts. There may have been a previous manor house on the site, at least as early as the late 12th century. A 13th-century watermill was located to the north (FL44).

At the south end of the village, earthworks to the east of Beacon Farm (FL129) represent the probable remains of a medieval/post-medieval hall, marked on the 1st Edition OS, and adjacent enclosures, perhaps representing gardens. The depressions representing three fishponds lie to the west at TA 2237 7011 (FL116). The sites of other medieval features of the village and surrounding area are now unknown, including a watermill, mentioned c 1260 (FL78), and two windmills, constructed by 1218 (FL163).

Elsewhere, several medieval monuments have been identified, including ridge-and-furrow of medieval/post-medieval date north of Flamborough village (FL34), in the South Landing area (FL137), and in the east of the parish (FL87, 128). The orientation of most of the earthworks matches that of the present fields, which suggests that while some may be of relatively recent date, areas of the four medieval open fields (FL162) may have been retained following enclosure. There are features of the present field system which support this hypothesis; some enclosure took place in the late medieval/early post-medieval period, and this is often a factor in fixing earlier elements.

The village had a haven of some sort by 1323 (FL161), when the king addressed orders to the keepers of the port, and there are further medieval references to it and to ships belonging to Flamborough. A pier or 'kay' is mentioned in Flamborough as early as 1400–01, when £40 was bequeathed by Robert Constable, lord of the manor, for its repair. Tradition suggests it was at South Landing; several clusters of chalk blocks and non-chalk stones remain on the foreshore, located at c TA 2325 6915, and may mark the position of the pier. The pier was destroyed and repaired in the 16th century, and destroyed again c 1569. Burleigh's map of c 1560 shows a north–south quay here, with an east–west quay further to the south-west. Although the 1570 lease renewal for the manor contained a clause regarding repair of the pier within four years, and there were plans to rebuild it in a better location with 8ft of water at the harbour mouth, there is no evidence that this was done.

Post-Medieval

There are several earthworks within the village which are likely to be of either medieval or earlier post-medieval date; these have been listed in the previous section, and include a large ditched enclosure of medieval or later date (FL47), the remains of a possible hall and related fishponds (FL129, 116). A double circle near the Castle Garth (FL92) may represent a well; the reduction in size of neighbouring gardens at some point left at least one post-medieval well in the field occupied by the Castle. Other former 16th-century features of the village include a postmill (FL109), a guildhall of the Guild of St Margaret, mentioned in 1566 until 1633 (FL81), two horsemills, one of them built in 1551 (FL80), and parish bakehouses (FL83), which have not been precisely located, but which were already in use by 1537; interestingly, in 1551 they are referred to as 'upheld by the ships belonging to the pier'.

Monuments from the later post-medieval period are chiefly related to buildings within the village which either still survive or were demolished recently; these are mainly unremarkable buildings of late post-medieval/early modern date (mid 18th to mid 19th century). A selection of the principal examples is included in the gazetteer. The most interesting from a structural point of view is the earlier Sunny Cottage/Ogle's Cottage (FL115) which incorporates cruck trusses and wattle-and-daub construction; this probably dates from the 17th century, and is a relatively rare survivor of the late 18th-/early 19th-century 'Great Rebuilding'. There may be traces of the Constable family's original 17th-century manor house (FL96) within the present building, although it was substantially rebuilt in the early 18th century and again in the 19th (FL97); this structure replaced the medieval hall at the Castle on the opposite side of Tower Street. A watching brief at 3 Tower St, in 2003 found the remains of two possible buildings of 15th- to 18th-century date (FL88) and a neo-classical corbel, possibly from the manor. Carr Farmhouse, West Street (FL107) is notable for its early 18th-century hearth-passage form. In the south-west of the village, there was formerly a spa well with an ornamented well head, built in 1753 (FL111). The village had a school as early as 1604, when schoolmasters are recorded, and a schoolhouse is recorded in the 18th and early 19th century (FL82); certainly in 1811 this was located in the east end of the north chancel aisle of the church, although this may not have been the case previously. It remained there until 1845.

Outside the village, the period is represented by a number of monuments, including ridge-and-furrow of post-medieval/medieval date identified from aerial photography, much of which is no longer extant. It includes areas listed earlier to the north of Flamborough village (FL34), in the South Landing area (FL137), and in the east of the parish (FL128). As already mentioned, there is considerable correspondence between the orientation of the ridges and the present fields, which implies retention of at least some of the layout following enclosure in 1767; some earlier enclosure had already taken place, which may account for this survival, as existing enclosed areas were normally simply incorporated into the new system by the surveyors. The 18th- and 19th-century farm complex at Beacon Farm on the southern outskirts of the present village (FL123, 127) was predated by an earlier structure, which incorporated a chalk well and stone, brick and chalk culvert (FL126). A barn at Ocean View Farm, TA 23885 70335 (FL95) is dated '1772' in a pattern of ventilation holes

The Old Lighthouse of 1674 (FL138) represents an interesting survival. Its current position over 300m inland means that it is not at risk from coastal erosion, but its fabric, which uses chalk rubble for the mass walling, requires careful monitoring.

The importance of the headland to the coastal defences at various times is reflected in the siting there of three beacons in 1588. One of these was located on Beacon Hill on the southern cliff in 1588 (FL150), although it was repaired in 1755 and replaced in the 19th century. A second 1588 beacon was located at the north end of Danes Dyke (FL1). The strategic value of Flamborough Head is also represented by the construction of a flag (semaphore) signal station near the present lighthouse in 1796 (FL84).

Modern

The modern period is dominated by WW2 defensive installations and buildings within the village, of which the principal examples are included in the gazetteer.

St Oswald's Church (FL108), was substantially rebuilt in the 19th century, and many of the village houses, public houses and other buildings date from this period. The earlier importance and availability of wind power is reflected in the number of mills located in the village. A windmill at the north-east corner of the village, was constructed c 1844 (FL45) replacing an earlier structure on the same site, with another to the west (FL44) built about four years later. A windmill was also located to the west of the village on Mill Hill, (FL109), replacing a 16th-century predecessor. An early 19th-century postmill was sited in the village south of North Mere (FL71).

Elsewhere on the headland, North and South Landing lifeboat stations were built in 1871 (FL15, 147 respectively). A fog signal station was built in 1859 at TA 25725 70685 (FL58). At Briel Nook, there is a 19th-century coastguard and signal station (FL18). The present lighthouse (FL66) and keepers' house with offices were built in 1806, with the tower raised in 1925.

Evidence for industry in the parish includes the site of a brickworks (FL41), and several limekilns producing lime for breaking clay soil and for the building industry (FL17, 19, 27, 132, 135, 140).

West of the lighthouse, centred at TA 2533 7038, was a possible World War 1 complex of buildings and tracks (FL89) on aerial photographs dated 1938. The World War 2 defences include several pillboxes at Thornwick Bay (FL9), Green Acre Caravan Park (FL73), Beacon Hill (FL159), Head Farm (FL90), at Thornwick Holiday Camp (FL30), and in the lighthouse area (FL42, 53, 61).

An army camp with associated buildings and trackways was identified north of the village, centred at TA 2324 7197 (FL16). West of the lighthouse was a searchlight emplacement with a trackway and pillbox at TA 2495 7049 (FL85), a second searchlight at TA 2478 7079 (FL50) serving two adjacent Operation Diver AA sites at TA 25385 70455 (FL86). Traces of features such as gun positions, magazines, generator hut, control posts, a pillbox and possible earlier radar station survive.

Concrete tank traps were strategically sited at both Thornwick Bay (FL8) and Dykes End (FL160), while South Landing was protected by tank traps, weapons pits and trenches (FL154).

Elsewhere, an observation post, buildings, tracks and possible pillbox were located south of the road to the lighthouse (FL91). The observation post, at TA 2443 7059, included an underground post-war ROC nuclear monitoring bunker, used between 1960–8. Near the cliff close to Beacon Hill was a bombing range marker (FL155). An air raid shelter at North Cliff Farm (FL49) was still in good condition in the 1990s.

Discussion

The major feature which may belong to the Neolithic/Bronze Age periods is, of course, Danes Dyke (FL36), which partly exploits a natural ravine leading to the southern beach, and crosses the headland to the north cliff, creating a defensible enclave to the east.

A ready access to flint exposures probably recommended Flamborough Head as a focus for activity in the prehistoric period, certainly as early as the Neolithic. There are many

findspots of flints and debitage attributable to this period, particularly in the western strip between the village and Danes Dyke. There is not currently any clear evidence for earlier exploitation of this resource, although further fieldwork may resolve this. The presence of Neolithic occupation sites in the Dykes End/South Landing/Beacon Hill area shows that the area was settled, even if only seasonally. Two of the sites, at Hartendale (FL146), and Beacon Hill (FL151) show apparent continuity into the late and early Bronze Age respectively. The topography of this part of the headland is more attractive than further north, with a slope down towards the south, and relatively sheltered and wooded. There is access to the foreshore at two points, which would have been important for fishing and the collection of shellfish, seaweed and other useful items. The local practice of collecting seagull eggs from the cliffs ('climming') may already have been practised in the area. Although within 200–300m of the cliff edge, these site are not at imminent risk.

Apart from the occupation sites noted in the previous section, Bronze Age activity is principally connected with the presence of several round barrows in two groupings, one between the village and lighthouse (FL75, 93, 121), and a second north-west of the village near Metlow Hill/Sixpenny Hill (FL12, 20). These are located on the higher ridge following the north side of the headland, continuing the pattern seen to the west in Bempton parish. A square barrow of presumed Iron Age date was also observed at Metlow Hill (FL13). Ploughing has destroyed most of these features above modern ground level.

A number of clusters of enclosures or fields of presumed later Iron Age/Romano-British date have been observed. Of these, FL153 at Dykes End lies next to the cliff and is therefore at some risk: the north-east to south-west alignment of these features is unusual, and may be determined by external factors which are no longer apparent, such as a change in the alignment of the cliff. The traditional site of a Roman signal station at Beacon Hill (FL150) has unfortunately been quarried away, but it is not, perhaps, the most logical place for such a site, unless it was augmented by a similar structure on the north cliff or at the east end of the headland, as was the case in the late 16th century.

A promontory fort at Briel Nook (FL21) is in a vulnerable position, but was excavated by John Dent in 1980. This may repay further investigation, as may a possible similar site further west at Gull Nook, where there are at least three enclosures with ramparts and ditches (FL2–4), none of which now survive above ground level.

Most of the evidence for the medieval period is concerned with the village, and hence not at risk from coastal erosion. As elsewhere, the once-extensive pattern of ridge-and-furrow representing the village open fields has been ploughed out, with destruction accelerating in the post-war period, so that little remains.

The village was built prior to the Norman Conquest, perhaps to a plan, commanding a radial pattern of roads leading to the principal access routes to the beach at North and South Landings and Selwicks Bay. The first two became home to a substantial fishing industry which has survived in much reduced form. A pier is mentioned at South Landing as early as 1400–01 (FL161), and traces may survive in the form of scatters of boulders. This would perhaps repay investigation, although a survey has already been undertaken between 1985–7 (Johnson 1988, 105–11). The presence of two quays on Burleigh's map of c 1560 suggests that the identification of the site is correct, even if the representation is idealised: it closely resembles the depiction of Bridlington harbour on the same map, with a long slightly curved eastern quay aligned north–south, protecting

the landing from easterly winds and tides, and a western east–west quay, enclosing the area. The depth of water outside the harbour is shown as 7 fathoms (12.74m).

A large ditched and banked enclosure identified from aerial photographs dated 1941 at the north end of the village has not previously been identified (FL47), and is of unknown date. Assuming that the various elements have been correctly identified and represent a single feature, its central position in relation to the headland and Danes Dyke imply that it could be of considerable significance, and may have had a local strategic defensive role. The fact that it neither respects nor influences the modern road pattern suggests that it is an early feature, perhaps pre-dating the village. It could potentially represent a Romano-British enclosure, possibly even a small fortified camp, although no contemporary artefacts have been found in the village. Alternatively it could be of early medieval date, perhaps a local response to Danish attacks in the 9th or 10th century, or conceivably, a Danish camp for overwintering forces. The north-eastern and north-western corners of the site were visible as earthworks in 1941, but have subsequently been ploughed out, although they seem to survive as faint soilmarks. The southern and central part of the site has now been built over, and it is clearly at risk from development.

The other principal structures in the village include the scheduled Flamborough Castle (FL94) and the much-altered church, neither at risk.

For the post-medieval period (to 1800), there are several structures within the village which are of interest, including Sunny Cottage/Ogle's Cottage (FL115), the site of a possible hall (FL129) with fishponds (FL116), and the manor (FL97) which may contain the remains of a 17th-century building. None of these are, however, at risk. Outside the village, the most important structure is the Old Lighthouse of 1674 (FL48). Although over 300m inland, its construction from chalk rubble and exposed location will cause problems in the long term.

Modern structures other than military installations are for the most part located in the village and on the various enclosure-period and post-enclosure farms scattered across the headland. Buildings purposely built near the cliff edge or on access roads leading to the beach include the two lifeboat stations (FL15, FL147), the coastguard station (FL18) and present lighthouse (FL66).

The evidence for military defensive works include anti-aircaft sites, reflecting the fact that Flamborough Head was used as a navigation marker for approaching enemy bomber streams. These include the two later Operation Diver batteries at the east end of the headland (FL86) and other ancillary buildings. The approaches to the headland from the beach, North and South Landings and Thornwick Bay, were well protected by pillboxes, tank traps and other structures. Possible World War 1 buildings are also recorded in the lighthouse area (FL89); army and yeomanry units were stationed along the coast in the early years of the war, although any invasion threat quickly receded after Jutland (1916) effectively led to the German High Seas Fleet being bottled up in port. Most of the remaining military structures are in reasonable condition, and not at immediate risk from erosion.

4.3 Bridlington *(Maps 4–7)*

Geology and topography

The present town spreads over a large area, with the parish extending from around 45m OD near Sewerby at the west end of Flamborough Head to c 10m OD near Hilderthorpe on the northern Holderness plain. Topographically, the Wolds extend westward inland from Flamborough/Sewerby, sweeping around towards the south-west, broadly along the line of the A166. They are, however, bisected by the east–west valley of the Gypsey Race, an occasional stream which reaches Rudston, before turning north towards Burton Fleming. The original coastline from the last interglacial (Ipswichian, between 116,000 and 128,000 years ago) is represented by a cliff extending inland from Sewerby and following the south edge of the Wolds as an escarpment, running on a line to the west of Driffield, Beverley and Cottingham, where it trends southward towards Ferriby.

The original settlement forming Bridlington proper, the 'Old Town', is located 600m inland on the gentle southern slope of the ridge, north of the stream at 20–25m OD. The second part of the medieval/post-medieval town is Bridlington Quay, located around the harbour at around 10m OD; the Gypsey Race enters Bridlington Bay in the harbour.

The underlying bedrock is Upper Cretaceous Flamborough Chalk, sealed by a mantle of chalky glacial till (boulder clay), glacial sands and gravels, with alluvium in the stream valley. At Sewerby, the original palaeo-beach is periodically exposed by cliff falls, where it emerges beneath the till.

The soil in the area is principally deep fine loam (Burlingham 2 Soil Association), although an east–west band of calcareous silt (Andover 2) extends into the town south of the Gypsey Race, the valley of which contains well-drained calcareous fine silt of the Coombe 1 Association.

Erosion rates for Sewerby cliff (Plates 9–11) are in the range 0–0.43m, which has been defined for Sub-cell 2a, Management Unit 1 (Flamborough/Sewerby). Bridlington, Management Unit 2, is almost entirely protected by coastal defences.

Historical and archaeological summary

Prehistoric

Palaeolithic

A Middle Palaeolithic flint core was found on the beach surface at Sewerby, near a set of new steps at TA 2035 6875 (BR54), suggesting the presence of a seasonal population exploiting local flints.

Mesolithic

A possible flint industry identified as Early Mesolithic to Late Bronze Age has been identified on Sewerby Golf Course (BR2). No other material of such an early date has been found in the search area, and it should perhaps be treated with caution until further examples have been found.

Neolithic

Artefactual evidence for the Neolithic period was more extensive. This includes fragments of two axes, one polished, from near Home Farm, Sewerby (BR37), a Late Neolithic/Early Bronze Age knapped flint core from the cliff edge at Sewerby Hall (BR54), several unstratified worked flints found during a watching brief at Martongate Primary School in 2003 (BR60), and an unfinished axe from the beach near Danes Dyke, found after a cliff fall in 1910 (BR27). A Mesolithic to Late Bronze Age flint industry at Sewerby Golf Course (BR2) has already been mentioned. As well as a general flint scatter, a posthole (possibly later) was found, together with an axe, knife and awl.

Several flint implements found at Danes Dyke House (BR13) in 1890, including an axe, scrapers and arrowheads, may belong to this period.

No structures of the period have been found.

Bronze Age

The Bronze Age is represented, as in Bempton and Flamborough, by the presence of several barrows. One of these, at Marton Hall (BR11) was examined by Mortimer in 1893, and contained a cremation and three inhumations, with two possible secondary inhumations and several gravegoods. The barrow was destroyed c 1963. A tumulus was recorded by the Ordnance Survey in the northern part of the modern town north of Marton Road at TA 1865 6875 (BR51), but no longer survived by 1950, and has now been built over. Another was located on the 1893 25" OS in Queen's Park (BR73): again no trace remains. A further mound or barrow was noted near Bridlington Quay at Beck Hill, (BR122) on a map of 1828, but is no longer extant. There are a number of further barrows outside the immediate study area, including two scheduled examples at Butt Hill (MHU482, MHU488), used in the medieval period as archery butts; a third possible barrow has very recently been found on the same site during a geophysical survey on behalf of Humber Field Archaeology (SMW2006).

A penannular bronze bracelet was found near Bridlington Quay in 1891 (BR161). A socketed axe was found in North Street (BR106) in 1932, at a depth of about 0.45m; a flanged axe (BR168) was also found, but the findspot not securely located. A Mesolithic to Late Bronze Age flint industry at Sewerby Golf Course (BR2) has already been mentioned.

Iron Age

There are a number of undated cropmarks in the study area which may belong to the Iron Age (dealt with in the next section), but few features or artefacts which are directly attributable. A building, pottery and animal bone were recorded on Sewerby Golf Course, near Danes Dyke Farm (BR29), with late prehistoric pottery, a pit and flint scraper a little further south (BR34), both findspots close to the line of a ditch identified by aerial photography (BR35); these may, however, be of later Iron Age date: see below. At Headlands Upper School, (BR64), a square barrow and field system have been located from aerial photographs in the western part of the school grounds.

In the town centre, a gold stater was found in Princess Street (BR166).

Late Iron Age/Romano-British

Included in this section, as in other parishes, are a number of undated prehistoric monuments, which are considered more likely to belong to the late Iron Age/Romano-British period than otherwise.

Bridlington was a focus for Romano-British settlement, located at the east end of a road from the fort at Malton (modern Woldgate). There was almost certainly a port in the angle between Flamborough Head and the north end of Holderness, at the point where the Gypsey Race entered Bridlington Bay, which was listed as *Gabrantuicorum Sinus*, a bay with many harbours, in Ptolemy's early 2nd-century Geography. The coastline has been eroded in the past two millennia, and the location of a port and related settlement are likely to lie 1–2 kilometres east of the present harbour. There are, however, still traces of settlement in the modern town and surrounding district, including a settlement outside the study area at Bessingby Hill, TA 1675 6675 (MHU527), excavated in 1949.

In the Sewerby area, on the cliff edge south of the village, the corner angle of a possible Roman camp was formerly noted (BR55), although it has now been lost to erosion; 200m further west at Sewerby Park, Romano-British pottery and a quern were recovered (BR53).

Between the village and Danes Dyke, an undated ditch 250m long and parallel to the cliff has been located 100m inland (BR31), close to finds of a building, pottery and animal bone (BR29), and a pit, pottery and flint scraper (BR34) mentioned above. Sherds of Romano-British greyware were found a little to the west (BR35). In the same area, ditches, pits and small-scale industrial activity, with Romano-British pottery and querns was recorded south of Pheasant Plantation (BR33). This complex of features and finds may be associated with a cluster of cropmarks 250m east of the ditch on the cliff edge overlooking Dykes End (BR20). This group consists of two large conjoined enclosures and several other ditches; identified by aerial photographic analysis and geophysical survey, areas of the monument were excavated in 1990. A ring ditch was located further north, to the east of Danes Dyke Farm (BR15).

At Headlands Upper School (BR64), as already mentioned, a field system and square barrow have been located in the school grounds, a Roman coin has been found in the same area (BR59).

In the town itself, a possible enclosure has been identified on a cricket ground immediately north of the Hull–Scarborough railway line at TA 1816 6717 (BR87). Traces of Roman occupation have been found near Bridlington Quay, (BR165), including an alleged coin hoard (BR151). A Roman urn was found in Prince Street (BR143), while a female skeleton with a bronze armlet were found a little further west in St Olinda Road (BR140). Further west is a stretch of bank and ditch (BR115), perhaps related to more extensive features located outside the study area to the north near the Gypsey Race (MHU554), although these may represent medieval toft boundaries.

In the Hilderthorpe area at the south end of Kingsgate (BR183) a large Romano-British calcite-gritted cooking pot has been found, although its precise provenance is unknown. To the west of here are two areas of cropmarks: centred at TA 164 750, and extending either side of the railway line, are a series of ditches and a multi-ditched enclosure

(BR181), while at TA 1645 6505 are further enclosures, field boundaries, tracks and ditches (BR189), extending southward into Carnaby. These have not been investigated.

Anglo-Saxon/Early Medieval

Archaeological evidence for the period in most of the area is extremely limited, and chiefly confined to casual finds, although Bridlington (BR77: *Bretlinton* DB) and its satellite villages, including Sewerby (BR46: *Siuuardbi* DB), Marton (MHU967: *Marton* DB), Hilderthorpe (BR180: *Hilgertorp* DB) and Wilsthorpe (now in Carnaby), were Anglo-Saxon foundations. East of Sewerby, however, is a scheduled early to middle Anglo-Saxon inhumation cemetery with pagan burials dating from the 5th/6th to the 7th century, centred around TA 20605 69155 (BR25). Gravegoods included spears, shields, brooches and beads. In the south of the cemetery were later conversion-period and Christian graves, dating to the 7th to mid 9th century.

A sherd of Anglo-Saxon pottery has been found in the centre of Sewerby village (BR38), and a coin of William I was recovered from a flower bed nearby (BR36). It is likely that any Anglo-Saxon/early medieval structures associated with what became Bridlington Quay have been lost to coastal erosion, but the period is in any case poorly represented in the archaeological record in the study area as a whole, due in large part to continual development in later periods on the same sites.

Medieval

The principal settlement was the present Old Town area, located outside the study area c 3km inland. This consisted principally of an east–west street with parallel back lanes linked by smaller streets. Near the centre was a market place, and at the east end, the church and precinct of the Augustinian Bridlington Priory (MHU1626), established in 1113, and dissolved in 1537, when large areas of the precinct and part of the church were demolished. The port and harbour of Bridlington (BR162) were granted to the Priory by King Stephen c 1135; this became the focus for Bridlington Quay, a separate settlement to the market town. The harbour consisted of a timber north and south pier by the 16th century, and may have covered a similar area to its medieval predecessor (Plate 2; see below), in which case the north pier would have been located immediately east of the present one, while the south pier was immediately south of Clough Hole. The waterfront itself was also presumably protected by revetments, probably of timber, although stone and brick were used elsewhere (eg Hull). Its construction would effectively have stopped further erosion of the quay area and fixed it in something close to its present location although the harbour was extensively remodelled in the 19th century.

In Bridlington Quay, there are few traces of the medieval settlement, although most of the present streets are likely to have been in place. A medieval to post-medieval occupation site was excavated at Beck Hill in 1990 (BR133). A possible defensive site has been suggested as existing in this area, largely based on the fact that Bridlington Quay was referred to between the 13th and early 16th centuries as *Castleburn* (BR126). To the north, outside the study area and east of the Priory/Old Town area, a large L-shaped fishpond known as the *Grete Pond* or *Long River* (MHU522) was constructed during the medieval period, largely within *Applegarthdale*, a ditched and embanked enclosure to the east of the Priory, containing the Priory orchard (applegarth) (BR76). Now infilled, the pond was in existence by the 1250s, slightly pre-dating Applegarthdale,

which was enclosed by the Priory c 1262. Part of the bank was found in the early 19th century to contain the base of an earlier wall.

Sewerby is an early medieval settlement, *Siuuardbi* in Domesday (BR46), principally laid out along a east–west street, terminating at the east end at the manor house, later Sewerby Hall and the north–south Church Lane. A chapel was constructed at the manor house by William de Sywardby c 1414 (BR61), presumably surviving at least until the Reformation. A deer park was also laid out near the manor house by 1377 (BR18), although nothing further is known; it was presumably absorbed by the present post-medieval park. An area of the village centred around TA 2025 6915 (BR26) may also have been demolished to make way for the later development, since there are references to later cottage foundations being disturbed in the area. Areas of medieval/post-medieval ridge-and-furrow have been recorded in the area north of Sewerby village (BR12); most of this is likely to be no longer extant. Elsewhere, any evidence for field systems has either been built over or survives as boundaries. Medieval pottery and traces of a building were also identified on the Sewerby cemetery site (BR25).

Near Marton DMV (which lies just outside the study area (MHU967) is a ditched and banked enclosure, which may be a fishpond associated with the site (BR5).

Hilderthorpe township, to the south of Bridlington, includes an area of earthworks protected by scheduling (BR180). These include traces of tofts, crofts and building platforms linked by a hollow way, with areas of ridge-and-furrow. A north-northwest to south-southeast orientated bank recognised from aerial photographs at Hilderthorpe School (BR177) may be assigned to this period, perhaps associated with the DMV, although several other linear features are likely to be post-medieval or modern. Close to the DMV, in Kingsgate, stonework and a skeleton were recovered during building works (BR184). Although undated, the stonework at least is likely to be related to the medieval site, possibly to the chapel (BR182).

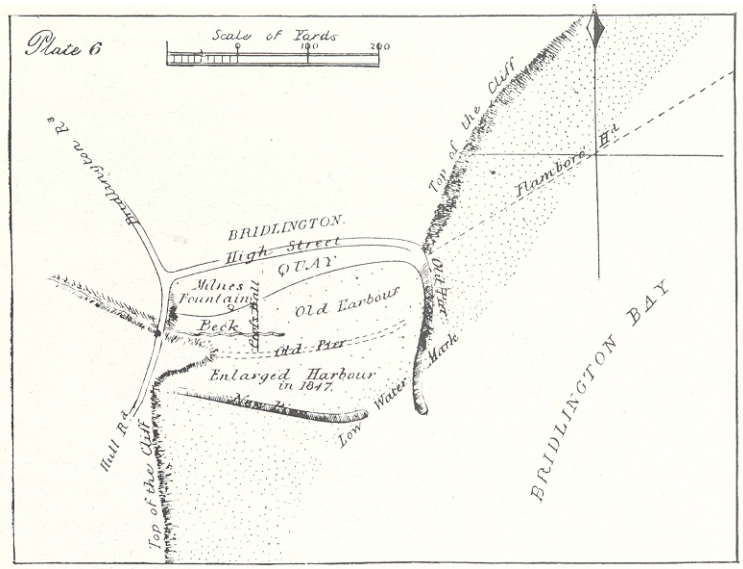

Plate 2 Bridlington harbour, 1855, showing the line of the old harbour piers

Post-Medieval

The post-medieval period saw the expansion of Bridlington Quay and the 'Old Town' area, which extended towards one another along Quay Road, but remained separate communities into the second half of the 19th century, with areas of enclosed agricultural land between, some of it already in existence before the passing of an Enclosure Act in 1769. This included former Priory land to the east of the Old Town. There were also areas of fields south of Bridlington in the Hilderthorpe area, although the farmhouses which once served them have been converted or demolished. The study area contains a considerable number of post-medieval buildings, particularly concentrated in Bridlington and Sewerby; the listed buildings and a selection of unlisted buildings are included in the Gazetteer, but are not discussed below unless of particular importance.

At the Quay, the harbour installations (BR162) consisted of stonefilled timber piers throughout the period, early versions of which were represented on Burleigh's map of c 1560, and are estimated to have been 58m (North Pier) and 18m (South Pier) in length. The North Pier was possibly to the east of the present structure, with the South Pier located south of the Gypsey Race exit point (Clough Hole). The piers were rebuilt several times, with the South Pier given new foundations in 1719–55 (Plate 2). The waterfront is likely to have been protected in the harbour area by timber revetments, although none have been identified archaeologically; the frontage of Bridlington Quay settlement was largely restricted to the area of the harbour, with little expansion to north and south until the late 18th century. The Gypsey Race entered the harbour in the north-west via *Clow Lock* (BR167), mention in the Town Constables' Accounts for 1668–9, which was presumably a sluice located at the Clough Hole (mouth of the beck), where there was also a bridge, Clow Bridge (BR174), mentioned in 1664 and 1681. The Gypsey Race gave the harbour the advantage that its fresh water flow kept the marine wood-boring gribble (*limnoria lignorum*) at bay.

An artillery fort was built north of the harbour by 1656 to protect the installations and town (BR102), possibly replacing a pre-Civil War battery; rebuilt several times, the fort was demolished by 1748. A further post-war battery may have been constructed on the modern Promenade to the south of the main fort and harbour (BR175). Fort Street, and Fort Hall, a house built c 1792, were named after the fort; the latter (BR114) was demolished in 1937. Located on the harbour frontage, Queen's House (BR169), also now demolished, was the brief refuge of Charles I's queen, Henrietta Maria in 1642. At the end of the period, the Central Methodist Church was built in 1795 as the first Methodist chapel in the town (BR128).

There were a number of mills in the town, falling within the study area. These include a windmill on the Quay (BR141), built by 1793, Bradley's Mill (BR164), and the late 16th-century Hilderthorpe Mill (BR163), still in existence in 1791. To the west of Bridlington Quay, a bridge is mentioned east of Bessingby (BR135) in the Town Constables' Accounts in 1648 and 1670, probably close to a modern bridge over the railway. At the north end of the town, west of Limekiln Lane was a large pond, 75 x 55m, visible on aerial photographs at TA 1916 6814 (BR68). This was identified as a fishpond, but may be related to the site of a known retting pond (flax pit) nearby (BR67).

At Marton, the Hall (BR8) dates from 1672, with 18th- and 19th-century alterations; it has been a private school since 1912. Marton Manor and farm buildings to the north were built in the late 18th century (BR3). There was a post mill at Marton (BR10). In Sewerby,

the medieval manor house was probably rebuilt in the 16th century, and replaced by a much grander structure in 1714 (BR32). Part of the earlier building was incorporated, including a still-extant doorway, in the Grade I listed house, which has been added to in the 19th century. Elements of the buildings and structures in the grounds have been separately listed, including balustrades, conservatory, archways, laundry, and gate lodges (see Gazetteer). There is also a walled garden (BR23) and a late 18th-century landscaped park (BR19).

Post-medieval or medieval ridge-and-furrow north of Sewerby has already been mentioned (BR12); the foundations of a post-medieval cottage were disturbed during the excavation of an electricity cable trench at TA 20095 68935 (BR39).

South of the town in Hilderthorpe, Flat Top Farm (BR179) was built as a summer residence (belvedere) for the Sykes family of Sledmere in 1776. The family, while visiting, occupied rooms on the first floor with views of the Bay (hence the term 'belvedere'), while a farmer used the ground floor as the farmhouse.

Modern

The modern period is dominated by buildings within the main urban centre and structures associated with World War 2. While listed buildings and important unlisted structures are included in the Gazetteer, they are not generally mentioned below. The enclosure-period fields in coastal portion of the Sewerby and Hilderthorpe areas were substantially modified in the 20th century with the addition of two golf courses, caravan parks and a camping site.

Bridlington reached its point of greatest expansion, with Bridlington Quay and Old Town being linked along Quay Road, followed by further infill. The construction of the North Promenade (Sea Wall Parade) and later South Promenade and rebuilding of the harbour in the 19th century allowed expansion along the seafront in the late 19th and early 20th century. The site of medieval Hilderthorpe was absorbed, while in the north-east, development almost reached Sewerby village and Marton. The construction of the Promenade also effectively fixed the position of the seafront. It included some reclamation of the foreshore, creating a flat terrace for pleasure gardens and new buildings such as the cast iron, glass and wood Floral Pavilion of c 1904 (BR136); representative of late 19th-/early 20th-century seaside architecture, it was listed in 1952 but delisted in 1993 and is effectively unprotected from future redevelopment.

At Bridlington Quay, the harbour was substantially rebuilt in the 19th century. The North Pier (BR171), was refaced at the beginning of the century, but was completely rebuilt a little further west in 1816–43, and extended in 1866. The South Pier (BR172) was constructed south of its earlier location in 1843–8, and extended in 1866. Langdale's Wharf was built in the harbour south of Clough Hole in 1889, close to the position of the original South Pier. The Fish Wharf at the east end of the pier was rebuilt in 1930, and an Inner Harbour was created with the construction of the Chicken Run Jetty at the end of Langdale's Wharf in 1950–1 and Crane Wharf Jetty next to North Pier in 1958–9.

In the town, among the principal buildings are the Town Hall, in neo William and Mary style, built in 1931–2 on Quay Road (BR104), and the railway station of 1846, rebuilt 1912 (BR109), serving the Hull to Scarborough line (BR188) which enters the town across open country in the south-west; there is a brick goods shed nearby (BR105), now

a warehouse. Lloyd's Hospital, Quay Road (BR91), began life as a converted early 19th-century villa, Medina Cottage (BR95). Entertainment was well catered for, with buildings like the Victoria Rooms of 1848, destroyed by fire 1933 (BR158), the Spa Royal Hall and Theatre of 1932 (BR173), the People's Palace of 1896 (BR113), the Regal Cinema of 1938 (BR116), and the Winter Gardens of 1921–2 (BR108). Among the town's notable hotels was the mid 19th-century Crown (BR88) and the Alexandra (BR83), built 1863–6, demolished 1975.

Together with the Church of the Holy Trinity on the Promenade (BR85) and Christ Church, Quay Road (BR98), the 19th century was a boom time for the construction of a considerable number of chapels by rival nonconformist groups, including the United Methodist Free Church chapel, Promenade (BR123), Union Chapel (Baptist & Independent), Manor Street, later the 'Manor House' (BR127), Trinity Congregationalist Church, Promenade, improbably originally built as a skating rink (BR118), and the Quay Methodist Church, Chapel Street, demolished 2004 (BR134), which replaced the earlier Central Methodist Church (BR128). The Catholics were represented by the Church of Our Lady and St Peter, Victoria Road (BR93).

A representative element of local industry was Medforth & Hutchinson's Bone Mill, 190 Hilderthorpe Road (BR129), Hilderthorpe Steam Mill (BR124), and Victoria Saw Mill (BR139). A stone quarry was located west of Station Road, immediately south of the railway line (BR120), and there was an old gravel pit near Quay Road (BR100). Mills included the Anti-Monopoly windmill (BR158), the Anti watermill (BR130), taken over by Medforths in the 1860s and run with the Spring windmill (later Lowson's) (BR119). By c 1825 there was a windmill on the promenade near an existing example on the Quay (BR142) and in Forty Foot Lane (BR75) by 1851, demolished 1867. There were further mills at TA 18695 67535 (BR74), and TA 18135 66865 (BR111). Limekilns were located in what became built up areas at TA 18875 67175 (BR86) and (three kilns) TA 19295 67935 (BR70). The town gasworks were built as early as 1833 north of Quay Road (BR97), moving elsewhere in 1937.

At Sewerby House, a classical portico was added to a now-demolished summerhouse in 1893 (BR21); the estate church of St John the Evangelist was built in the neo-Norman style in 1847–8 (BR30). Sewerby Grange, the former vicarage, was built in the Gothic style in 1865 (BR50). In the village, the Wesleyan Chapel of 1825 in Back Lane (BR61) was demolished after 1962 and replaced with a modern building. Sewerby School dates from 1849 (BR22). East of the village, limekilns existed in two locations next to Danes Dyke in Gellspring Lane (BR1) and Dyke Wood (BR17), with a brickworks and brickyard a little further west at Long Wood (BR9) and at TA 20665 69775 (BR7). A pinfold existed near Frith Lane (BR42). Marton Grange was built in the early 19th century (BR4).

South of the town, the 19th-century Hilderthorpe Hall (BR185), formerly Hilderthorpe Lodge, is now used as a golf club house.

A short-lived structure and three trackways of presumed wartime date have been located at the west end of Sewerby (BR58), running from Main Street to the top of the cliff. Directly below at the foot of the cliff on Sewerby Sands (BR65) is a World War 2 pillbox in poor condition. To the east in front of Sewerby Park was a possible gun emplacement (BR56). East of the village 100m north of the cliff at the golf course is a pillbox with blast wall (BR24), with another 200m inland covering the approach along Danes Dyke (BR16).

To the south-west of Sewerby on the cliff top at the edge of Bridlington were buildings, barbed wire and trenches, now removed, centred at TA 1939 6809 (BR69). These would have defended against any attack along the cliff from the direction of Sewerby. Along the North Marine Drive and Alexandra Promenade to the south were tank traps, road blocks, barbed wire obstructions, trenches and other defensive installations (BR81). These no longer remain. Several concrete cube road blocks were also sited at various points around the harbour, centred around TA 185 665 (BR170), and a tank trap protecting the slipway at South Sands (BR176). From this point southwards along the frontage of the South Promenade to Hilderthorpe were areas of zig-zag barbed wire above and below high water (BR186), covering a frontage of about 1.2km. At the south end of the wire and Promenade were several military structures (BR190), including an observation post, other buildings, trenches and a trackway running from Belvedere Parade. Immediately inland and south of Hilderthorpe DMV was an area of anti-glider landing obstructions (BR187).

In the town at TA 1736 6659 was a trench next to the railway track (BR155), presumably designed to intercept rail traffic if necessary.

Discussion

The general topography of the area has made Bridlington an attractive location for settlement, although recent urban development and past phases of coastal erosion have unfortunately covered over or removed most of the evidence for early occupation, while the construction of the Promenade and harbour facilities has effectively 'fossilised' the waterfront in its 19th-century position. As a result, it is the more rural Sewerby/Marton in the north of the study area within the parish which has proved both the most productive in terms of archaeological sites and the most at risk; Bridlington differs in this respect from the largely rural parishes to the north and south. In later periods, Flamborough Head provided a relatively sheltered haven for shipping — although still vulnerable to easterly and south-easterly gales — and the area around the mouth of Gypsey Race providing a good access point to fresh water and the sandy beach, which again would have been ideal for beaching vessels.

Local flints were readily available, although not of high quality, with evidence for Palaeolithic to Late Bronze Age industries in the Sewerby area, continuing a theme recorded in the neighbouring parishes of Flamborough and Bempton. There is little evidence for direct occupation during the earlier parts of this period, but the Bronze Age provided several important funerary monuments in the form of round barrows. Several of these, which survived to be mapped in the 19th century, no longer exist, including examples in Queen's Park (BR73) and north of Marton Road (BR51), but two others remain just outside the study area near the East Riding College (MHU482, MHU488). A barrow examined by Mortimer at Marton Hall (BR11) was destroyed as recently as c 1963. A few Bronze Age finds have been found in the town, including a bronze bracelet (BR161) and two axes (BR106, 168). As most of the findspots possibly represent casual losses rather than the immediate presence of occupation sites, and none of the surviving monument sites are located in actively eroding zones, there is no recognisable risk from natural sources.

For the Iron Age and Romano-British periods there are a number of features in close proximity to Sewerby Cliff. These include a building and 250m long ditch recorded on Sewerby Golf Course (BR29, 35), which are located within 100m of the cliff edge, a pit to

the south (BR34) within 50m, and a small-scale industrial/occupation site to the west (BR33). These could represent a small farmstead or settlement nucleus, with a field system (BR20) extending across the cliff edge at Dykes End to the east. Nearer the present village to the west, the last corner of a possible Roman camp (BR55) has already been lost; adjacent to this was the find of a quern and pottery (BR53). Clearly, there are potentially features along the entire cliff edge between Danes Dyke and Sewerby, just as there may be to the east of the Dyke in Flamborough parish. Part of the BR20 complex has already been excavated, in 1990 (EHU110), but further investigation of the area is recommended.

In the town itself, there is evidence for Romano-British and Iron Age occupation, including a square barrow and field system at Headlands Upper School (BR64), an enclosure north of the railway line (BR87), and traces of occupation near the harbour (BR165) and in St Olinda Road (BR140), where a female burial was found. There is also evidence from the Hilderthorpe area, including areas of enclosures, trackways and ditches (BR181, BR189). None of these can be considered at risk from coastal erosion, as they lie within the area protected by sea defences. Also, none represent installations associated with any Roman harbour which may have existed: any evidence related to maritime activities will have been lost prior to the construction of waterfronts and the harbour in the early medieval period. In summary, therefore, the Sewerby area is the only area considered at risk, as for earlier periods.

For the Anglo-Saxon to post-medieval periods, the principal features either lie some distance from the cliff edge (in the Sewerby area) or are protected by sea defences (Bridlington/Hilderthorpe). These include the Anglian cemetery at Sewerby (BR25) which is centred 300m from the cliff and the visible, preserved portion of Hilderthorpe DMV, which lies 100m behind South Promenade, although it extends eastward beneath present housing. Maritime features associated with these periods may survive behind the current 19th-century sea defences, which involved some reclamation, particularly in the harbour area, where the waterfront was protected from the medieval period onwards. Early piers, revetments and waterfront installations may well be preserved in the harbour and around Clough Hole, the entrance point of the Gypsey Race, although part of the latter area was infilled to create a car park in 1998–9. Langdale's Wharf may cover the remains of the original South Pier; the old North Pier lies to the west of its present successor.

The 19th and 20th centuries were the period of greatest urban expansion, and the seafront and harbour also reached their current form. Included in the monuments for the period are therefore the North and South Promenades, the North and South Piers, and associated harbour installations. Any substantial changes to the Promenades (recently extensively refurbished and reopened 1993–4 and 1998 respectively), and plans for a marina attached to the south side of the harbour pose a threat, particularly to the current waterfront in front of the Spa; some alterations to the South Pier may also be required if the marina scheme goes ahead. In addition, as mentioned above, part of the inner harbour in front of Clough Hole was infilled and converted to car parking in 1998–9.

The main 'at risk' category from the recent past are the remains of wartime installations. Most of the features listed in the gazetteer — trenches, weapon pits, roadblocks, barbed wire fences — were dismantled before the end of the war or shortly thereafter, and others have been removed by later development; those which remain are chiefly those in the Sewerby area. Most at risk here are the remains of a pillbox on Sewerby Sands

(BR65) which seems to have been linked originally to features on the clifftop. The survival of other features should be determined.

In summary, there is little of any period at risk from coastal erosion, with the exception of the stretch of cliff between Bridlington and Danes Dyke.

4.4 Carnaby *(Map 7)*

Geology and topography

Carnaby parish lies largely inland, with a narrow frontage to the sea. As elsewhere, the underlying geology is Upper Cretaceous Flamborough Chalk, overlain by boulder clay (till), followed in the study area by an area of glacial sands and gravels, with a rim of alluvium. The soil is a deep well drained coarse loam and sand (Wick 1 Soil Association), with fine loams (Holderness Soil Association) further west over the exposed boulder clay. Topographically, the area is relatively flat, averaging 10m OD.

Cliff erosion rates over the frontage in the area (Management Unit 3) vary between 0.04–1.56m per year according to the degree of exposure to waves, and generally increasing to the south with distance from the protection of Flamborough Head.

Historical and archaeological summary

Prehistoric

Palaeolithic

No records of this date in area assessed.

Mesolithic

No records of this date in area assessed.

Neolithic

The Neolithic period is represented by three unprovenanced stone axes found on Carnaby Moor, (CA3) and a fourth, of greenstone, from Wilsthorpe (CA4).

Bronze Age

No records of this date in area assessed.

Iron Age

There are a number of undated enclosures and other features, chiefly revealed by aerial photography: these are discussed in the next section.

Late Iron Age/Romano-British

Despite the small area of this parish within the study area, there are several concentrations of cropmarks.

In the north, centred at TA 1634 6494 is an area of ditched rectilinear enclosures, field boundaries, and double-ditched trackways (CA2), extending into Bridlington (BR189). Nine hundred metres further south (CA16) is a similar area of features, including circular, polygonal and possibly curvilinear enclosures and other ditch features, representing more than one phase of use. Three hundred metres further south on Carnaby Moor is a third area of boundary ditches and a circular enclosure, centred at TA 16445 63705 (CA25).

There is a more complex series of features in the north-west of the parish near Cliff Farm (CA6), extending to the eroding cliff edge, where there are a number of smaller circular and rectilinear features surrounded by a pattern of larger rectangular and square enclosures. Some of the smaller features could represent buildings. This could therefore mark the edge of a small settlement. A fragment of 4th-century 'signal station type' pottery was found on the beach near this point (CA11).

Anglo-Saxon/Early Medieval

Carnaby village itself is of Anglo-Saxon origin (*Cherendbi* DB), but lies 2.5km inland; the DMV site of Wilsthorpe (*Wiflestorp* DB), located on the cliff edge (CA15: see below), is also of similar date, and may well conceal early features. There are currently no monuments or finds of the period from the study area.

Medieval

Wilsthorpe DMV (CA15) consists of sunken trackways, fields, a pond, hollows, earthwork banks and ditches, marking the western and southern limits of a formerly more extensive settlement, now lost to the sea; part also lies below modern housing. A chapel is recorded there at the Dissolution, in 1538 (CA33). The village originally lay on the Auburn to Bridlington Road (CA36), which has now been lost, except, possibly for near Bridlington, where Belvedere Parade, Hilderthorpe, may follow its alignment. The stretch at Wilsthorpe is recorded in Bulmer's Directory (1892) as having gone within living memory. Some traces of medieval or post-medieval ridge-and-furrow have been identified from aerial photography in the vicinity of Wilsthorpe DMV, TA 168 641 (CA12), while banks to the west have been interpreted as boundary ditches for the settlement (CA14).

Post-Medieval

There is little of interest from this period. A section of an enclosure overlies Iron Age/Romano-British features at TA 1704 6429 (CA8). Possible post-medieval/medieval ridge-and-furrow near Wilsthorpe (CA12) has already been mentioned, predating the late18th-century enclosure of the parish fields. The study area is otherwise covered by the usual pattern of post-enclosure fields, farms and roads, dating from the late 18th century, and modified subsequently.

Modern

The principal 19th- and 20th-century features of the study area include the Hull to Scarborough railway (CA1). There is also a holiday village on the cliff at Wilsthorpe immediately south of a caravan park on the Bridlington side of the parish boundary.

As is the case in parishes to the south, Carnaby is dominated by features related to 20th-century military structures, some of which may be part of a World War I anti-invasion scheme which continues southwards into Barmston and Ulrome parishes (R. Thomas pers comm.) At the south end of the parish on South Sands were a weapons pit (CA32), a weapons pit and trenches (CA17), trackways (CA22), beach scaffolding (CA23) and two areas of concrete anti-tank cubes (CA21, 26). On Wilsthorpe Cliff above the Sands were a series of trenches, a possible building and barbed wire compound, centred at TA 1699 6366 (CA29), a pillbox and building at TA 1700 6335 (CA33), three possible military buildings at TA 1698 6329 (CA35), and a pillbox at TA 1707 6372 (CA24). There was a further pillbox to the south on Auburn Sands (CA34).

Inland were pillboxes north-east of Hill Farm (CA5), two south-west of Wilsthorpe (CA27, 28), and one at Cliff Farm (CA7). A trench and some undetermined platforms (possibly for temporary buildings) were superimposed on the remains of Wilsthorpe DMV (CA13).

Discussion

The area of Carnaby parish which falls in the study area is relatively small. The early prehistoric periods are poorly represented by casual findspots of four Neolithic axes, but there is good evidence for exploitation in the later Iron Age/Romano-British period, with several areas of cropmarks representing field systems, ditches and trackways. All four of these areas, CA2, A6, 16, 22, include small circular or rectangular features which may represent house locations, implying the presence of scattered farmsteads, each located within a pattern of small fields. One of these, CA6, is more regularly laid out, and could represent a later Roman settlement, rather than a late Iron Age/early Romano-British monument; a sherd of 'signal station type' ware was found on the beach immediately in front (CA11). This site is at risk, crossing the cliff edge, while the northern part extends under the neighbouring holiday camp.

Wilsthorpe DMV (CA15) consists of some well-preserved earthworks, but the site extends over the present cliff edge below modern buildings to the east of West Farm. The First Edition OS already shows the ditched approach road crossing the cliff. It is likely that the original nucleus, which may have included Anglian/earlier medieval features, has already been lost. The site is clearly at risk from further erosion, and from any potential reinstatement of houses on a line further back from the present alignment.

The post-medieval period includes little of interest; the heritage record for the latest period is overwhelmingly represented by World War 2 features; most have been removed, but several remain. These include several pillboxes inland and two near the cliff edge, CA33 and CA24, which are at risk.

4.5 Barmston *(Maps 7–9)*

Geology and topography

The geology and topography of Barmston is similar to that of Carnaby, but has a 4.6km sea frontage. The underlying geology is Upper Cretaceous Flamborough Chalk, overlain by boulder clay (till), followed in the coastal area by extensive glacial sands and gravels, with intervening areas of alluvium. The soil is a deep well drained coarse loam and sand

(Wick 1 Soil Association), with fine loams (Holderness Soil Association) further west over the exposed boulder clay.

At Trusey Bottom, TA 168 589, is a possible mere, although shallow, and perhaps of short duration, with Barmston Mere close by at TA 168 587 (van de Noort et al 1995, 78–9). The basin of the latter is open to the sea at Barmston Main Drain; the base of the peat here has been dated to 10720±110 BP, with wood samples 8300±70 BP, suggesting a period of early infilling. The area is now crossed by streams, which have been channelled, but the Earl's Dike and Barmston Main Drain both represent the approximate line of natural features, the latter draining the hollow formed by the silted Barmston Mere. There may also have been a shallow mere at Low Grounds, TA 161 461, which was drained when it was breached, leaving desiccated organic deposits and the present low cliff (Plate 12).

Topographically, the area is gently undulating, principally above 8m OD, with some high points, including Hamilton Hill (26m OD) and Trusey Hill (14m OD). There is a low cliff in most places, almost absent in Low Grounds.

The parish forms the southern part of Management Unit 3 and the northern part of Unit 4, which extends to Atwick. The significant cliff erosion rates over the frontage in the north reach 1.56m per year, increasing to a maximum 2.89m per year despite some localised attempts to halt it using rubble and World War 2 anti-tank blocks (Plates 13–15).

Historical and archaeological summary

Prehistoric

Palaeolithic

Several Upper Palaeolithic flint flakes have been found near Hamilton Hill in the surface of natural sands and gravels (BA174), although their exact provenance is unknown.

Mesolithic

Evidence for the Mesolithic period is limited to two findspots on Fraisthorpe Sands at the mouth of The Earl's Dike, of an elk antler (BA71) and a harpoon head from near the low tide mark (BA53).

Neolithic

This period is represented by a Neolithic or Bronze Age 26m diameter ditched enclosure, identified c 200m inland at South Field, TA 1693 5866 (BA163), and consisting of two concentric ditches with a central circular ditch. Several stone and flint axes have also been recovered from the parish as a whole (BA122), including a polished axe from outside the study area near Fraisthorpe (MHU8970). Occasional flint artefacts are among prehistoric assemblages recovered from various locations during fieldwalking by Humber Wetlands Project (see Gazetteer), but there are also several large late Neolithic to early Bronze Age assemblages from the Earl's Dike area.

Bronze Age

In addition to the Bronze Age/Neolithic concentric enclosure BA168, noted above, a Bronze Age site, originally thought to represent a lake settlement, has been found immediately to the east near the mouth of Barmston Main Drain during investigations in the 19th and 20th centuries (BA166). Features found during excavations in 1960–1 included traces of timber structures, yielding radiocarbon dates of 1523–816 cal BC and 1502–800 cal BC, with hearths, ovens, pits, postholes and cobbled surfaces; a socketed spearhead was also found, attached to a structural timber. A re-evaluation of the site in 1994 by Humber Wetlands Project (van de Noort et al 1995, 226–7, 349–52) suggested that the site was Middle Bronze Age, constructed on the edge of a mere which had already been largely infilled with peat, which was forming in the early Holocene, and continued to form until some time after 8590–8090 cal BC. There may have been some later peat growth and a second phase of late Bronze Age/Iron Age settlement activity.

Further north, three circular mounds of uncertain date have been identified over in a 450m line parallel to the cliff at Watermill Grounds, centred on TA 1682 6093, TA 1690 6107 and TA 1694 6065 (BA80). The most northerly has a central circular enclosure, the most southerly, which may now have been lost to erosion has a possible central pit. The features are large, 25–30m in diameter, and may represent burial mounds, on balance probably of earlier Bronze Age date. The northernmost barrow was close to the cliff edge when photographed in 1992, the central barrow was less than 100m from the cliff edge.

A middle Bronze Age looped spearhead (BA120), axe (BA121), dagger and spearhead (BA123), a flanged axe (BA175), early flat axes, a socketed axe and spearhead (BA178) have been found in the parish, although many are not closely provenanced. Several large assemblages of late Neolithic to early Bronze Age flints have been recovered during fieldwalking by HWP, principally from the Earl's Dike area (TA 166 616), alongside later material. Eight flakes of Bronze Age flint were found on the cliff at Sheep Walks in 1983 (BA151), and there are a number of other artefacts which are probably of this period.

Iron Age

As usual, there are a number of undated features which may date to the Iron Age or earlier, but are discussed in the next section. In addition to these, there is a group of 6–8 square barrows in a north–south line south of The Earl's Dike near Conygarth Hill centred on TA 1595 6125 (BA69), and a further 15m square barrow with a central pit to the east in Sheep Walks, TA 16485 61565 (BA51). In Low Grounds, three possible conjoined square barrows with central pits may be present at TA 1692 6060 among 3ha of possibly later Iron Age cropmarks of pits, field boundaries and trackways (BA85: see next section), in the area of the southernmost round barrow noted in the previous section. Similarly, a possible square barrow is present in Watermill Grounds at TA 1673 6137, among a complex of probably later Iron Age enclosures, boundaries, pits and trackways (BA70: see next section).

A late Bronze Age/early Iron Age 'lake settlement' has already been noted near the mouth of Barmston Main Drain (BA166). A ditch containing Iron Age pottery was recorded a little further north in the cliff face in South Field at TA 17185 58805 (BA153), with a second to the north at TA 17135 59185 (BA132) as recently as 1997.

Iron Age pottery has been found in association with a flint scatter (BA112) in an area of Iron Age/Romano-British settlement immediately north of Barmston Beach Caravan Park, suggesting the pottery may be of later Iron Age date. A Corieltauvian stater was also found on the beach in 1973 (BA173).

Late Iron Age/Romano-British

There are a considerable number of undated enclosures of probable prehistoric date, which are likely to be of later Iron Age/Romano-British date and are discussed here for convenience, while others are more closely attributable.

Near the northern parish boundary, north of Auburn Beck are cropmarks of fragmentary ditches and enclosures at TA 16705 63405 (BA1). A D-shaped ditched enclosure and related field boundary has been identified at TA 1669 5934 (BA128) east of Barmston village. Further north, field boundaries on several alignments are visible east of Conygarth Hill over a 4ha area (BA60). East of here on Sheep Walks are field boundary ditches and an enclosure (BA52), immediately east of an earlier square barrow (BA51 above).

South of The Earl's Dike at Watermill Grounds, are several centres of activity, representing an extensive former Iron Age/Romano-British landscape. The northernmost of these areas, centred around TA 1670 6125 (BA70) is an extensive area of enclosures, a pit alignment, field boundaries, ditches and a potential trackway, representing several phases of use near a possible square barrow (discussed above). To the south at TA 1685 6095 (BA79) is another area of boundaries, trackways, ditches and enclosures, one with a central pit, and south of that at TA 16855 60605 (BA85), pits, field boundaries and trackways associated with three possible earlier conjoined square barrows (discussed above).

Further south on Low Grounds, east of Hamiltonhill Farm is a smaller area of cropmarks including a rectilinear enclosure and field boundaries centred at TA 1682 6020 (BA99). There is also a linear ditch to the west of the farm (BA101), and cropmarks of enclosures and two possible rectangular huts (BA107).

To the north of Barmston Beach Caravan Park (BA105) is the cropmark of a double-ditched trackway c 100m in length, and a little further south at TA 16905 59605 (BA113), and extending to the cliff edge, is a possible settlement site, consisting of several phases of ditched enclosures, boundary ditches and trackways. Still further to the south in South Field is an undated ditched enclosure, centred at TA 16955 59205 (BA130).

Casual finds from the area include Roman coins and 4th-century Signal Station type pottery from Auburn Sands in the north of the parish (BA9), and a rim fragment from a wheel-made jar from near Horse Bridge, TA 1715 5865 (BA165). The neck and shoulder of a late 4th-century vessel was found on the beach (BA171), and presumably originated in the cliff nearby. From as early as 1571, a Roman coin hoard was found at Auburn (BA16), including issues dating from AD 69–161).

Anglo-Saxon/Early Medieval

Although Barmston is of Anglian or Anglo-Danish origin, appear in in Domesday as *Beneston* (misspelling of *Berneston*), as is the township of Fraisthorpe (*Frestintorp* DB,

immediately outside the study area, there is very little evidence for the early period in the parish. Hartburn and Auburn (*Eleburne* DB) townships were of similar antiquity, but have been lost to coastal erosion.

An excavation in 1982 revealed a Saxon burial along with later medieval/post-medieval structures, centred at TA 16305 58745 (BA154), in an area of a possible curvilinear ditch and earthwork enclosure, which could be of any date up to the 20th century.

Medieval

The medieval period is not particularly well represented, considering the number of former settlements in the area, although the modern post-enclosure field system retains the outline of some of the medieval open field furlongs in the former East and West Fields north and north-east of Barmston village, and South Field. Medieval or post-medieval ridge-and-furrow has been noted from aerial photography in this area either side of Barmston village (BA131), although most traces have now been removed. Further ridge-and-furrow existed in the north of the parish, west of Auburn at TA 168 625 (BA28). Barmston village itself (BA135) is built along an east–west road, Sands Lane, with a church and a former manor built at the west end, and a separate east end, although development has now filled the area between. The village buildings are entirely of post-medieval date with the exception of All Saints' Church, which has a 12th-century nave and font, with later additions and alterations. The main road through the parish, between Bridlington and Hull/Beverley, probably originally passed through the village to turn northward along the coast, passing through Hartburn and Auburn (BA126). This road, mentioned in a turnpike act of 1767, was, however, been abandoned, and no trace remains. Another early road from Lisset passed to the west of Barmston and turned east to Hartburn DMV. A side road turned north to Fraisthorpe, just outside the study area, where there was a windmill as early as the late 12th century (BA183). Part of this route was incorporated into a new main road passing west of Fraisthorpe and replacing the coast road. With the disappearance of Hartburn, only the first part of the road to the DMV is metalled to the Fraisthorpe turn, the remainder survives as an unmetalled track, Sands Road.

A medieval building was recorded in 1982 south of the village at TA 16305 58745 (BA154), in the area of a Saxon burial (discussed above), post-medieval building and undated landscape features; a little further east at TA 16715 59015 (BA145) is a square ditched platform of medieval or post-medieval date. The building and enclosure lie in the area of ridge-and-furrow already noted.

Casual finds from the site include a medieval coin from near Auburn village (BA14). A wall and pottery, undated, but possibly of medieval date, were also found nearby at TA 17021 62726 (BA18) and TA 1703 6280 (BA12) respectively, following a cliff fall in 2005. Auburn DMV, centred at c TA 16955 62735 (BA17) is mostly destroyed by erosion, although a section of street is apparently visible in the cliff face, and the remains of three small tofts enclosed by turf-covered banks and a possible croft are visible as earthworks, representing the west end of the original village. Traces of St Nicholas' Chapel (BA24) remain as a rectangular platform formed by debris, with fragments of coursed masonry on the south side. The chapel was demolished c 1731, and excavated before 1921 and again in 1948.

Further south, Hartburn DMV (BA67) was located near the mouth of The Earl's Dyke, but nothing now remains. It was probably abandoned in the 15th century, and the site is likely to lie some distance below low water mark at c 1715 6135. A watermill was listed at the lost site of Hartburn, in the area now known as Watermill Grounds, as early as 1292, probably on The Earl's Dike (BA61). A watermill and 'Watermill Close' are listed in the 16th century and again in 1697, and may be a later replacement, although may be associated with another mill further west on Cony Garth Close near present Conygarth Hill, probably next to earthworks located immediately outside the study area and south-east of Fraisthorpe.

Post-Medieval

The landscape of the parish reflects the 18th-century enclosure, although a considerable number of early closes existed by the 16th and 17th centuries, reaching 450 acres by 1739. Enclosure of North and East Fields occurred after 1759, followed substantially later in 1820 by the South Field and other areas. The remains of traces of ridge-and-furrow pre-dating the enclosure have already been mentioned. The early existence of many closes and the relatively early date for the enclosure of North and East Fields may be reflected in the retention of old field and furlong boundaries, reflecting the elongated 'S' shape of the selions, either side of the village (BA131). The impact of the enclosure can also be seen in the farmhouses built in the area, which include Manor Farm (BA138). This late 17th- or early 18th-century Grade II cross-passage village farmhouse was extensively rebuilt or upgraded in 1768 and again in 1800, at the same time as new farms were constructed outside the village. It may incorporate remnants of the old Elizabethan moated manorial hall of the Boynton family. The farm's mid to late 18th-century cattleshed (BA142) is separately listed. Also in the village is the Grade II listed rectory (BA149), now Barmston House. This late 17th- and early 18th-century structure was refronted in the later 18th century. The twin cottages, 'Red Roofs' and 'Pantiles' were created c 1958 from the single-storey village almshouses (BA142) constructed in 1726 as four dwellings with later alterations by Sir Griffith Boynton. Perhaps unusually, the village had a school and master's house as early as 1818 (BA176), built by Sir Francis Boynton.

Former monuments in the parish include the sites of three 1588 beacons (BA170); one of these may well have been on the site of a beacon constructed during the Napoleonic Wars c 1800, which stood on Hamilton Hill, until c 1850.

Finds from the area include a buckle, knife and ring from Auburn DMV area (BA14), found in 1993.

Modern

The coastal area has remained relatively undeveloped, with the surviving settlements of Barmston and Fraisthorpe set well back. As a result there are few post-1800 non-military features of interest in the study area apart from the site of a lifeboatman's house and lifeboat station, formerly located at the mouth of Barmston Main Drain (BA161). Built in the 19th century, it had closed in 1898.

As in the neighbouring parishes, the period is dominated by 20th-century military structures, some of which may form part of a World War 1 anti-invasion defence shceme which continues northwards and southwards into Carnaby and Ulrome parishes

respectively (R. Thomas pers comm). In the north of the parish, is a square building which may have been some kind of observation post (BA2), near a pillbox at TA 1705 6320 (BA4). The beach access and road at Auburn was defended by a mixture of features. These included two pillboxes at 100m intervals on the cliff to the north (BA6, 8); three pillboxes at 100m intervals were similarly sited on the cliff to the south (BA21, 26, 29). Two pillboxes protected the cliff south of here at TA 1690 6231 (BA30). The entrance to the road and Auburn Drain were protected by an anti-tank wall and twin machine-gun emplacements (BA11), pillboxes (BA10, 15, 19), while 300m inland at TA 1671 6317 is a pillbox, (BA3), formerly surrounded by trenches, with a second nearby (BA5). A further example is sited to the south, 400m inland at TA 1670 6277 (BA13), matched by one further south at TA 1672 6263 (BA22); a possible pillbox was also sited inland at TA 1658 6192 (BA35). Inland of Auburn was a complex of anti-glider trenches (BA68), extending over an area c 700m across; within this complex was a military base (BA25), consisting of buildings, weapons pits and an anti-aircraft battery. Immediately south of the Auburn road was a trench and barbed wire obstructions (BA23).

A little further south was a pillbox at TA 1692 6222 (BA31), while on Fraisthorpe Sands were two possible beach defence lights (BA32, 34), and a heavy machine gun pillbox (BA33). Southward beyond that were anti-tank defences, consisting of concrete cubes and a wall, centred at TA 1702 6161 (BA28), with a minefield extending along the beach (BA37), backed by barbed wire obstructions protecting a trackway on the cliff (BA36).

At Watermill Grounds, just south of The Earl's Dike is the site of a searchlight battery (BA72) which included several buildings, weapons pits and trenches; this is actively been eroded. A pillbox was located on the sands at TA 1696 6092 (BA81). There was also a gun emplacement 250m inland (BA76) and fortified farm buildings at TA 1681 6115 (BA73). Pillboxes are located south of the Dike (BA74, 75), and two more examples at TA 1689 6068 (BA84); a further pillbox is sited 300m inland (BA67). There were weapons pits at TA 1700 6077 (BA82), with possible buildings a little further south at TA 1702 6070 (BA83), a pillbox, buildings and other features at TA 170 605 (BA89), and a weapons pit at TA 1700 6014 (BA102). Inland to the north of Hamilton Hill is a pillbox (BA90), with a trench and trackway on the hill itself (BA100). The extent of the original barbed wire enclosure around BA90 suggests it may originally have enclosed other features, perhaps a temporary camp.

North of Barmston, 500m inland, were two weapons pits (BA109), with two pillboxes to the north-west (BA103, 104), and anti-glider trenches to the east (BA110), centred around a further pillbox (BA111). There was a pillbox to the north, 200m inland at TA 1674 6023 (BA94). Eastward 100m from the cliff, were two pillboxes and a trackway, (BA118); one of the pillboxes unusually dates to World War 1. The section of cliff in front at Low Grounds was fronted by barbed wire, a trench and trackway (BA106), and anti-tank cubes (BA108, 199, 129), while at what is now Barmston Beach Caravan Park (BA1127) was what appeared formerly to have been a military camp, possibly using some existing pre-war buildings, and a pillbox (BA125).

South-east of the village near Southfield Lane is a pillbox and two gun emplacements (BA152). On the cliff in this area were two more weapons pits, the site now lost, at TA 1729 5860 (BA167), with trenches and possible buildings at TA 1726 5872 (BA156). The mouth of Barmston Main Drain was protected by anti-tank cubes and a ditch (BA160, 1622), with a gun emplacement and trench at TA 1716 5873 (BA155) and possible camp 150m inland (BA164).

Discussion

Evidence for the Palaeolithic and Mesolithic periods is limited to casual findspots, although they do indicate occupation of the area as early as the Upper Palaeolithic. The subsequent periods are better represented. A Neolithic or Bronze Age concentric ditched enclosure (BA163) near The Earl's Dike represents early activity, and there are also three large circular features identified as possible ploughed-out burial mounds on Watermill Grounds (BA80); these are likely to be of early Bronze Age date if correctly interpreted. Two of the mounds are at risk, and may already have been partly or wholly lost to erosion. Several large assemblages of late Neolithic to early Bronze Age flints, as well as later material, indicate an important concentration of early activity inland along the line of the Earl's Dike.

A middle Bronze Age to early Iron Age occupation site next to the mouth of The Earl's Dike (BA166) has been interpreted as a settlement next to a former mere on the line later taken by the Dike. Such meres were characteristic of Holderness, but while some silted up, others would have drained away as the cliff eroded back to their outflow. This important area may include elements under threat of erosion; the desiccation of organic deposits was noted here by Humber Wetlands Project fieldworkers, but they recognised that there was still considerable remaining potential (van de Noort et al 1995, 351). Van de Noort recommended rehydration of the soil by limiting discharge to the drain, as the present water table is lower than the archaeological levels at risk.

The presence of several square barrows, including a group of six to eight examples near Conygarth Hill (BA69), one at Sheep Walks (BA51), three in Low Grounds (BA85), and a possible candidate in Watermill Grounds (BA70), indicate that there may have been several settlement nuclei during the middle Iron Age. This is borne out by the number of groups of cropmarks identified, mostly undated, but probably of later Iron Age/Romano-British date. These are distributed across most parts of the parish, with a particular concentration either side of The Earl's Dike, on Watermill Grounds and Sheep Walks. Several of these sites, such as BA79, BA107, and BA113 may represent small settlements or farmsteads dispersed across a landscape characterised by enclosures and fields, and linked by ditched trackways. Several of the sites are at risk of erosion, or are already being actively eroded, including BA70, BA79, and BA85 on Watermill Grounds, and BA113 at Barmston Beach Caravan Park.

For the medieval period, the only known monument at risk is Auburn DMV (BA17), where the remains of medieval tofts survive as earthworks, and the former main street appears in the cliff section. Most of the village has already been lost.

The modern period, with its emphasis on coastal crust defences, comprises a large class of 'at risk' monuments. Although a proportion of these were temporary structures, such as a minefield, barbed wire, trenches and weapons pits, there are a considerable number of 'hard' structures, particularly pillboxes, but including tank traps and other features, located on the cliff and beach. A number of these will already have been lost or severely damaged, while others have moved from their original location, and an audit of their current condition would be beneficial.

A potential threat to the area is a proposal by English Nature to create new habitats such as saltmarsh, coastal and floodplain grazing marshes and reedbeds in the northern part

of the area, and reedbeds around Barmston Drain in the south, through managed realignment

4.6 Ulrome *(Map 9)*

Geology and topography

The underlying geology for Ulrome parish is Upper Cretaceous Flamborough Chalk, overlain by boulder clay (till). Along the line of the northern boundary, marked by Barmston Main Drain is a band of alluvium, overlying an area of fluvioglacial sands and gravels near the coast. The soil is principally fine loam of the Holderness Soil Association, with an area of coarse loamy and sandy soil (Wick 1) near the Drain, sealing the underlying sand and gravel.

Topographically, some of the area lies below 5m OD, with areas above 10m OD, the highest point being 13m OD at the southern boundary with Skipsea, near Cliff House. The presence of several low-lying areas which occasionally flood (eg in 1946–7) may indicate the former existence one or more small post-glacial meres inland of the study area, but no traces of these survive; one of these was at Round Hill (c TA 161 560), and another near West Furze (c TA 1486 5670).

The parish forms part of Shoreline Management Unit 4; the cliffs are prone to rates of erosion between 0.43–2.89m per year.

Historical and archaeological summary

Prehistoric

Palaeolithic

No records of this date in area assessed.

Mesolithic

A number of largely undated flints were found during fieldwalking by the Humber Wetlands Project, but among them was a probable Mesolithic blade core (UL19).

Neolithic

No records of this date in area assessed, although flints of the period may be among those collected by HWP.

Bronze Age

Evidence for the Bronze Age from the study area included a pit, found near the southern parish boundary at TA 175 565 (UL62), containing pottery, animal bones and flints. The pottery had a coarse cord impression by way of decoration, typical of the Bronze Age. Two possible ploughed-out ditched round barrows are visible on aerial photographs near the southern boundary at TA 1678 5617 and TA 1680 5618 (UL67), with diameters of 14m and 10m.

Casual finds recorded from the study area comprise a small side-looped spearhead from the beach near Seaside Caravan Park (UL37) and several unprovenanced artefacts, including a winged bronze axe, two flanged axes, a socketed axe, a leaf-shaped spearhead and two looped versions (UL71). A discoidal scraper was among a number of largely undated flints recovered by HWP (UL14).

Outside the study area to the west was a Middle Bronze Age/Iron Age 'lake dwelling' at Round Hill (MHU3764), indicating activity in the general area of a former mere; there was also a centre of activity round another mere further west at West Furze.

Iron Age

There was little specifically representing the pre-Roman Iron Age from the area; a ditch of non-specific Iron Age date containing pottery and animal bone was located near Seaside Caravan Park (UL33), and an early Iron Age to Romano-British double ditch or two pits in section, with a coin and pottery, was located in the cliff nearby (UL41). A Coreltauvian gold stater was also recovered from the cliff in the same area (UL34). Taken together, these features and findspot imply the presence of an Iron Age settlement, continuing in occupation into the Romano-British period.

Late Iron Age/Romano-British

An Iron Age/Romano-British enclosure was recorded on aerial photographs just beyond the edge of the study area, but heading eastwards at TA 1639 5699 (UL51). In the area of a possibly contemporary double ditch (UL41, discussed above) at Seaside Caravan Park is a probable Romano-British pit and contemporary pottery (UL36). A bronze pin was recovered from the beach in the same area (UL39). To the south-east, a coin hoard was found on the beach (UL59), while to the north, a ditch and Romano-British pottery were recorded on the cliff at TA 1725 5825 (UL11). Two further groups of coins (unprovenanced) were found on the beach in the early 20th century (UL69) and in 1969 (UL70), respectively representing the periods from Allectus to Arcadius (AD 293–408) and Vespasian to Marcus Aurelius (AD 69–180).

Other Romano-British settlement activity has been identified 200m outside the study area (MHU3758), where a trench containing animal bone and pottery found in 1855 was interpreted as the vallum of a possible Roman camp; this was not identified by aerial photographic analysis, however.

Anglo-Saxon/Early Medieval

Although Ulrome was an Anglian foundation (*Ulfram*/*Ulreham* DB) no monuments or findspots were identified from this period in the study area.

Medieval

The village itself (UL57), is laid out along a single east–west street, Sand Lane, with twin centres at either end, each with a green; the west end was the most important, including the church and manor house. Medieval/post-medieval ditches, ponds and the remains of a croft, remain as earthworks within the village, representing the shrinkage of a formerly more extensive settlement.

Extensive areas of medieval/post-medieval ridge-and-furrow were formerly present either side of the village (UL54). These represent the remains of strip cultivation within the village's North and South Fields (originally East and West Field) prior to enclosure in 1767; most traces have now been lost, although some remain in South Field next to Sand Lane, east of the village. From south of the village, a ploughed-out moated site has been recorded at TA 1675 5645 (UL63). For much of its history, Ulrome was divided into two manors, and the moated site may have been the seat of one of these, the other possibly being on the site of the present manor house in the village.

From the collapse of part of the cliff in 2001, a 14th-century heart-shaped gold brooch was found near Seaside Caravan Park (UL42).

Post-Medieval

The presence of post-medieval/medieval ridge-and-furrow has already been discussed. Ulrome contains few buildings of interest from this period, and these, including the parish church (largely rebuilt in the 19th century), Manor House, and Old Joiner's Shop are outside the study area at the west end of the village. A small cottage adjoining Patriot Cottage (UL55) is probably of mid 18th-century date. It is probable that domestic buildings of the preceding period were constructed of very basic materials, and have consequently not survived: even the parsonage was described in 1764 as a cottage with clay walls and a thatched roof (UL68). There are no known structures along the present cliff edge at risk from coastal erosion.

Modern

Twentieth-century defences account for most of the monuments associated with this period, mostly of World War 2 date, but some perhaps forming part of a chain constructed during World War 1, extending north to Barmston (R. Thomas pers comm.). Other features include unlisted coastguard houses constructed at the end of Sand Lane (UL50) c 1890 to replace an earlier one to the east, built in 1829. The station closed c 1930, and the houses are in private ownership. They are currently a little inland, but there have been substantial cliff falls along the road to the south in 2006.

Defensive structures include three pillboxes at Brickdale in the north of the parish set 200m from the cliff, one at TA 1709 5816 (UL2) and two at TA 1709 5816 (UL11), with a nearby trackway. A gun emplacement was also recorded nearby (UL21). Anti-glider trenches (UL44) were constructed inland of these pillboxes, which acted as a backstop, Further north was a pillbox, trenches, trackways, a later building and weapons pit (UL3) and a pillbox on the beach (UL6). Trackways and barbed wire fencing were identified at TA 1725 5846 (UL5). Two minefields were located at TA 1731 5812 (UL12), anti-tank cubes at TA 1734 5844 (UL7), and military buildings at TA 1704 5826 (UL9). Crossing Barmston Main Drain, a bridge (UL1) appears to be a military structure, perhaps replacing a less substantial civilian bridge, as one appears close to this location on the First Edition OS (1854).

Further south at Criftings, the present Seaside Caravan Park, was a trench and barbed wire with a further possible pillbox on the cliff (UL40), a trench, trackway, possible gun emplacement, and later phase pillbox (UL38), and weapons pits (UL45). Anti-tank cubes had been constructed in the same area (UL43); located in the Park are pillboxes (UL46, 49), and the site of a 'Diver' AA battery, with its associated buildings and trackways

(UL47). This and other features in the area may have been manned from a camp located immediately south of Sand Lane (UL52). Inland to the north-west were anti-glider trenches, gun emplacements for field guns and possible weapons pits (UL44).

On the beach south of the Park was a further pillbox (UL48), with another, apparently fallen from the cliff (UL60).

In South Field, trenches, a pillbox and other features were located inland at TA 1742 5678 (NMR UL58), with a line of anti-glider trenches extending southwards (UL64). A pillbox was also located at the southern parish boundary (UL65), 300m inland.

Discussion

The earliest activity recorded in the parish includes the remains of two possible ploughed-out round barrows (UL67) and a pit (UL62). None of these features are at risk of erosion, but the presence of the pit, which was 350m from the cliff, could imply the presence of a settlement close to the risk area. The find of a spearhead (UL37) on the beach further north does suggest active erosion of Bronze Age features; there is further evidence for the period in the form of several casual finds of axe- and spearheads (UL71).

The Iron Age and Romano-British periods are better represented, and include a double ditch or twin pits (UL41) and a single ditch (UL33), all containing finds, including pottery, in the area of Seaside Caravan Park which were already being eroded at the time they were recorded. A pit and findspot of a bronze pin from this area suggest a possible settlement nucleus in the area of or beneath the Park. Another ditch containing pottery was found further north at Brickdales (UL10), possibly marking a further settlement or farmstead.

There is no evidence for significant features of medieval/post-medieval date which are likely to be at risk from coastal erosion; a gold brooch found near Seaside Caravan Park in 2001 is likely to have been a casual loss. Inland, a possible ploughed-out moated site (UL63) south of Ulrome village may repay future examination, as it is set in South Field, perhaps originally among demesne lands, and may have been abandoned early on, as it has not had any visible impact on local topography.

The modern period, as usual, includes a considerable number of monuments on or near the cliff, and on the beach, including pillboxes and anti-tank obstacles. There has been considerable erosion in recent years, including the well-publicised collapse of a 30m stretch of cliff in 2006, and a new survey of World War 2 monuments is required.

4.7 Skipsea *(Maps 9, 10)*

Geology and topography

The underlying geological formation is Upper Cretaceous Flamborough Chalk, overlain by boulder clay (glacial till). There are some deposits of fluvio-glacial sands and gravels, including pockets east of Cliff House and south and west of Skipsea village, with a more extensive band of overlying lacustrine deposits, which also passes west and south of the village, before turning eastward to reach the cliff at Withow Gap. The latter marks the position of a series of small silted-up post-glacial freshwater meres, including Low and

Skipsea Bail Meres (MHU20324), north-west and west of the village outside the study area at TA 149 566 and TA 158 558, and Skipsea Withow Mere (SK19) to the east, which has been largely lost to erosion (van de Noort et al 1995, 74–8). There is a SSSI at Withow Gap, a declivity in the cliff where the mere was connected at one time to a smaller lake inland, and perhaps eventually to the Bail Mere.

The meres, and others in Holderness, are thought to have formed in the Late Devensian (Dimlington Stadial), and remained as open water and marsh well into the Holocene. Bail Mere contained deposits ranging from the Late-glacial to the mid Holocene. The earliest organic lake deposits in Withow Mere, centred near c TA 182 546) have been dated to c 9880BP, by which time the lake level is estimated to have fallen to about 5–6m above the present beach following a dry period. The mere has been estimated as being c 1km in length as late as the medieval period, but erosion at the seaward end would either have quickly drained it or created a basin: the name of the village (from Anglo-Scandinavian *skip* (ship) +*saer* (lake) suggests that this was the case. Only the westernmost deposits survive in the cliff at Withow Gap. At the time of writing (March 2007) erosion has revealed further peat deposits and the remains of trees here.

The soil in the coastal area is principally fine loam of the Holderness Soil Association, with an area of Burlingham 2 fine loams under the village and extending west to Beeford. Fladbury 3 clayey, with fine silty and fine loamy soil infilling and broadly marking the area of the former meres.

The parish forms part of Shoreline Management Unit 4. The cliffs are prone to rates of erosion between 0.43–2.89m per year.

Historical and archaeological summary

Prehistoric

Palaeolithic

A Palaeolithic flint blade has been found in the area of a later lake settlement at Withow Gap (SK20). A barbed bone harpoon found with other material (SK29) could be of this period. This, and other material from the subsequent Mesolithic period, demonstrates that the area was attractive for nomadic hunter-gatherers before it was settled in the Neolithic.

Mesolithic

There have been several artefacts from the area of Withow Mere, including an undated, but quite possibly Mesolithic, bone spear point, from the vicinity of deer bones (SK29). A number of other finds from the area (SK17) included a barbed bone harpoon (possibly Palaeolithic) found in 1903 in lake bed silts lying below 1.5m of peat among bones of giant elk and other species, flints, some worked, including a blade and scraper, some possibly natural, found in 1923 on the foreshore, where lake bottom silts were exposed, with traces of overlying peat remaining, and others found a few years earlier, including an axe and point. Contemporary elk antlers have also been found (SK24). Some unprovenanced artefacts have been found in the parish, including an axe and core (SK5). Largely undated flints have been recovered from the area during fieldwalking by the Humber Wetlands Project (see Gazetteer).

Neolithic

The area of Withow Mere, centred at TA 1835 5465 (SK19) was an attractive location for settlement, and what has been interpreted as traces of a Neolithic lake village have been encountered near Withow Gap (SK20), at what would have been the west end of the mere, linking it to another smaller example inland. A pointed stake was found below lacustrine silts and 0.3m of densely-packed twigs and brushwood, overlying 1.2m of peat as early as 1894 (SK30). Wooden rods and stakes were found in reworked carr peats between 1978–84, one alder example was radiocarbon dated to the early Neolithic, 3771–3370 cal BC; these have been interpreted as the remains of trackways or platforms,. An *in-situ* alder rod and hazel peg were also recorded, with evidence of what appeared to be coppicing and axe or knife trimming. Disturbed timbers from eroded peat have also been recorded, and at the time of writing (March/April 2007) are clearly visible, following a period of recent rapid erosion on this part of the coatsline.

However, following an English Heritage excavation at Withow Gap (McAvoy 1995), there is some evidence from the patterns of cutting on two ash samples that a beaver dam may have been present at some time, which may lead to some re-interpretation of the site and an evaluation of the extent of human intervention as opposed to beaver activity, although the dam may have caused a constriction or 'logjam' between the main mere (now lost) and the smaller example inland, which was exploited by settlers. The peat apparently ceased to form after c 3363–2940 cal BC, perhaps as a result of increased siltation caused by deliberate deforestation around the lake margins; this was thought to have been due to preparation for agriculture, and perhaps also the thinning out of woodlands for coppicing. Further work is clearly required to clarify this: although there is desiccation of the upper levels, there is still good preservation of organic materials at lower level, although the area is below high tide level (van de Noort et al 1995, 352–3).

Bronze Age

A debased early Bronze Age beaker was recovered from near Withow Mere (SK28), and an unprovenanced looped spearhead has also been found (SK44). Traces of possible Bronze Age/Iron Age settlement remains were also found in 1994 (SK20). Assigned to this period are the remains of an aurochs horn (SK12) from Skipsea Cliff, north of Withow Gap.

Iron Age

There is nothing directly assignable to the Iron Age, although there may have been settlement near Withow Gap, continuing from the Bronze Age (SK20 above).

Late Iron Age/Romano-British

Unusually for the area, there is no conclusive evidence from the study area for later Iron Age/Romano-British activity. There are, however, undated monuments which may belong to these period. These comprise a possible ring ditch east of Skipsea Grange (SK37) in an area of later ridge-and-furrow, and a partly ploughed-out prominent bank, possibly flanked by ditches, to the north at TA 1795 5425 (SK35). This could be of any date up to modern.

Anglo-Saxon/Early Medieval

There are no early medieval remains from the study area. Cleeton (MHU3412), not to be confused with an area of Skipsea village of the same name, but lost to erosion during the later post-medieval period, and probably located south-east of Skipsea village near TA 1895 5425, was the main settlement of significance until the 11th/12th century. The manor continued to be named Cleeton (*Cletun* DB) rather than Skipsea. Skipsea was a later development, which became predominant, and was probably constructed after a substantial motte-and-bailey castle was built shortly after the Norman Conquest c 300m west of the village on an island in Skipsea Bail Mere, connected to the village by a causeway (MHU3403). The castle served as the main seat of the Aumale family, lords of Holderness, but was demolished in the 14th century, leaving the large mound still extant over an infilled mere.

Skipsea village (MHU8944) lies almost entirely outside the study area, while to the south-west, Skipsea Brough hamlet (MHU8943) was originally a planned village serving the castle. The name of the village is of Anglo-Scandinavian origin, first appearing c 1160 as *Skipse*, presumably a place where boats could moor on a lake. Some authorities believe this name relates to Skipsea Bail Mere, which is, however, landlocked, and it is perhaps more likely it refers to Withow Mere, which may have become a haven accessible from the seaward end as a result of continuing erosion.

Medieval

Skipsea village is laid out in local fashion along an east–west main street, with northern back lane, a church at the west end and a market green in the east. A separate ‘east end’ may have been located to the north-east of the village in the study area at East End Garths.

The south-eastern part of the parish around Out Leys (now a golf course) probably formed part of the open fields of Cleeton, represented by areas of medieval/post-medieval ridge-and-furrow (SK38). Further areas east and north-east of Skipsea village (SK6) mark the North and South Fields of the later village. No traces remain north and south of the village, where areas of carrland probably formed part of the village leys (pasture). Withow Mere (SK28) was an important fishery, together with Skipsea Mere, and is referred to in 1260 and 1341, but was probably little more than a seasonally-flooded hollow by the 16th century.

Post-Medieval

Apart from the areas of post-medieval/medieval ridge-and-furrow noted, there are no monuments or findspots of the period in the study area. The sites of three beacons recorded in 1588 are presumed lost (SK46). The landscape reflects the division of the area following enclosure in 1765, although many of the fields east of the village follow the alignment of ridge-and-furrow, implying that they retain the outlines of some of the open field furlongs, whereas those to north and south on the Carrs are more typical enclosure fields. Of the village farms, High (Cliff) House, Mill Farm, Smiddy's Farm, Southfield House, Skipsea Grange, Hill Farm, Grange Farm, and Far Grange (Clayton Hill Farm), had all been put up by the 1820s. The Grade II listed Skipsea Grange (SK39) is probably late 18th century.

Just outside the area, a windmill was sited north of the village in Mill Lane, TA 16955 55515 (SK4) as early as c 1550, replacing a medieval mill. There was still a mill on the site in the 19th century until its closure c 1895. Medieval and post-medieval pottery was found just outside the study area in the north-east of the village at Rosedale (SK10) during a watching brief in 2004.

Withow Mere was lost by this time, having been breached by coastal erosion, probably by the 17th century.

Modern

The present landscape of the parish reflects the post-enclosure layout. The most recent major changes are the construction of Skipsea Sands and Far Grange holiday camps, which includes a golf course at Out Leys, and which occupy sections of the cliff at the north and south ends of the parish. A brickworks was recorded south of Southfield Farm (SK32), opening in the early 19th century and probably closing in the 1870s.

Otherwise, the modern period is represented almost entirely by World War 2 coastal defences.

These include concrete anti-tank cubes (SK2) on the beach near the parish boundary with Ulrome, protecting a beach access point at Cobble Gap, with a series of anti-glider trenches immediately inland (SK1), continuing into Ulrome (UL63). Southward, there was an observation post on the cliff edge east of Skipsea (SK11) next to the road leading directly to the village. Adjacent to this was a pillbox (SK9), with a second-line pillbox 200m inland (SK13). Inland in this northern area was a pillbox, trackway, barbed wire, weapons pits and bomb craters (pre-July 1940) (SK3), with further bomb craters to the south (SK7), just missing a pillbox (SK8) located 150m from the cliff.

Inland of Withow Gap was a series of defensive structures including a minefield, barbed wire, anti-glider obstructions and weapons pits, centred around TA 1829 5453 (SK25). South of the defences were anti-tank cubes (SK34). Inland and immediately north of Southfield House, were second-line defences. South-east of the village, was a pillbox at TA 1767 5475 (SK16), which was superseded by a Diver AA site (SK15). There was also a post-war Royal Observer Corps underground monitoring post here, used from 1959–61, now a scheduled monument (SK14). It consists of a concrete bunker protected by an earth mound, with a single room reached via a shaft. It succeeded a wartime ground level VOP (visual observation post) that remained in use for aircraft spotting until 1963, following a period of closure after 1945. Pillboxes were located to the east (SK18) and south (SK33). South of here, a pillbox was sited east of Skipsea Grange (SK40).

Near the cliff edge at Out Leys was an RAF Air Gunnery and Bombing Range associated with No 2 (Coastal) Operational Training Unit (OTU) RAF Catfoss (SK41); the range shelter associated with a turret machine-gun range stands close to the cliff. Immediately inland of here (SK42) was an airfield, constructed in 1940 and part of a group of satellite sites under the control of RAF Driffield. It is unclear whether this was originally an operational field, since it was used as a decoy at least as early as December 1941 (see below): Driffield itself was used as a decoy between August 1940 and January 1940. Skipsea consisted of a grass landing strip, equipped with control tower, observation post, hardstandings, trackways and barbed wire. The presence of bomb craters reflects the fact that it had been attacked five times by April 1941. By the end of 1941 it had certainly

become a decoy airfield (KQ93(a)) for RAF Catfoss, with dummy aircraft: the code KQ indicates that it could be used during the day, and also at nightime, using electric lights to represent taxying aircraft, flare paths and runways, as well as buildings (using red 'obstruction lights'). Command and control bunkers, including generator facilities, wouold have been sited at a safe distance to protect the small permanent staff. Some decoy sites went on to be developed into active airfields, but Skipsea was abandoned in June 1942 and nothing now remains.

At the south end of the parish, a pillbox was constructed in what is now Far Grange Caravan Park (SK43).

Discussion

The presence of Withow Mere (SK19) strongly influenced the early history of the study area, despite the fact that only the western limit survives. There is clear evidence for exploitation of the Mere by hunter-gatherers occupied in fishing and fowling during the early Mesolithic period, and perhaps in the Palaeolithic, as well (SK17, 20, 29), no doubt as using plants which grow in and around wetland environments for food, clothing, basketry etc. The presence of animal bones, including elk, giant elk and deer (SK17, 24, 29) could suggest that they were prey species, attracted to the area by fresh water.

There is also evidence for the existence of a lakeside settlement during the Neolithic period, perhaps as early as 4770BP (SK20, 30). Interestingly, the peats within the lake seem to have ceased to form c 4500BP, and silts accumulated thereafter. A similar pattern has been recorded in other mere sequence, and it has been suggested as representing the increased run-off of silts from the surrounding land following deforestation as a prelude to the expansion of agriculture around the new settlements. Lake bottom sediment and traces of peat containing artefacts and ecofacts have been found on the foreshore at Withow Gap, with deep sediment sequences exposed in the cliff. Although much has been done in studying the Withow sequences (particularly Gilbertson 1984), further work could usefully be carried on in monitoring the exposures before the last traces of the Mere are eroded completely. This may help to determine further details of the settlement, and determine its duration (eg whether it continued into the Bronze Age or even later).

There are no known monuments of Iron Age/Romano-British to post-medieval date which are at risk, although a programme of fieldwalking should be carried out on the long undeveloped cliff exposure, which is rapidly eroding at present. The area is at risk from both wave action and aerial erosion: the latter is exacerbated by periods of alternating heavy rainfall and drought, which may have triggered a 30m cliff fall in 2006 between Ulrome and Skipsea.

This stretch of coastline seems to have been defended largely by temporary defences during World War 2 (minefields, barbed wire etc), and there were relatively few 'hard' defences along the cliff edge, perhaps reflecting the limited number of access points for an invasion force. Those that remain are at great risk from cliff falls; with a number of monuments probably already lost or severely damaged. Inland, the site of an airfield, later a bombing decoy (SK42) was abandoned in 1942, and is now the site of a golf course.

On balance, Withow Gap is by far the most important area of concern, but presents a good opportunity for further research into the early prehistoric periods and post-glacial environment generally.

4.8 Atwick *(Maps 10, 11)*

Geology and topography

The underlying solid geology is Upper Cretaceous Flamborough Chalk, overlain by boulder clay and some areas of lacustrine deposits north and west of the village, probably representing the sites of former meres. The soils in the area are principally fine loamy silts of the Holderness Soil Association, with an area of Fladbury 3 alluvium west of the village in the area of a large silted mere, Atwick Mask, which was centred at TA 180 509. Extending across the northern parish boundary from Skipsea are fine loamy silts of the Burlingham 2 Soil Association.

Topographically, the area lies between c 15–20m OD, lower to the west of the village. The cliff reaches 22m OD at Moor Hill near Low Skirlington. In addition to Atwick Mask, there were several other probable meres, including an example centred north-east of the village next to the present cliff at TA 191 513, and another possible mere south-east of the village at TA 189 502. Coring of the sedimentary sequences of the first two revealed mainly minerogenic deposits, with some organic components; the meres were probably infilled during the Late-glacial period, remaining as poorly-drained, seasonally-flooded areas into the Holocene (van de Noort et al 1995, 69).

The parish forms part of Shoreline Management Unit 4. The cliffs are prone to rates of erosion between 0.43–2.89m per year.

Historical and archaeological summary

Prehistoric

Palaeolithic

No records of this date in area assessed, although mammoth teeth and other animal bones have been recovered from an unprovenanced site, quite probably on the beach or cliff (AT70).

Mesolithic

No records of this date in area assessed.

Neolithic

A number of Neolithic artefacts have been found in the parish, although their exact provenance is unclear. These include stone axes, axe hammers and ploughstones, now in Sheffield Museum (AT54).

Bronze Age

An unprovenanced middle Bronze Age looped spearhead from Atwick is now in the Yorkshire Museum (AT55). An early Bronze Age Migdale-type flat axehead was also found in the parish (AT67). A stone axe hammer, datable to c 1650–1250 BC, was also found (AT61).

Iron Age

A number of structures identified as of Iron Age date have been identified; some of these may belong to the later period, but none have been examined. They include a series of pits revealed in the cliff near TA 195 515 (AT20). An Iron Age occupation site, with cremations, artefacts and iron slag, was found in the western part of Atwick village at Virginia Lodge in 1899 (AT36). Interestingly, there is an area of enclosures in and around the western part of the village, some of which are undoubtedly medieval, but others may be older (AT50). A ditched enclosure has been identified in the north near Low Skirlington (AT5).

A gold stater of the Corieltauvi was recovered from an unprovenanced site in the early 20th century (AT56), and two more examples from Atwick beach (AT69).

Late Iron Age/Romano-British

Some of the features identified as Iron Age in the previous section may belong to the later transitional phase, including the smelting site at Virginia Lodge (AT36) and enclosure at Low Skirlington (AT5); further examination of the sites and any surviving artefacts from the former would be required to determine this. An unprovenanced denarius of Vespasian (AD 69–79) was found on the beach in 1964 (AT71), and a 2nd-century silver trumpet brooch in the 1970s (AT64).

Anglo-Saxon/Early Medieval

No monuments or findspots of this period have been identified in the study area. Atwick is, however, an Anglian placename, although the village itself is not recorded until the 12th century, as *Attingwik*. The parish includes the hamlet of Skirlington in the north, also an Anglian name; this site now exists only as two farms, but unlike Atwick is mentioned in Domesday as *Schereltun(e)*.

Medieval

The village (AT33) has the typical layout for the area, consisting of an east–west street, in this case perhaps determined by the course of a stream which passes through the site. Cross-lanes connect the main street to north and back lanes. The village is bisected by the Hornsea to Skipsea road, and there is an irregular green at the intersection with a surviving 3m medieval cross shaft, now a Scheduled Ancient Monument (AT35). The medieval church is located at the west end (AT45) and until the construction of modern housing, was fairly isolated, although a pond – 'Holy Well' – of presumed medieval origin is located nearby (AT52). The church, originally dedicated to St Peter, had been rededicated to St Lawrence by 1461, and originally consisted of a chancel, nave with south porch, and tower, rebuilt and extended in the 19th century. However, the presence of a series of earthworks at this end of Atwick (AT50) reflects shrinkage of a formerly

thriving settlement. The earthworks consist of house platforms, field boundaries, ditches, banks and a ditched enclosure; some of these may be post-medieval, or in the case of boundaries to the north, possibly Iron Age, since settlement activity of that date was recorded near Virginia Lodge in 1899 (AT36).

The other principal medieval habitation site in the parish is at High Skirlington, although it had already been reduced to a single messuage by the late 17th century. Cropmarks show a small settlement here with a rectangular layout (AT8).

Outside the settlements, North Field, Lord's Field and an area of rough pasture, Mask, lay to the north of Atwick, and South Field directly to the south. There was a small pasture, Criftins, to the east between the village and the sea. The arable fields were progressively enclosed from the 16th century onwards, with the common pastures following much later, in 1772. Skirlington had a West Field and pasture, the latter enclosed in the medieval period. The early date of the enclosure in both areas is reflected in the apparent retention of furlong boundaries in the present field system round Atwick, and the presence of ridge-and-furrow of medieval or post-medieval date north and south of the village, extending to Skirlington, and centred at TA 1884 5168 (AT17).

Post-Medieval

Atwick village contains a number of buildings of interest, some of which are listed in the gazetteer, and including a former Free School, built in 1715 next to the village green (AT44), and in use until 1877. Grange Farm (AT31) and Church Farm (AT38), also located in the village, both date from the later 18th century. Grange Farm descends from the medieval Rectory estate.

The presence of post-medieval/medieval ridge-and-furrow in the Atwick and Skirlington area has already been mentioned (AT17). Some of this may post-date the creation of closes, which was already underway in the 16th century, with large areas of the open field system being enclosed well before the late 18th century, when the remaining commonable lands were divided in 1772 by a parliamentary act of 1769. High Skirlington Farm itself (AT7) was built by 1772.

Modern

Most of the buildings in Atwick village date from the 19th century, including the restored Primitive Methodist Chapel of 1856 (AT34).

Outside the village are the sites of a number of monuments representing Atwick's agricultural past. These include the site of Atwick post mill, built on former common land south of the village between 1772 and 1828 (AT62), it was disused by c 1900, having been converted to steam. Several limekilns are recorded on the First Edition OS in the immediate vicinity of the village, including examples at Cliff Lane (AT30), College Farm (AT48), north of Atwick Hall (AT26), at Rose Farm (AT29), and south of Bewholme Road (AT51).

By far the most numerous class of monument from this period, however, is related to World War 2 coastal defences, although a rare World War 1 airfield was located to the north of the village, centred at TA 1885 5135 (AT22); this was in use by 1914, and

continued in regular use until at least May 1918, but appears to have been closed immediately after the end of the war. No trace now remains.

In the north, an area of barbed wire with trackways to the rear (AT6) protected the cliff at Low Skirlington, extending southward. In the same area and immediately to the rear on the cliff, a pillbox was constructed at TA 18775 52745 (AT3), with another to the north (AT1). There is a former firing range for aircraft from RAF Catfoss and other bases on the cliff at TA 18985 52835 (AT2), consisting of two bombing range direction arrows, observation posts and barbed wire. 400m inland, a Nissen hut survives immediately north of Low Skirlington (AT4).

Further south is an observation post in a vulnerable position at Moor Hill on the cliffs above Atwick Sands (AT12). Nearby was a semi-sunken concrete section post (AT15). Also at Moor Hill, a radar auxiliary engine room (AT13), and radar strongpoint (AT14) are the last remnants of a Coast Defence Chain Home Low (CD/CHL) radar station; a pillbox is sited 200m inland (AT11) as a backstop. A beach light was sited on the sands at TA 19265 52305 (AT10), although only the concrete base survives.

Further south is a second-line pillbox 200m inland on North Field at TA 19055 51655 (AT18). 200m further inland were three weapons pits (AT16). On the cliff at TA 19385 51185 is a semi-sunken structure, possibly a section command post (AT2), and a nearby pillbox (AT23), originally with another building, now demolished.

A concrete roadblock, removed by the end of the war, was located in the village on the Hornsea road (AT42), while south of here and west of the road was a searchlight battery (AT53), consisting of one large and two small searchlight emplacements, hut platforms and a Nissen hut. Due east of the village, a beach light was located on the sands (AT37); the concrete base remains, largely buried. On the beach south-east of the village is a pillbox (AT57) surrounded by concrete debris, representing destroyed features, and with a second pillbox 100m to the south (AT59).

Immediately south of the east end of the village was the former site of a military camp (AT46). Eastwards on the cliff edge are the remains of a nearby ‘Diver’ AA battery (AT41); the remains of several buildings survive, but the gun emplacements have already been lost to erosion; there was a related camp at TA 1958 5113. Next to the cliff road east of the village was a military building of unknown function at TA 1967 5106 (AT25); a little to the south-east on the beach is the site of a pillbox, badly damaged by erosion (AT32). The approaches to the village from the east/south-east were protected by a pillbox (AT49) and a series of weapons pits, trenches and barbed wire (AT60). A semi-sunken concrete command post was located in this area 100m from the cliff edge (AT58), probably related to the pillbox.

West of Atwick village was an extensive area of anti-glider obstructions (AT27), consisting of trenches and banks, either side of Bewholme Lane. Nearby are several bomb craters (AT21), indicating a raider attack on the west end of the village, which lay 150m to the south.

Discussion

Atwick has produced Neolithic and Bronze Age artefacts, but no structures definitively of either date. Several later prehistoric features have been identified as of Iron Age date,

some of which may have been Iron Age/Romano-British transitional. They include pits exposed in the cliff (AT20), an occupation site with cremations, artefacts and iron slag (AT36), and a ditched enclosure (AT5). The presence of an occupation site in Atwick village is of interest. Apart from AT20, however, none of the sites is at risk from coastal erosion.

For the medieval period, the presence of a series of earthworks in Atwick (AT50), and at High Skirlington (AT8) reflect the shrinkage of both settlements, perhaps commencing in the later medieval period, but continuing subsequently. There are no known features of either period at risk.

The very active erosion on this section of coast has, however, already led to the destruction of a number of World War 2 monuments, including pillboxes (eg AT1, AT32) and the partial destruction of an Operation Diver AA site (AT41).

4.9 Hornsea *(Maps 11, 12)*

Geology and topography

The underlying geology, as elsewhere, consists of Upper Cretaceous Flamborough Chalk, overlain by boulder clay. Gravel terraces lie beneath the town, overlain by Holderness fine loamy soils, with Landbeach coarse loams extending west of the Mere. There are deposits of alluvium near the Mere and Stream Dike, which is the overflow from the Mere to the sea at Hornsea Gap, a declivity on the low cliff. The parish mainly lies between 15–25m OD, with the expanse of Hornsea Mere forming the last surviving post-glacial lake in Holderness. There was another mere on the seaward side, the truncated remains were recorded in 1906, and it appears to have filled with a succession of peat and lacustrine silts before it was eroded and exposed to the sea. This could be the site of a ‘submarine forest’, consisting of fallen trees (HO156) recorded by Poulson in the 19th century.

The northern area is protected from erosion to some extent by sand accumulation against the sea defences, the rate being 0.5m. The defences form a barrier to a continual flow of sediment southwards; the erosion rate immediately south of the town (Management Unit 6) is therefore at least 2.0m annually.

Historical and archaeological summary

Prehistoric

Palaeolithic

A uniserially barbed bone point, presumably of Upper Palaeolithic date, was found in Hornsea during the construction of a gasholder in 1905 (HO152), presumably at the Wade gasworks south of the town, and not far from Hornsea Mere; an example has been found more recently in a quarry at Gransmoor near Driffield, dated by AMS to between 11500 and 11100 BP. The Hornsea point was noted as lying under lacustrine peats, 3.6m below the present surface, indicating the presence of mere deposits to the east of the current lake.

A ‘rhino horn’, probably an elephant tusk, was recovered from an area of ‘submarine forest’ by George Poulson in the mid 19th century (HO157), and presumably can be assigned to this period.

Mesolithic

The sole find from the study area was a barbed antler harpoon from below the low water mark near TA 2145 4705 (HO119).

Neolithic

An assemblage of eleven Neolithic or Bronze Age flints was recovered from an evaluation in Newbegin, Hornsea in 2000 (HO75). Unprovenanced finds included a small greenstone axe (HO170) and a quern and axe (HO148), although these may have come from Atwick.

Bronze Age

Other than the possible Neolithic/Bronze Age flint assemblage from Hornsea (HO75), there were few other finds of the period, and no monuments, recorded in the portion of the parish within the study area. A basalt axe hammer found with a flint axe (HO151) may be of this date.

Iron Age

A cart burial of either Iron Age or Anglo-Saxon date (HO34) has been found near the seafront in the northern part of Hornsea; since this was c 100m from an Anglian cemetery (HO30), the latter is more likely. A Corieltauvian gold stater was also found in 1990 on the beach (HO3), following an earlier find in 1907 (HO153).

Late Iron Age/Romano-British

There are relatively few artefacts or monuments from this period, partly a reflection of the built-up nature of the study area in Hornsea parish. Undated ditches recorded either side of the Hornsea–Atwick road north of the town (HO20) may be of prehistoric date, and if so, are most likely to be of this period, but they may also be of medieval or later date. A ditch and polygonal enclosure have been identified immediately west of the road a little further south, on the edge of the town at TA 1965 4815 (HO40).

A gold coin of the Emperor Magnentius (AD 350–3) was found in the town prior to 1935 (HO153), and a coin of Licinius (AD 307–23) before 1965, west of the railway (HO87). These suggest late Roman settlement in the area. Roman pottery was also found during the course of an evaluation at The Levels in 2001 (HO69).

Anglo-Saxon/Early Medieval

The town (HO70) is an important market centre with Anglian origins, being sited at the east end of the Mere, originally located some distance from the sea. The name (*Hornessei* DB) possibly derives either from the projection of a peninsula (‘horn’) into the Mere, or the shape of the Mere itself. The former settlement of Hornsea Beck, located son the line of the outlet from the Mere to the sea some distance from the modern

shoreline (HO155), was the town's seafaring 'partner' to the east, and also appeared in Domesday. This and the hamlet of Hornsea Burton to the south of Stream Dike (HO156) have both been lost, and the present seafront is a 19th-century creation. Inland were two further hamlets, both now DMVs: Northorpe, TA 1965 4915 (HO11) and Southorpe (both *Torp* in DB), outside the study area at TA 19615 46385 (MHU3549).

Monuments of the period include a cart burial, although this may be Iron Age (HO34), from the east of the town, near a 6th-century Anglian cemetery found during works at the Hydro Hotel (HO30) in 1913 and 1982. This comprised thirteen burials with a range of gravegoods, including a silvered buckle, silver pendant, a dagger, strap fasteners, a necklace and pottery. A bone comb (HO17) was also found on the cliffs at the north end of the town in 1970. Taken together, these finds suggest a substantial early Anglian presence in the eastern part of the present town, perhaps associated with a settlement near the Old Mere.

Medieval

The town is based around a north–south road, consisting of Market Place and Southgate, with Westgate leading westward, and Eastgate and Newbegin leading eastward to the sea, and the thriving port of Hornsea Beck. The church, St Nicholas (HO67), is Grade I listed, and has a 13th-century nave and aisles, and a late 13th-century tower. It was altered and enlarged in the late 14th and 15th century, before being restored in the 19th. The rectory stood in Hall Garth Park (HO60), where it survives as a scheduled moated site, 70 x 40m overall, with banks outside the east and west sides. The house itself was sold in the early 17th century, and had been pulled down by 1787. A medieval market cross (HO85) stood in the Market Place until the mid 19th century, but was moved to Southorpe Hill Farm, before being moved to the churchyard (HO81) in 1898, following the clearance of six cottages as part of improvements relating to Victoria's Diamond Jubilee. A second, the 14th-century Wayside Cross, stands in Southgate (HO110). A watching brief at The Willows (HO78) recovered traces of a late medieval cobble surface and boundary ditch at 90° to Newbegin.

Outside the town to the north and north-west, areas of medieval/post-medieval ridge-and-furrow were visible from aerial photographs (HO31), although most has been ploughed-out or built over; an area was also located just outside the town by geophysical survey in North Field near TA 2010 4862 (HO22). These represent strip cultivation in the town's East and West Fields, located north of the Mere. Northorpe DMV is also located in the area (HO11). Further areas of ridge-and-furrow were recorded south of the Mere in Southorpe's fields, and to the south-east in the open field of Hornsea Burton during geophysical survey at TA 2085 4695 (HO122), although post-medieval examples had previously been recorded from aerial photography.

A road surface located in the north of the parish north of Northfield House, TA 1915 4955 (HO8) could be of medieval or later date. A causeway apparently linked Hornsea Mere and 'Hornsea Burton mere' in 1280 (HO170).

Post-Medieval

During this period, erosion at North Cliff is said to have resulted in the loss of 240yds (219m) of land between 1547 and 1609, an average of c 3.5m per annum, while in 1637,

100–200 acres of East Field had been lost 'within living memory'. In Hornsea Beck, the port of Hornsea (HO155), a pier was in use and being repaired in 1558 (HO168), but there is no mention of it as a port after 1565; a pier is however shown here on Burleigh's map of c 1560. The lack of maintenance of the pier and perhaps adjoining quays led to the loss of the houses in the area by the 17th century: thirty-eight houses were destroyed between 1547 and 1609 and in 1637, 20 had gone 'within living memory'; the pier itself was apparently lost by 1609. By 1695 all but one or two houses had been washed away. In Hornsea Burton (HO156) in 1663 there were still c 8 houses, lying close to a small common or green, but in 1697 the hamlet was described as 'wasted by the sea'. Inland, Northorpe (HO11) was still occupied in the late 17th century, but all the plots were empty by 1809.

A minor loss to erosion was Hornsea Beacon (HO24), in existence in 1588, but lost by 1829. A replacement of the original was put up in 1746 and removed in 1786, and two beacons were erected in 1794, one in East Field and the other in Pennels Close.

Several buildings and monuments within the town are of interest, although none are at threat from coastal erosion. The most prominent are listed in the Gazetteer, with several examples listed below. They include a number of houses of 17th-century origin, many constructed of boulders with sparse brick trim. Old Hall (HO62) in Market Place is a 17th-century H-shaped building of brick with shaped gables, built as a rectory by the prominent Quaker Acklam family to replace an earlier structure, possibly on the same site. A west wing was added in the 18th century and bay windows to the front in the 19th. The Acklams also built a home for themselves on Southgate (HO108), probably in the early 1670s, variously called Low Hall, the Old Hotel and the White House. Of brick and cobbles, it retains several original internal features, including three fireplaces and a staircase. Behind the house are several Grade II listed 17th- and 18th-century monuments to members of the Acklam family (HO102–5). The building housing Hornsea Museum, formerly Burns Farm, Newbegin (HO73) has late 16th-century origins, although it was largely rebuilt in the late 18th century. A bull ring, for baiting animals at the annual winter fair, was located in Market Place (HO66), now the site of a traffic roundabout. It may have been in use from medieval times, but the practice is said to have halted in 1823.

Structures without known sites include three gibbets near Hornsea Beck, North Cliff and on Hornsea Common (HO154), mills in Southgate, mentioned in 1659 (HO166), others in a field called The Dells, blown over in 1733, and at East Field near Mill Beck by 1688 (HO158), and a horsemill in Eastgate (HO167) by 1671. Two were already in existence by 1608. There had also been a maltkiln in Eastgate from before 1677 (HO162), a kiln (?pottery or tile) and a tannery in Southgate (HO169, 160), the former by 1648.

Post-medieval ridge-and-furrow was recorded from aerial photography south-east in the area of Hornsea Burton (HO133). This may be related to an area recorded during a geophysical survey, of either medieval or post-medieval date (HO122). Other areas of medieval/post-medieval ridge-and-furrow north of the town have already been mentioned (HO22, 31). Some of these represent activity pre-dating the parliamentary enclosure of the town's open fields in 1809 (see below), which at the time had been reorganised and consisted of an East, West and new North Field, although there were already large areas of old enclosures by the 17th century, principally east of the town around Stream Dike, and the 'Lund' outside the study area south of the Mere. Southorpe and Hornsea Burton retained their own fields south of the town. The layout of the latter

at least may reflect the original arrangement of furlongs; a windmill was sited in one of these off Mill Lane (HO116), first mentioned in 1584, and shown as a post mill on a map of 1663; the site was still shown on a map of 1864.

Modern

As well as completing the reorganisation of the remaining areas of open fields and pastures, enclosure also led to the straightening and rerouting of roads in the parish, including the creation of Sands Lane and Cliff Lane, extending the lines of Eastgate and Newbegin to the seafront. New farms were constructed, such as Eastfield Farm (HO7), but several have been lost due to redundancy or redevelopment, such as Trinity House Farm (HO131), demolished in the 1980s. Hornsea itself remained a modest settlement (Plate 3) but began to grow as a seaside town in 19th century, particularly after the construction of the Hull–Hornsea railway line in 1864 (HO98), when the area around the new station (HO63), and between the old town and the sea expanded rapidly; there was a smaller station at Hornsea Bridge (HO126). Facilities developed to cater for visitors, including the Marine Hotel, Promenade (HO25), built 1837; a pier was also constructed between 1878 and 1880 (HO51), but was damaged by collision with a ship the same year, and only fully re-opened in 1895. It was demolished in 1897. The closure of the railway line in 1964 and the contraction of the holiday industry have led to some decline, although there has been considerable recent investment in the seafront, including the strengthening of the sea defences and improvement of the promenade.

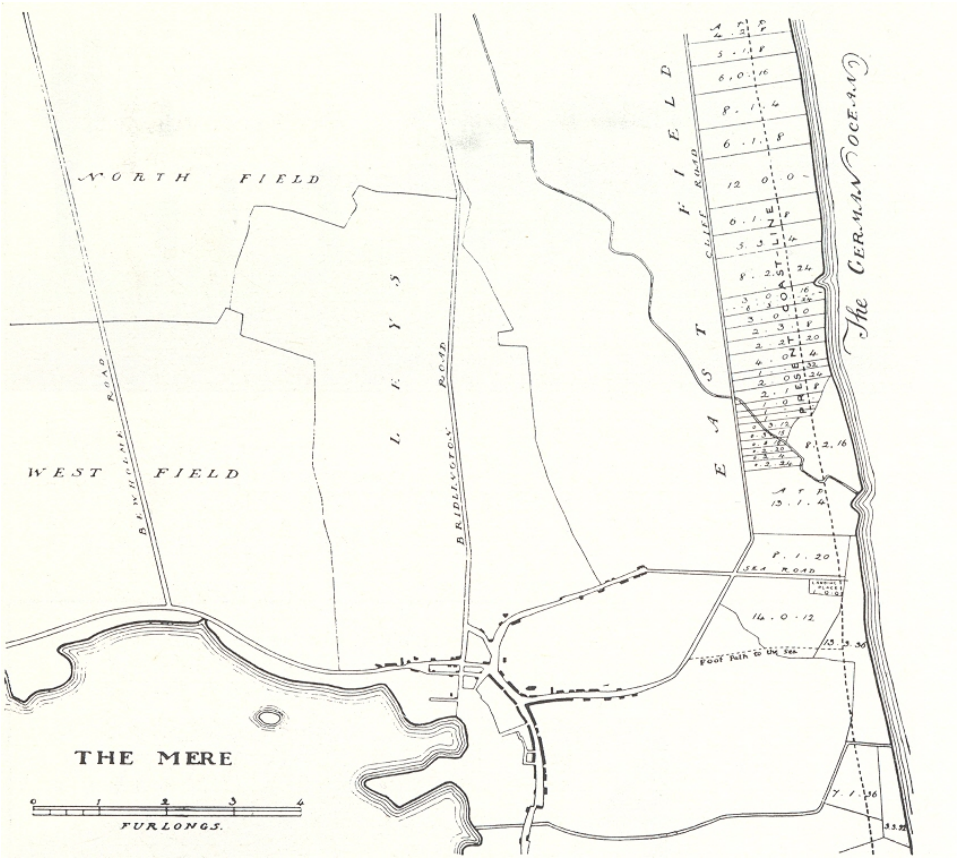

Plate 3 Hornsea, 1801

Prominent buildings include Hornsea Children's Convalescent Home of 1907–8 in the north of the town (HO18), which was used as a base hospital in World War 2, and is now private accommodation. The War Memorial Cottage Hospital (HO42) was built in 1922–6, extended in 1928. A former Primitive Methodist Chapel of 1835 was built in Westgate (HO77), and was demolished after being replaced by one in Market Place in 1864. A Wesleyan Chapel of 1814 was built in Back Southgate (HO91), replaced in 1870 by Trinity Chapel in Newbegin (HO57). An Independent Chapel was built in Southgate in 1808 (HO99), replaced in 1872–4 by another on New Road. The United Reformed Church, Cliff Road (HO54) was built as a Congregational Church in 1868. The town's water treatment works, Atwick Road, are of 1878 (HO29). An unusual feature is a listed folly, built of overfired wasters, located south of Newbegin (HO83). The site of a coastguard Preventive Station (HO159), constructed on the cliff edge c 1830, has been lost to erosion. A coastguard station was built at the east end of Cliff Road (HO47) to replace it.

South of here at Hornsea Burton, limekilns were sited near the cliff edge (HO111), and there were others at Eastfield Farm (HO6) and Marine Drive (HO44). There was a brickworks at South Cliff near the southern parish boundary (HO146), in place by 1848, and still working 1864; this may be related to a brickmaker recorded at Hornsea Burton, 1846. There was also a windmill (HO139) located at a brickworks centred on TA 2025 4635 (HO138), and built c 1865 on the site of the 20th-century Hornsea pottery.

An unusual feature of the town was a World War 1 Royal Naval Air Service seaplane base at the east end of Hornsea Mere (HO114). Although the base closed immediately after the war, several of its brick buildings survive in use.

As might be expected for such an important area, the modern period is dominated by World War 2 coastal crust defences (HO55). The town was encircled to protect against both seaward and landward assault, and included beach defences, consisting of pillboxes on the promenade, fronted by anti-tank defences, minefields and barbed wire, with gun emplacements on the south cliff. On the landward side (some of which lies outside the study area) were further minefields, barbed wire, roadblocks, railblocks and pillboxes, effectively limiting ways into the town to four road access points and the railway; the pillboxes west of the town faced east, and the defences in the area were presumably intended to prevent a breakout from the town if it was captured.

The features falling within the study area include temporary 'soft' defences such as weapons pits behind the seafront (HO71), on the northern fringes of the town (HO14, 19, 26), in the town itself (HO43) and south-east of the town (HO141). Trackways behind barbed wire fencing protected the seafront at the southern parish boundary (HO145), the north end of the town (HO12) and inland, the north-west corner of Hornsea (HO39). Infantry trenches were located in the south near Rolston camp (Mappleton) (HO54, 144). Other features removed at or by the end of the war included concrete roadblocks, of which several were sited at salient points through town, including examples in Marine Drive (HO50) and Atwick Road (HO36). A Royal Observer Corps post was sited on the roof of a council incinerator building nearby (HO27), although the Subterranea Britannica website places it at TA 203 493.

Hard defences in the study area included pillboxes on the edge of North Cliff north of the town (HO5), on the northern fringe of the town near an AA battery (see below) (HO13,

15. 16), north of Northgate (HO28), in the north-west of the town at Atwick Road allotments (HO41), on the Promenade (HO23), east of the Marine Hotel (HO37), and on the beach (HO46). Further pillboxes were sited on the cliff south of the town (HO86, 113), 127, 128, 136, 137), near the southern boundary north of Rolston Camp, Mappleton (HO142), 300m inland near Beverley House (HO117), and 500m inland on the southern parish boundary (HO147). A building, possibly a pillbox, was located in the northern part of the town at TA 2053 4865 (HO21), while a pillbox and nearby trench were sited inland of South Cliff at TA 2128 4687 (HO124).

An important feature on the cliff at the north end of the town, TA 20415 49175 (HO10) was an Operation Diver AA battery, consisting of four gun emplacements and an associated camp; there was a second battery south of the town at TA 21285 46865 (HO125).

Fortified farm buildings were located south-east of the town at TA 2090 4688 (HO123), surrounded by trackways and barbed wire, and at South Cliff Farm (HO130), possibly the same site as military buildings protected by a weapons pit on the edge of South Cliff (HO129); there was a further strongpoint, consisting of an earthwork and timber structure at TA 21525 46345 (HO140). A camp was located just south-east of the town (HO115), near a beach defence battery (HO120), which was the site of two 4.7" guns and related buildings, Hornsea's main defensive weapons. There was a small separate building nearby (HO121). South of the town was an area of hardstanding associated with a small camp of Nissen huts at Greenacre Park (HO134).

Anti-tank cubes were located on the beach at North Cliff (HO1), with a minefield on the cliff to the rear, and further south at close intervals from the Promenade southwards (HO35, 48, 74, 89, 100, 106, 112).

A post-war range command post was located near Atwick Boating Club (HO2) as part of the air gunnery/bombing range at Low Skirlington (AT2). On the cliff at TA 20235 49505 (HO9) was an observation tower and range direction arrow, also related to the bombing range, now lost.

Discussion

The town is largely protected by sea walls, areas of which have recently been rebuilt. This ensures that only the North Cliff area is currently at risk from coastal erosion, and most of the damage to the archaeological resource is therefore 'historic'.

One of the more important finds from the parish was the discovery, in 1905, of a uniserially barbed bone point (HO152), representing an Upper Palaeolithic presence in the area. The point was made from a long splinter of bone, with thin slivers removed from the bottom to enable it to fit into a spear shaft. The base was also marked with diagonal incisions to roughen the surface in order that the animal glue and thread or gut used to fix the tip to the shaft would grip better. One side of the point was given eleven small barbs formed by the cutting of small notches to prevent the spear from falling out and slow the wounded animal. This weapon was found beneath peats which had presumably formed within an eastern arm of Hornsea Mere. Very few artefacts of the period have been found in context nationally, and the site (a former gasworks) should be earmarked for further work to modern standards, should the opportunity arise. A barbed Mesolithic harpoon from below the low water mark (HO119) reflects the continuing of the

area; in this instance the point may have been eroded from lacustrine peats on the foreshore, perhaps marking the site of a lost mere.

Neolithic and Bronze Age finds, including axes (HO148, 170) and an axe hammer (HO151) continue the record of local occupation, although there are no associated monuments, a partial reflection of the extent of modern development; possible later prehistoric or Romano-British features north of the town, however, include ditches and a polygonal enclosure (HO20, 40). Evidence for Roman settlement is otherwise limited to two 4th-century coins (HO87, 153) and pottery from a 2001 evaluation (HO69).

There is a clearer indication of Anglian settlement, with an important 6th-century cemetery at the former Hydro site (HO30) and a bone comb (HO17) from the cliffs. A 'cart burial' (HO34) may also belong to this period.

The medieval settlements of Hornsea Beck (HO155) and Hornsea Burton (HO156) were finally lost, following a sustained period of erosion, by the end of the 17th century, taking with them evidence for the original harbour facility, still in use c 1560 (HO168). Northorpe (HO11), sited inland, had also been depopulated, perhaps in the 18th century. Later features, such as the early 19th-century Preventive Station (HO159) were also lost in the period prior to the development of the area east of the market town as a seaside attraction. This saw the construction of a promenade and new civic/leisure facilities and housing over what had been part of the open fields between Hornsea and Hornsea Beck, in the later 19th to 20th centuries, behind a new sea wall. An early feature of the new resort was a pier (HO51), built in 1878–80, although it was also an early casualty, initially damaged by collision with a ship before it even fully opened, but demolished after sea damage in 1897.

The prominence of World War 2 defences reflects the strategic significance of Hornsea, although this was recognised in the Great War period, with the construction of a seaplane base at Hornsea Mere (HO114).

As well as the usual array of coastal crust defences (pillboxes, trenches, barbed wire entanglements, anti-tank blocks, AA sites and gun emplacements), there was a ring of defences to the west of the town aimed not at defending it from a land assault, but at preventing or slowing a breakout by invading forces which had already taken over the town. Pillboxes on this side of Hornsea therefore point into, rather than away from, the town. There were two Operation Diver AA sites north and south of the town (HO10, 125), as well as a beach defence battery (HO120) to the south. Many wartime monuments have been lost, including a range direction tower associated with Skipsea gunnery range (HO9), both Diver sites, and the coastal battery, pillboxes, including HO13, 15, 23, 37, 46, 86, 113, 136, 137, 142, 147, and many hard beach defences, particularly anti-tank blocks. Some of these area casualties of erosion, others have been demolished since the war to make way for redevelopment.

4.10 Mappleton *(Maps 12–14)*

Geology and topography

The underlying solid geology of the parish is Upper Cretaceous Flamborough Chalk, overlain by boulder clay, with areas of sand and gravel, some of which has been extracted in the west of the parish. The soil is fine silty loam of the Holderness Soil

Association. Topographically, the coastal area lies between 15–23m OD, with no breaks in the cliffline. There were several meres in the area until the medieval period, including Eelmere near Great Cowden (TA 210 443), which contained shelly marls, probably formed in the Late-glacial period, although organic deposits were apparently also present.

The annual loss of land in Holderness was recorded by the Ordnance Survey in 1889 as 4ft 10in (1.47m); the part of the parish north of the village forms part of Shoreline Management Unit 6, with an annual erosion rate of 2–3m, partly owing to the presence of Hornsea sea defences to the north, which have a blocking effect on sediment transportation and natural beach replenishment. There is a decrease in erosion in the extreme south near Mappleton, where sand accumulates against sea defences. Here, in Management Unit 7, rock groynes and a rock revetment constructed in 1991 as the result of a significant threat, have currently halted erosion, and there is sand accumulation.

Historical and archaeological summary

Prehistoric

Palaeolithic

There are no artefacts from the period, although a mammoth tooth was found on the beach between Mappleton and Cowden in 2004 (MA37).

Mesolithic

No records of this date in area assessed.

Neolithic

No records of this date in area assessed.

Bronze Age

A possible Bronze Age barrow has been identified in the southern part of the parish, south-west of Manor Farm, (MA51). A socketed axehead has also been recovered from the Rolston area in the north (MA8). There are a number of undated cropmark features in the parish; these are discussed below.

Iron Age

A pit dwelling of Iron Age date (possibly late) was discovered at Rolston (MA7), together with artefacts including pottery, animal bones and flint artefacts; there was evidence that some of these were produced on site. A number of undated cropmark features have been identified; these are discussed below.

Late Iron Age/Romano-British

As well as the pit dwelling noted above, cropmarks of a field system were recorded at Cowden Hill near the southern parish boundary (MA60), and overlain by medieval ridge-

and-furrow. Rectangular cropmarks at Rolston Cliff in the north, TA 2175 4565 (MA5) may or may not be archaeological features. Undated features which have been identified include enclosures on the edge of the study area at Sutton Mire (MA39), a circular enclosure to the south-east at Glebe Farm (MA45); a trackway in the south at The Carr (MA54), a circular feature and enclosure with ditches in North Field (MA19, 21).

A substantial ditch containing 4th-century pottery, a gully and two pits, were identified just outside the 1km study area boundary in North Field in 2001/2 during a watching brief near TA 21095 44335 (MA22), suggesting the presence of a late Romano-British settlement. Calcite-gritted Romano-British pottery was recovered from the cliff in the Cowden area (MA43). Other casual finds from the beach in 1965 include two gold Corieltauvian staters, a silver Romano-British trumpet brooch and bronze mount (MA63).

Anglo-Saxon/Early Medieval

Mappleton is located next to the cliff, and is an Anglian foundation, appearing in Domesday as *Mapletone*. The parish now includes the townships of Little Cowden (*Coledun* DB), Great Cowden and Rolston (from *Hrolfr's tun*). Despite the antiquity of these settlements, no early medieval features or artefacts have been recorded in the study area.

Medieval

The lower land at Mappleton and Rolston was used as common meadow and pasture and the higher for the medieval open fields, East and West Fields, with common pasture in Broom Hill and the Leys to the west. Rolston, Great and Little Cowden had their own fields, the lower land bordering Cowden drain was probably also used as grassland.

Mappleton village itself (MA28) is based around a north–south street, part of the coast road, with a cross street. The present buildings are principally 19th century in date. All Saints Church near the south end of the village (MA30) is largely of 14th- and 15th-century origin, with 19th-century restoration work, although a church was already in place by 1115; there was originally a 12th-century south door, removed by later alterations to the nave, and the chancel was altered or rebuilt in the 13th century. It consists of a tower, north aisle, three-bay nave with south porch, and three-bay chancel with north vestry. Mappleton Hall was originally moated (MA27). A 47m medieval or post-medieval enclosure, field boundaries and a ditch, possibly for livestock, has been identified by aerial photography just north of Mappleton village (MA23). The earthworks extend across the cliff and are being actively eroded.

Rolston, centred at TA 2155 4515 (MA14), currently consists of a north–south street and a small number of 19th- and 20th-century houses and farms to either side, with the moated site of the medieval precursor of Rolston Hall at the south end (MA17). A linear feature recorded north of Rolston Hall (MA16) may be the site of a medieval or early post-medieval building, and other features, including several platforms and enclosures are visible a little to the north and west (MA14), clearly indicating that Rolston is a shrunken settlement. At the north end of the township in Rolston Field, the remains of further medieval and possibly later settlement are visible as earthworks and ridge-and-furrow (MA11). The remains include a square enclosure, house platforms, field boundaries, banks, rectilinear enclosures and pits. These presumably represent a period where Rolston extended further to the north than at present.

Great Cowden, a DMV, was sited near TA 2375 4235 (MA49). It was based around a north–south street with back lanes to either side. By 1992, only the western back lane remained on the cliff edge. What remains are earthworks underlying a former bombing range, including a platform, pits and field boundaries. Traces of a moat (MA42), presumably represent the remains of a manor house.

Little Cowden, also now a DMV centred at TA 2480 4091 (MA56) seems to have survived into the 17th century. Traces of streets and house platforms at the former west side of the village survive on the cliff edge, but are being actively eroded. Most of the village has been lost, including the church of St John.

Near Cowden, medieval/post-medieval ridge-and-furrow overlies an earlier field system of probable prehistoric date, (MA60).

A windmill was located at Mill Hill, Great Cowden TA 2315 4237 (MA46), by 1303, and another at Little Cowden (MA61) by about 1290, removed by 1401. There was a bridge crossing Hornsea Beck, built in 1440 for pedestrian traffic and horses (MA65).

Post-Medieval

Mappleton was listed as a port in 1565, but all the related quay facilities have long since been lost. The sea is reported to have resulted in the loss of c 1 acre a year at Little Cowden in the late 18th century, and 1–4 yd (0.91–3.6m) a year were lost at Mappleton and the Cowdens in the 19th century. The c 630 yd (576m) between Mappleton church and the cliff in 1786 had been almost halved by 1956, and the village is now at risk. Great Cowden was progressively eroded, but was still relatively intact in the 18th century. Little Cowden (MA56) seems to have survived until at least 1517, although most had been lost to erosion by c 1690, including the church of St John.

There are several buildings of interest in Mappleton, including Gray's Farm, of early 18th-century date (MA26).

Outside the village, Mappleton's medieval field system was retained until quite late, reorganised into North, Middle and South Field, and Sea Field (the remainder of the former East Field) parallel to the cliff, between the village and the sea. The fields of Little Cowden had already been partly enclosed by 1517, Great Cowden in 1772, Mappleton and Rolston very late for the area, in 1849 and 1860 respectively. Post-medieval ridge-and-furrow was recorded in the area north of Mappleton, around Rolston (MA9).

Rolston Hall, built on the site of a medieval moated structure (MA18) is 18th-century with possible 17th-century origins. A brick dovecote (MA20) is used as a shed.

Three beacons were recorded in 1588, two of the sites being at TA 225 435 (MA36) and TA 245 415 (MA52); one was erected in 1768 at Great Cowden and removed c 1826.

A 17th-century windmill was recorded in South Field, Mappleton (MA47); a rebuilt version remained in use until 1905, and still remains unrestored.

Modern

Erosion continued to affect the coastline, with just one farm remaining at Little Cowden by 1854; this was subsequently rebuilt inland as Little Cowden Farm (MA62). At Great Cowden, the main street and eastern back lane still remained in the mid 19th century; only the west back lane, Garthends, survived in the 1990s with several houses adjacent. Several modern buildings were constructed inland on the coast road as a recreated core, including a public house. As mentioned above, the surviving areas of open field in Mappleton and Rolston were enclosed very late for the area, in 1849 and 1860 respectively, following internal reorganisation, although some early enclosure and consolidation had already taken place in some areas.

Gravel extraction from the beach was important for the inhabitants of Rolston and Great Cowden for much of the 19th century, augmenting agricultural incomes. The industry had been banned by the Board of Trade by 1892, leading to a fall in the population.

A coastguard was recorded at Great Cowden in 1851, and a rocket life-saving apparatus was operated there by the end of the 19th century.

A Wesleyan chapel was located in the village (MA25), originally built as an Independent Chapel in 1838, it closed in 1967 and became a village hall. Features in the surrounding area include a limekiln south of Rolston Road (MA3). There were also mills at TA 2315 4237 (MA47) and TA 22375 43745 (MA34), the former still standing and in use until 1905.

As elsewhere in Holderness, the modern period at Mappleton is dominated by 20th-century defensive features. On the cliff south of Mappleton was a group of four military buildings at TA 2314 4320 (MA38), which are considered to be of World War 1 vintage.

At Rolston, land was let for an Army camp by 1921, when the buildings covered just over 20 acres. The camp (MA4) consisted of wood, brick and asbestos sheet huts, still in good condition. The site was enlarged to c 55 acres in 1922, and bought outright in 1927. The enlargement was sold in 1935, but the camp was still used by the Ministry of Defence for training in the 1990s. North of the camp, a rifle range (MA2) had been set up in 1907; it extended over 58 acres in 1921, when the Territorial Army Association of the East Riding bought it. The range had been reconstructed by 1935 because of erosion. There was a second range to the south of the camp (MA6).

Also at Rolston was an Operation Diver AA site (MA13), now demolished, with a training camp immediately to the south (MA15). This included post-war wooden buildings, officers' quarters and a guardhouse. There was a second Diver site at Mappleton village (MA31); only one building survives, 50m from the cliff edge. A third AA battery was located at Great Cowden, the site now mainly lost (MA44). A camp nearby, centred on TA 2280 4392 (MA29), provided accommodation for this site.

Other World War 2 features include a pillbox collapsed on the beach at Rolston (MA1), two at Mappleton, one now lost (MA24), the second a little to the south of the village (MA35), another lay north of Great Cowden (MA40), two at Great Cowden itself (MA41, 50), a group of three pillboxes at Little Cowden (MA59), with a fourth a little further north at TA 2479 4093 (MA55). This pillbox would have served no function after 1943, as it was within one of the impact areas of the tank range. West of Rolston was a series of

trenches, centred at TA 2160 4547 (MA10), although these could possibly have been of World War 1 date.

In the 1940s the Army also requisitioned land in Great Cowden to create Aldbrough RAC Tank Range. Residents were removed for their own safety and also took over a holiday camp in Mappleton village. The range was abandoned at the end of the war, but the land was later bought outright by the War Office in 1953, when 200 acres in Little and Great Cowden within the area of the tank range became RAF Cowden Sands, and air-to-ground gunnery and bombing range. The range was used by British and Nato aircraft until the 1990s, but since then, although it is no longer utilised, it has remained occupied by the RAF to permit explosive ordnance clearance. The bombing range was superimposed on the tank range which was centred at TA 24005 41305 (MA53). Three target railways and twelve range dug-outs (blockhouses) associated with the tank range have been recorded, at least five of which have been lost to coastal erosion; a concrete range direction arrow has also succumbed to the sea. Three triangular concrete tank firing points, a concrete tank road, and a range control tower, one of four used for firing control at TA 23705 40835 (MA58) survive on the landward side of the range.

Discussion

The earliest presence of prehistoric activity is suggested by a possible Bronze Age barrow (MA51), although this is not at risk. The later prehistoric is better represented by an Iron Age 'pit dwelling' from Rolston (MA7) and a series of cropmarks. Of these, cropmarks at Rolston Cliff (MA5) may not be archaeological features, but their location near the cliff edge suggests that they should be examined.

Romano-British pottery has been recovered from the eroding cliff (MA43) near Cowden, indicating the need to examine the area.

Evidence for past medieval/early post-medieval activity is quite widespread, owing to the presence of DMVs/SMVs at Rolston, Little Cowden and Great Cowden, all of which have left earthwork remains. Rolston is inland, but earthworks survive precariously on the cliff at Great Cowden (MA42, 49), Little Cowden (MA56) and immediately north of Mappleton (MA23). Some of these represent the remains of house platforms, streets and plot boundaries; all are being eroded currently.

Once again, modern features, particularly those associated with World War 2, are the largest class of 'at risk' monuments, including the sites of Rolston Camp (MA4), rifle ranges (MA2, MA6), Operation Diver AA batteries, principally those at Mappleton (MA31) and Great Cowden (MA44) of which little remains. There are also several pillboxes and other features, several of which have already collapsed (eg MA1) or been lost (MA24).

4.11 Aldbrough *(Maps 14, 15)*

Geology and topography

The underlying solid geology is Upper Cretaceous Flamborough Chalk, overlain by boulder clay with areas of fluvio-glacial sand and gravel. The soil is Holderness fine silty loam inland, but much of the coastal strip is Burlingham 2 fine loamy soil, with the village and its immediate surroundings built on a rare area of coarse loamy sand soils over gravel, belonging to the Wick 1 Soil Association. The coast forms an unbroken line here,

as the Lambwath stream, which bisects the parish, does not reach the sea in the parish, but runs westward. Although the parish lies mainly between 7–15m OD, the areas of sand and gravel therefore form higher cliffs over the boulder clay along the coast, reaching c 20m OD. Inland were several former meres, all outside the study area, although a former mere may have existed near Mill Hill at TA 263 368 and further north at Cess Dell, TA 259 379, both now represented by areas of alluvium. The first was relatively shallow, but the second contained at least 9.0m of alluvial deposits of Late-glacial to mid/late Holocene date (Dinnin & Lillie 1995a, 57).

The parish forms part of Shoreline Management Unit 8, where the coast is retreating at between 0.35–3.2m a year, although the high cliffs are becoming prone to increasing erosion (Plates 20, 21) with considerable losses near Ringbrough.

Historical and archaeological summary

Prehistoric

Palaeolithic

No records of this date in area assessed.

Mesolithic

No records of the period have definitely been identified in the study area, although an undated stone macehead was found in association with a skeleton south of Thorpe Garth DMV at TA 2545 3865 (AL36). The presence of human remains suggests a later date on balance, possibly Neolithic, more probably early Bronze Age.

Neolithic

Undated flints have been found together with medieval and post-medieval pottery just outside the study area north-east of Aldbrough village (MHU19539), while many others have been found during fieldwalking by the Humber Wetlands Project (see Gazetteer), although some of these were probably later. A small assemblage of knapped flints of late Neolithic/early Bronze Age date and a bead have also been found just outside the study area on the gas terminal site, TA 26102 36687 (MHU20140), suggesting a possible occupation site in the south of the parish.

Bronze Age

The human skeleton (AL36) and flint assemblages mentioned above suggest early prehistoric occupation, although this cannot be closely dated. Probable Bronze Age flints and a sherd of late Bronze Age pottery are among the artefacts recovered during fieldwalking by HWP at various locations.

Iron Age

Three areas of probable prehistoric cropmarks have been identified in the study area. These are undated, and are discussed below.

Late Iron Age/Romano-British

Three areas of cropmarks have been identified c 1km inland. East of Aldbrough village at the edge of the study area are faint traces of linear ditches at TA 2525 3865 (AL35). North-east of the village is an area of cropmarks, including a large enclosure and ditches (AL17). To the north is a droveway (AL12).

Roman pottery and coins have been found at different times in the cliff near the coastguard station (AL13), suggesting a settlement nucleus in the vicinity.

Anglo-Saxon/Early Medieval

Aldbrough is an Anglian settlement (*Aldenburg* DB), the village itself lying c 1.5km from the coast, outside the study area. In the study area, the townships of Bewick and East Newton (AL48), lay to the north and south, each with an area of coastline; several other townships lay further inland, west of Aldbrough village, all appearing in Domesday. There were settlements at Thorpe Garth (AL31) and Ringbrough (AL51), both now DMVs. The former may appear as *Totele* in Domesday, becoming *Thorpe* by the 12th century. The name of Ringbrough (*Ringeburg* DB – various spellings) suggests the former presence of a circular defensive work, presumably lost to erosion some time before records were kept.

The only findspot of the period is an early Anglo-Saxon burial, located just outside the study area at Hawthorns, TA 2465 3895 (MHU12047); a knife and brooch were found in association.

Medieval

The open fields were principally divided into North Field and South Field either side of the village by the 17th century, and in the south, the common lands of New Close, probably reflecting the medieval pattern. There was also a small area of pasture to the east of the village on the course of the Lambwath stream. An area known as Sea Field in the 18th century reflects areas lost to erosion. Ringbrough and East Newton may have had their own fields, but they were later combined into a North and South Field, with an area of common pasture, called Bitten. Bewick's fields were enclosed either in the later medieval or early post-medieval period. There were fishponds and one or two warrens there, south of the manor house, in the early 14th century. Ridge-and-furrow cropmarks in the parish seem to be mainly post-medieval, although they presumably reflect the pattern of medieval furlongs; an area in the south may include medieval examples, centred around TA 2625 3670 (AL59), as do the earthworks at Low Farm (AL40).

Newton, later East Newton, hamlet was also recorded from 1086, located at TA 2685 3795 (AL48). It may have comprised an east-west street with a parallel back lane, and there was a green, certainly by the 18th century.

As mentioned above, there were townships at Thorpe Garth (AL31) and Ringbrough (AL51), both now DMVs. The latter was the site of a Sherrif's 'tourn' or court in the 13th century, but had been reduced to a single farmhouse by the 19th century. There are traces of a possible moat in the area near farm buildings close to the cliff at TA 2735 3725 (AL53), although these are considered dubious. Bewick, Ringbrough and Thorpe Garth all appear to have had chapels, the first by 1196, the others by 1309. A ditched

close, possibly relating to a moat and cropmarks to the north, were located north of Grange Farm, East Newton (AL45). There is also an area of cropmarks representing medieval house platforms, hollow ways, field boundaries and ridge-and-furrow immediately east of Low Farm/Hill Top Farm (AL40: Plate 17), just inland of the cliff. These must represent a lost settlement, although it cannot be identified from records at present. The First Edition OS (1855) does not show earthworks here, although a possible embankment is shown behind the farmsteads.

By the 14th century there was a windmill on lands of Bewick manor in Aldbrough North field, rebuilt in the 17th century. There was another mill at Ringbrough in 1351 (AL57), later commemorated by Mill Hill west of Ringbrough Farm.

Post-Medieval

Aldbrough was included in a list of ports in 1565, although any quays or other facilities related to the port have long since been lost to the sea.

The open field and common lands of Aldbrough were enclosed in 1766, those of East Newton in 1772. Bewick had already been enclosed, probably early in the period, although there was still some common pasture in the early 17th century. Ridge-and-furrow, presumably relating to the period before enclosure, has been identified north-east of Aldbrough village (AL5), north of the village (AL3, 14), and between Aldbrough and East Newton (AL42). An adjoining complex extends to the southern parish boundary (AL59); some of this was examined during field reconnaissance in 1998.

Beacons have been sited on the high ground close to the sea. Three were recorded at Aldbrough in 1588 and later one. It was taken down in the early 1780s and rebuilt by the early 19th century, when it was reported as partly washed away by the sea.

The medieval mill in North Field was rebuilt and called Old Mill from 1685; it ceased to be used c 1905 and was later demolished.

Modern

There was still a little coastal trade from Aldbrough in the earlier 19th century, when lime-burning was carried on near the coast; kilns were sited at TA 2556 4005 (AL6), TA 26365 39015 (AL28) and at the end of Seaside Road (AL11). All of these have now been lost; also at the latter site in the mid 19th century were the Talbot Hotel, Spa Inn and a coastguard station with two houses. There were coastguards in 1851 and the station operated until c 1945. The houses were demolished in 1977. Volunteers manned a rocket life-saving station at Aldbrough in the early 20th century. The beacon restored in the late 18th century was finally removed from Bunkers Hill, close to the northern parish boundary, c 1830 and its site has been lost. There was a signal station at Salph (Salf) Hill in 1805 at TA 2565 3995 (AL8).

Sand and gravel extraction from the beach also took place, with dealers recorded there in the 1851 census; in 1870 three Aldbrough men were still licensed to take cobbles. In the 1920s and early 1930s a few boats fished from Aldbrough. These activities have left no monuments.

At East Newton, only three houses remained in 1852 and in 1991, when two had been rebuilt.

World War 2 is represented by a number of monuments, as elsewhere on the coast, although many have already been lost. The northern section of cliff was originally protected by barbed wire defences, in front of trackways (AL60), with a pillbox at TA 25055 40535 (AL1). Further south was an Operation Diver AA battery, centred at TA 25055 40535 (AL2), the site now lost. A camp was located south of Seaside Road east of Aldbrough village (AL20). On the cliff north of Mount Pleasant caravan park was a section post bunker (AL9), and immediately inland was an area of anti-glider trenches (AL10) and a further 'back stop' pillbox. A pillbox, now lost, was located a little further north on the cliff at TA 25595 39985 (AL7).

On the cliff north of Hill Top Farm was a rectangular minefield (AL27), with a trench to the south (AL29). East of the farm were several features, including a battery observation post, originally fitted with radar (AL37). Immediately to the south, a pillbox was located at Low Farm (AL39: Plate 18). A further Diver battery, now gone, was located south-east of Hill Top Farm on the cliff (AL41). West of the farm on East Newton Road (AL34) was a camp consisting of Nissen huts and an air identification circle containing the letter 'L', while north of here was a pillbox (AL30).

A possible pillbox was located a little to the south on the cliff east of Cliff Farm (AL46), but has been destroyed by erosion, and another north of the Farm at TA 2662 3816 (AL43). A training site, including a possible pillbox, was located on the cliff north of Ringbrough (AL50), now partly lost. Four possible air raid shelters were sited at Cliff Farm (AL47). The beach was protected in the area between Ringbrough and Cliff Farm by barbed wire in front of a trackway (AL49). North of Grange Farm was a further pillbox (AL44).

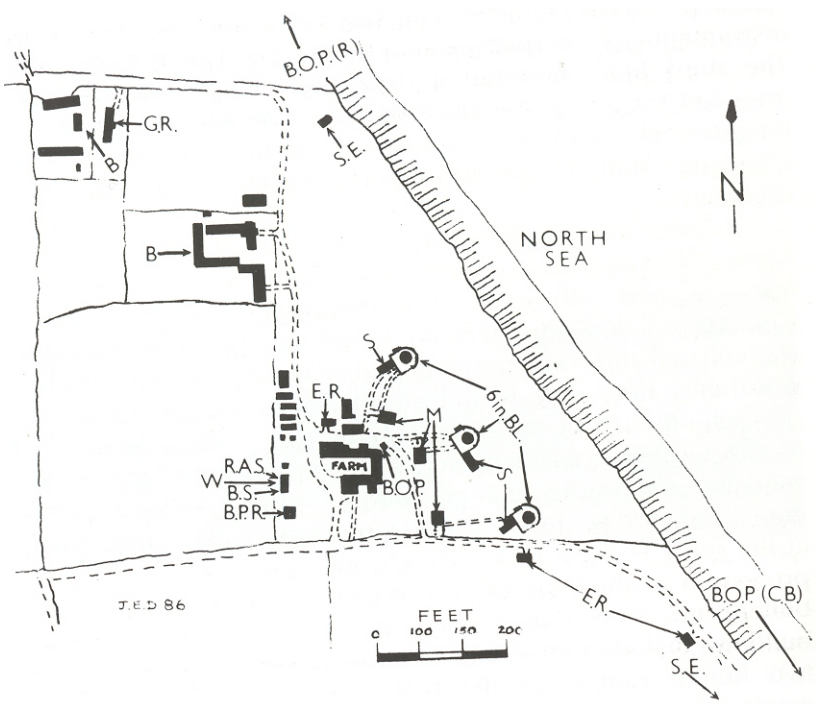

Plate 4 Ringbrough Battery, 1942 (Dorman 1990)

At Ringbrough Farm, an important coastal artillery battery was constructed in 1941 near the cliff edge, TA 2745 3735 (AL52: Plate 4) with a dual role as a counter-bombardment and close defence installation. The site consisted of three gun positions, observation posts, searchlights, generator house and a plotting room, used post-war as a garage; a substantial brick observation tower also survives (Plate 19). A pre-existing pillbox located on the west side of the Battery (AL55), was incorporated. An Operation Diver AA battery was constructed later in the war on the cliff in front of the Battery (AL54), but has now largely been lost to erosion.

Inland, and mainly outside the study area, was an important 'Starfish' decoy site, simulating Hull, centred at Mill Hill, TA 2600 3708 (AL56). It consisted of a series of tanks and buildings, and was operational between 1941 and 1943.

In 1958, an underground ROC monitoring post was constructed near the cliff north of Hill Top Farm (AL38). Closed in 1975, it had been undermined by 1989 and the remains are on the beach.

Discussion

The earliest archaeological periods are mainly represented by findspots, such as a macehead of presumed Mesolithic to Bronze Age date (AL36) and collections of flints. The find of a skeleton does, however, suggest occupation. Undated cropmarks have been found 1km inland, but there is little evidence at present for eroding sites before the Romano-British period. Roman pottery and coins from the area of the coastguard station (AL13) have been found on several occasions, suggesting an eroding occupation site near TA 2585 3965.

The next period where there is evidence for sites affected by coastal erosion is the medieval period. Thorpe Garth DMV (AL51) includes traces of a possible moat, which may not be reliable, although other remains may be present in the area. There are also earthworks at Grange Farm (AL44) and Low Farm/Hill Top Farm (AL40), all at risk of erosion.

As ever, the largest single group of monuments, and the largest group at risk, is that of World War 2 defences. Many of the former clifftop sites have been lost already. These include most of the three Operation Diver sites represented (AL2, 41, 54), and most of the clifftop pillboxes (eg AL6, 39, 46). A post-war ROC post near Hill Top Farm (AL38) has also been lost since it was closed as recently as 1975.

4.12 East Garton *(Maps 15, 16)*

Geology and topography

The underlying solid geology of the area is Upper Cretaceous Flamborough Chalk, overlain by boulder clay (glacial till), with small areas of fluvio-glacial sand and gravel. The soil in the coastal area is principally fine loam of the Burlingham 2 Soil Association, changing inland to Holderness fine silty loams. The area lies principally between 15–22m, with higher ground along the cliffs, which are unbroken.

The parish forms part of Shoreline Management Unit 8, where the coast is retreating at between 0.35–3.2m a year.

Historical and archaeological summary

Prehistoric

Palaeolithic

No records of this date in area assessed.

Mesolithic

No records of this date in area assessed.

Neolithic

The Neolithic is represented by the presence of two axes of green volcanic ash (EG8, EG31), the former found on the cliff near Hall Farm, the latter unprovenanced.

Bronze Age

The Bronze Age is represented solely by the find of a barbed arrowhead near Grimston DMV (EG14).

Iron Age

There are finds or features definitively of this period; an undated cropmark is discussed below.

Late Iron Age/Romano-British

The period is under-represented in the study area. Linear and curvilinear ditches of uncertain date (EG22) have been located near Bracken Hill. A Romano-British signal station and enclosure are also thought to have been sited 250m inland in the north of the parish at TA 2775 3625 (EG3), although the identification of the site as a signal station seems a little unlikely.

Anglo-Saxon/Early Medieval

East Garton and Grimston are both mentioned in Domesday; there are, however, no archaeological remains of the period from the study area. Garton (*Gartun* DB) is a shrunken settlement lying outside the study area almost 2km inland, but the medieval settlement of Grimston (EG16: *Grimestun* DB) is located east of the few houses forming the present settlement.

Medieval

Grimston formerly consisted of a settlement located at TA 2805 3535 (EG16), consisting of a series of tofts either side of the road from Garton. It is represented by the remains of earthworks (EG10), consisting of the original east–west main street, adjoining house

plots and field boundaries. Most has been ploughed out, and the site has been de-scheduled; the village was already shrinking at the time of the early enclosure in 1517.

At the east end of the township was the moated manor site, probably constructed in the 12th to 14th centuries, and consisting of a large moat (EG11), surrounding the main house, a smaller moat to the west (EG24), which may have held ornamental gardens or orchards, and fishponds to the east (EG13).

The open fields consisted of North Field and a second area to the south, and as the area was enclosed early, the outlines of some of the furlongs may have been preserved in the first closes, quite possibly surviving in the present field layout.

Post-Medieval

Grimston was in decline on its original site at the time of the first 40-acre enclosures of 1517, which may have occurred immediately west of the manor house (later Moat Farm), and the entire township seems to have been enclosed by the end of the 17th century. The outlines of the present fields in these areas may represent the layout of some of these closes and quite possibly the medieval furlongs. Post-medieval ridge-and-furrow, representing agricultural practices within the early closes, was recorded north of Grimston (EG5), and to the south (EG30).

The manor house was located in the main moated enclosure (EG11), although the building with seven hearths listed in the 1672 Hearth Tax returns is thought to have burnt down. A building, known as Grimston Garth Farm or Moat Farm remained on the site until it was superseded by the present Moat Farm east of the moat in 1956. The smaller moat (EG24) contained a summerhouse, and may always have been a pleasure garden. The Grimston family themselves constructed a new 'castle Gothic-style' house, Grimston Garth, to the south (EG21) in 1781–6. It stood in its own park (EG26), with a stable block (EG19) and icehouse (EG20). Bracken Hill Farm (EG29) was apparently constructed slightly earlier than the house, but appears to have formed part of the estate. There were still half-a-dozen houses west of Moat Farm in the 17th century, but these were presumably replaced in the 1780s by new cottages built outside the gate of Grimston Garth as an estate village.

In addition to these features, three beacons are listed as being located in the area at Beacon Hill in 1588 (EG25); two are shown on a map of 17th-century date.

Modern

A Gothick gatehouse was added to Grimston Park in 1812 (EG28). The village also received a school c 1860 (EG15), now a private house.

A beacon was constructed at Beacon Hill (EG25) c 1800 for use during the Napoleonic Wars, the last in a line constructed in the same location, although a World War 2 Battery Observation Post was constructed on the site (see below).

The principal features of the period relate to World War 2, including three pillboxes, and a possible fourth example, centred around TA 287 352 (EG18) just inland of the cliff south of Moat Farm in the Bracken Hill area; another was located nearby (EG27), in association with a bunker, which may have been used as a munitions store. The area

was protected by a minefield (EG23). At Moat Farm, there was an Operation Diver AA battery and related camp (EG9) and triple searchlight installation at TA 28455 35765 (EG7); neither survive. A minefield was laid out along the clifftop to the north of the battery (EG4), with a further minefield (EG2) extending towards the parish boundary, the north end marked by a Battery Observation Post (EG1) built on Beacon Hill to assist Ringbrough Battery in Aldbrough.

At Moat Farm was a weapons pit, located on the cliff (EG12). A further pillbox was located north of the farm at TA 28315 35945 (EG6), now lost.

Discussion

There is little evidence for early occupation on the study area; this was confined to the discovery of two Neolithic axes (EG8, 31), a Bronze Age barbed arrowhead (EG14) and cropmarks, thought to represent later prehistoric ditches (EG22) and a Romano-British site (EG3), listed as a possible signal station, although this seems unlikely. These findspots and monuments do however serve to emphasise that the area was used. The presence of extensive post-medieval ridge-and-furrow (EG5, 30) almost certainly masks earlier features, although these earthworks have themselves been largely ploughed out in recent years.

The principal monuments in the parish are those of Grimston — again largely ploughed flat — but representing a DMV (EG10) and the remains of the moated manor (EG11, EG24). The manor site lies a little inland, to the west of Moat Farm, although the area of fishponds east of the house (EG13) are at risk.

A number of World War 2 sites have been lost, including the Diver Battery and its associated features at Moat Farm (EG9), while others are at risk.

4.13 Roos *(Maps 16, 17)*

Geology and topography

This parish includes the former Hilston and Tunstall parishes (amalgamated 1927, together with part of Owthorne).

The underlying solid geology of the area is Upper Cretaceous Flamborough Chalk, overlain by boulder clay (glacial till). The soil is principally fine loam of the Burlingham 2 Soil Association, changing to Holderness fine loamy soils south of Tunstall. Topographically, the northern part of the cliff zone reaches 27m OD at Hilston Mount and 25m OD as far south as Tunstall, but beyond that, falls to 6m OD in the Sand le Mere area; inland of here, the area falls to 4m OD around Roos and Tunstall Drains, where there are areas of alluvium indicating former meres. There was a recorded example at Sand le Mere near TA 3195 3105 (RO93), as the name suggests. It appears on Saxton's map of 1577, Speed's of 1610 and Blaeu's of 1662, which all show a considerable 'bump' in the coastline at this point — gone by the early 17th century on editions such as Moll's Map of 1724. The stream forming the basis of later Tunstall Drain originally flowed south-west from Sand le Mere, which was fed by Spring Mere to the Humber; the presence of a stream flowing in this direction is clearly shown on the early maps listed. Traces of the hollow forming the inland end remained as late as 1910, protected by a bank. Molluscs such as cockles and mussels, and the presence of estuarine silt, suggest

that the mere was subject to tidal influence from the Humber until 810–410 cal BC, after which the growth of freshwater peat commenced, representing two distinct phases in the life of the mere (van de Noort et al 1995, 104). Peat found in the area recently has been radiocarbon dated to c 2000 years BP (RO86). The site is also marked as a 'submarine forest' on OS maps, reflecting past finds of preserved trees in the area. A sedimentary sequence may still survive to the west of the present sea defences.

In the north, Gills Mere survives as a marshy hollow; Howmarr (west of Tunstall), Rose Mere (east of Tunstall) and Bramarr have been lost to siltation and later agricultural drainage.

The parish forms part of Shoreline Management Unit 8, where the coast is retreating at between 0.35–3.2m a year. In the 19th century, the loss was gauged as 2 yards per annum (1.82m).

Historical and archaeological summary

Prehistoric

Palaeolithic

No records of this date in area assessed.

Mesolithic

In 1898, Sheppard identified timbers of what he interpreted as a lake dwelling, presumed to be of Mesolithic date, at Sand le Mere, TA 31955 31025 (RO98). The remains of structures have been exposed at low water, but their nature and date would require scientific re-examination; on balance, a Neolithic/Bronze Age date is more likely. This settlement would have been located at the landward end of the former mere discussed above (RO93), in much the same way as the example at Withow Mere. No other structures or artefacts associated with the period have been found.

Neolithic

A possible long barrow and pit have been identified 300m outside the study area, east of Glebe Farm (RO43). Two struck flints of Neolithic or Bronze Age date were recovered just outside the study area during fieldwalking near Southfield Lane, Tunstall, in 2005 (RO103).

Bronze Age

In the north near Hilston, a probable round barrow has been identified near TA 2915 3355 (RO18). Another is located further south near Kiln Farm, Tunstall (RO68). Both may well be of Bronze Age date. Other undated prehistoric features have been identified in the study area; these are discussed below.

Iron Age

There are a number of undated features in the study area; these are discussed below.

Late Iron Age/Romano-British

There are a considerable number of features identified from aerial photography, which are likely to be of late prehistoric date, although all are undated. These include a trapezoidal enclosure near the cliff edge in the north at Hooks (RO3), a ring ditch next to Hogsea Lane (RO21), a ditch at Mill Hill (RO40), a ring ditch west of Pastures Lane (RO31), a ditch to the south-west at TA 30125 32795 (RO35), a road or track near the cliff at Monkwith (RO41), a square enclosure north of Cliff Farm (RO67), and two ring ditches west of Pastures Lane (RO39).

While some of the features listed above may be of late Iron Age/Romano-British date, the only positive evidence for Romano-British occupation in the area is the recovery of the base of a greyware jar from the Sand le Mere area (RO87).

The radiocarbon analysis of peat found on the foreshore (RO86) determined that it had formed c 2000BP, presumably within the mere at Sand le Mere (RO93).

Anglo-Saxon/Early Medieval

Tunstall and Hilston parishes were joined with Roos in 1927, but were formerly separate. Roos village lies outside the study area, as do most of the former parish area, whereas Tunstall (*Tunestal* DB), Hilston (*Hildoveston* DB) and their lands lie in the coastal zone. Both of the latter placenames are of Anglian origin, although the name of Roos (*Rosse* DB) is probably of Celtic derivation. The Domesday settlement of *Andrebi* also lay in the parish, perhaps on the seaward side of Hilston (RO19), and there was also a township at Monkwith/Monkwick (*Moneuuic* DB) near TA 3045 3285 (RO34).

The period is solely represented by recovery of the articulated skeleton of a cow from Tunstall Beach, partly buried in earlier peat (RO86). The peat dates from the late Iron Age/Romano-British period, and was presumably within the lake at Sand le Mere. Radiocarbon analysis determined that while the peat dates from the late Iron Age/Romano-British period (c 2000BP), and was presumably formed within the lake at Sand le Mere (RO93), the bones were 1000 years more recent.

Medieval

Tunstall village was laid out either side of a north–south main street. There is a kink in the south across a stream, which effectively divides the village into two separate parts. The northern section consists of a number of houses and farms, with a church and green at the centre, the southern, based around Kiln House Lane, consists of a smaller number of houses farms, and terminates at Tunstall Hall, where medieval pottery has been found (RO94). The present village is shrunken, with two areas of earthworks visible (some possibly of post-medieval date). The first of these is in the northern nucleus, principally west of the main street (RO44), consisting of ditches, hollows and platforms. Some of the earthworks may mark the location of a moat (RO45). The second area is west of Kiln House Lane in the south (RO73), with a similar range of features, including two small enclosures. The church of All Saints (RO48) was largely constructed in the 13th century, of cobbles, with a tower, nave, chancel and north aisle. The tower was heightened in the 14th century, the nave rebuilt, and a south aisle added. There were later repairs, with a substantial restoration in 1875. A medieval cross base is located in the churchyard (RO47).

Hilston (RO12) is a shrunken settlement which now consists of a few houses and farms either side of an east–west road, although a church was built at the east end of the township in the 12th century as a chapel of Roos. The church of St Margaret (RO17), largely of cobbles, consisted of a chancel, nave and timber belfry. It was demolished in the 19th century and rebuilt, but was bombed in 1941 and rebuilt post-war in brick, although incorporating a doorway from the original church.

The hamlet of Monkwith formerly existed north of Tunstall, TA 3045 3285 (RO34), but had apparently been entirely lost to erosion by the mid 17th century. There was also a hamlet at Sand le Mere (RO95), although the last houses were lost in the 19th century.

The open fields of Tunstall extended south from the centre of the parish into the lower grounds, which also contained meadow. The East and West Fields lay either side of the village while the common pasture at Hogsey lay in the north on the higher land. Both Hilston and Monkwith probably had their own fields initially, but erosion led to their amalgamation with those of Tunstall. Hilston's probably lay to the north and south, and the inhabitants probably shared pasture at Hooks with Tunstall. Medieval ridge-and-furrow has been identified near Hilston (RO20), mostly still extant. The area was already being drained during the medieval period, with Roos Drain (RO102), constructed in the 13th century as Roos Stream, and known as Keyingham Fleet by 1358.

A mill was recorded in Tunstall in 1246. Placenames commemorating mill sites include Howmill close, in the south-west corner of the parish, and Mill Hill, north-west of the village.

In the Hooks area at the north end of the parish, where the parish boundary heads north cutting off the corner of East Garton, a substantial enclosure of medieval or post-medieval date, 59 x 65m, is centred at TA 2900 3454 (RO4). The purpose of this is unknown, although it resembles a moat. North of here is a smaller enclosure, 23 x 27m, at TA 2894 3493 (RO2) near the cliff edge, and hence at risk.

Post-Medieval

The commonable lands had been reduced by early enclosure in the 17th century, and by 1779, those remaining were enclosed. Areas of old closes were located near Hooks in the north (probably originally pasture), and land south of Tunstall. There was enclosure of pasture at Hilston in 1657, the fields having already been enclosed by 1669. Parts of the former open fields of Monkwith were used as pasture by the mid 17th century. Extensive post-medieval ridge-and-furrow in the parish (RO15, RO60) reflects agricultural practices contemporary with the early enclosure. The outlines of the fields probably follow those of former furlongs in the open fields, and are respected by the orientation of the ridge-and-furrow.

The mere at Sand le Mere was already being eroded early in this period, although the remains of the lake were protected by a bank before 1622, which was still being maintained in the early 20th century (Sheppard 1912, 154). Maps of 16th- to 18th-century date show the mere, with a beck draining south-west to the Humber, although Burleigh's map of c 1560 seems to suggest it was a small bay used by fishing boats at spring tide, together with Withernsea mere: the bank was presumably later if that is the case.

The period is represented by the buildings forming the various settlements and farms, which are principally of post-medieval and modern date. Hilston Hall, built by the Storrs in 1754, had been demolished by the early 19th century (RO104). Surviving buildings at Hilston include the listed late 17th-century Glebe Farm (RO13), and an unusual octagonal brick look-out tower on Hilston Mount (RO9), built in 1750 by justice Joseph Storr (although later named after his son, Admiral John Storr). At Tunstall were the 18th-century Manor Farm, (RO53), Town Farm, (RO51) and Hall Farm (RO80). There is also an early 18th-century listed barn near Manor Farm (RO52).

Modern

Again, the non-military monuments mainly comprise structures associated with Tunstall, including a 19th-century pinfold (RO59). South of Tunstall, and east of Kiln House Lane (RO65), was a kiln which gave the lane its name. This has been listed as a pottery kiln in the SMR, although there was brickmaking in the area as a whole, as well as limeburning. The beach was used to extract gravel for road repair and other purposes in the 19th century, particularly in the 1860s; this activity has left no visible traces, although the large scale of this quarrying is likely to have contributed to the high rate of erosion during the period.

As might be expected in a parish with such a long coastline, there are a large number of features associated with World War 2.

Near the northern parish boundary was a pillbox sited inland (RO6), while on the cliff at Hooks was a clifftop track, five pillboxes (RO7) and a trench (RO5). Inland to the south (RO14) was a further pillbox. Also inland and north-east of Hilston was a pillbox (RO8). South of here was a clifftop pillbox (RO11) and trench (RO16).

On Hogsea Lane, 300m inland was a pillbox, protecting the approaches to Hilston (RO22); further south were several buildings which may represent a searchlight battery, at TA 2994 3294 (RO32). On the coast immediately south of Hogsea Lane was a cluster of features including an Operation Diver AA battery (RO26), consisting of four gun emplacements and several buildings, a military camp, with seven huts of various types (RO28), three square brick pillboxes (RO22, 24, 29), a standard lozenge-shaped pillbox slightly inland at TA 30285 33175 (RO25), a trench (RO30), and weapons pit (RO27). Inland at TA 30165 32895 was a pillbox (RO33), with a further example at Mill Hill (RO37). A trapezoidal minefield was located on the coast to the south at TA 30735 32585 (RO38). On the clifftop in this area, and connecting to Pasture Lane was a clifftop trackway giving access to the military zone on the cliff top (RO64), but continuing southward beyond Sand le Mere.

South from the minefield area, the beach was protected by barbed wire (RO42). Immediately north of Seaside Lane was a clifftop pillbox (RO49). Another example at TA 31194 31960 (RO46) was used as the base for a post-war ROC Orlit post, with a nearby underground monitoring post, used to monitor nuclear fallout in the event of a Soviet attack. Nearby at the end of Seaside Lane near the Coastguard House were two single gun emplacements (RO54, 58) and weapons pits (RO56, 61, 62). In the same area was a pillbox (RO55), reused after the war as the base of another ROC Orlit post between 1950–65, and associated with an underground monitoring post constructed in 1959.

Inland, north-west of Kiln Farm, Tunstall, was a single pillbox (RO63).

In the south, on the cliffs east of Cliff Farm near Sand le Mere was an army camp (RO69), consisting of three groups of Nissen huts, protected by a comprehensive system of defences (generic number RO94). These included two gun emplacements for beach defence (RO72), pillboxes (RO75, 77), weapons pits (RO61, 85, 89), trenches (RO74, 76, 88), one possibly including a field gun position. There was also an area of clifftop anti-tank cubes at TA 31765 31225 (RO82). Barbed wire was sited on the beach (RO79), together with a gun emplacement with access track (RO70), anti-tank cubes (RO66, 71, 99 101), supported by 320m and 50m long anti-tank ditches (RO92, 97). A pillbox was sited on the edge of the sand dunes and beach (RO83). A little inland of here was a series of banks and trackways surrounded by barbed wire (RO100), and a pillbox (RO96).

Discussion

The prehistory of the area is potentially of considerable importance owing to the presence of a mere (RO93) at Sand le Mere in the south of the parish. Although only traces of the western end remain, this potentially includes areas of lake-bottom sediments and peats on the foreshore platform, normally protected by sand, but periodically exposed. The remains of structures may reflect the presence of an early community, although further scientific examination would be required. Peat from the area was sampled in 2000 following the recovery of the partial articulated skeleton of a cow (RO86); while the bones were probably of Saxo-Norman date, the peat was c 2000 years old, suggesting that it was still forming in the late Iron Age/Romano-British period. It is assumed that the animal died in the mere, although this cannot be determined. The mere itself appears on a number of 16th- to early 18th-century maps of the area, and was artificially maintained from at least the early 17th century by means of a bank constructed at the seaward end. In common with most of the natural stream network in the area, the mere drained south-westward towards the Humber rather than into the sea, along the line of modern Tunstall Drain.

There is little direct evidence for Neolithic occupation, although a possible long barrow (RO43) has been located immediately outside the study area near Glebe Farm. For the Bronze Age, possible round barrows have been identified near Hilston (RO18) and Kiln Farm, Tunstall (RO68). There is scattered undated activity across the area, including ditches and enclosures; these are more likely to be principally of late date (late Iron Age/Romano-British), although there is no direct evidence for Roman settlement.

The medieval and early post-medieval periods are represented by the remains of two areas of earthworks in the village of Tunstall (RO44, 73), including a possible moat (RO45). Hilston is also a shrunken settlement, although no earthwork evidence for this was identified in the study area. Monkwith (RO34) has been lost apparently without trace, while the site of *Andrebi* has not been identified. Burleigh's map of c 1560 suggests there was a landing place at Tunstall, near the Drain, and a quay seems to be shown immediately north of the mere.

Roos was heavily defended during World War 2, particularly the areas of coast south of Hogsea Lane and at the mouth of Tunstall Drain near Sand le Mere. The former was the site of a Diver battery for anti-V1 deployment (RO26), with a concentration of pillboxes and other defences, while the latter included several gun emplacements and a network

of tank traps, pillboxes, trenches and weapons pits, designed specifically to break up and delay any beach assault. Two pillboxes were adapted in the Cold War period for use by the Royal Observer Corps as monitoring posts in the event of a third world war (RO46, 55). This involved the addition of a prefabricated concrete room (constructed by Orlit Ltd) for the observation of Warsaw Pact aircraft, and an underground bunker for monitoring nuclear bursts and subsequent fall-out.

There is no evidence for monuments at risk from erosion other than those associated with World War 2, although a potential threat to the archaeology of the area is a proposal by English Nature to retreat the line at Tunstall Drain and create new environments such as saltmarsh, coastal and floodplain grazing marsh and reedbeds. This, however, is dependent on several factors, principally a decision by the Environment Agency to move the defences of the Drain as the cliffs retreat.

4.14 Rimswell *(Maps 17, 18)*

Geology and topography

The underlying solid geology is Upper Cretaceous Flamborough Chalk, overlain by boulder clay. The soils in the area are principally fine loamy silts of the Holderness Soil Association changing to the reddish till of the Flint Soil Association in the south/east. Towards the coast the boulder clay lies mainly at 7m above sea level, rising to 15m inland. To the north of the parish there is lower lying ground around the Roos and Tunstall drains.

The parish forms part of Shoreline Management Unit 8, where the coast is retreating at between 0.35–3.2m a year, decreasing towards the south where the cliffs reach Withernsea.

Historical and archaeological summary

Prehistoric

Palaeolithic

No records of this date in area assessed.

Mesolithic

No records of this date in area assessed.

Neolithic

No records of this date in area assessed.

Bronze Age

No records of this date in area assessed.

Iron Age

No records of this date in area assessed.

Late Iron Age/Romano-British

A cluster of Iron Age/Romano-British enclosures and associated boundary ditches are recorded on aerial photographs lying towards the eastern edge of the study area to the north-west of Withernsea at TA 3276 2855 (RM44). The largest enclosure contains a possible hut circle with a diameter of c 20m. A boundary ditch leads to the enclosures from the north-west, and to the south-east, further associated boundary ditches, both perpendicular and parallel, suggest a more extensive field system.

Situated close by to the south-east, another ditched enclosure and boundary ditches are visible as cropmarks on aerial photographs (RM45). The large enclosure lies to the north-east of three parallel east–west aligned field boundaries.

There are a number of undated linear ditches, enclosures and ring ditches of probable prehistoric date which are listed here for convenience.

Near the northern parish boundary, north of Flagstaff Farm, lie a linear earthwork and ring ditch (RM13), with a rectangular enclosure situated to the south-west (RM14). Further north a rectangular enclosure has been identified at TA 31795 30735 (RM10).

Located to the north-east of ditched enclosure complex RM44 is the cropmark of a ring ditch (RM43). A rectangular double enclosure is situated close to Owthorne Mill at TA 3245 2905 (RM42).

Anglo-Saxon/Early Medieval

No monuments or find spots of this period have been identified in the study area. Rimswell village is of Anglo-Saxon origin (*Rimesuuelle* DB); it however lies 2km inland beyond the area of study. The present parish of Rimswell includes a number of settlements of Anglo-Saxon origin including Waxholme (*Waxham* DB) and the settlement and manor of Newsham which was lost to erosion in the medieval period.

Medieval

Waxholme (RM31), which is situated close to the cliff, centred at TA 3275 2975, consists of a number of 19th- and 20th-century houses and farms lying to the east of a north–south aligned road. The road, which formerly continued northwards along the coast to Tunstall, has been lost to the sea. The southern and eastern extents of the settlement are marked by a stream which probably formed the rear boundary of the original medieval property plots which fronted onto the road. Towards the southern end of the village, to the west of the road, lies the site of a medieval chapel at TA 3250 2950 (RM35). The southern extent of the chapel precinct may also have been formed by this stream. The chapel is described as being ‘lost’ in the 18th century.

Waxholme is surrounded to the east, south and west by extensive medieval open field systems. Parts of these field systems are visible on aerial photographs as earthworks and cropmarks of ridge-and-furrow centred (RM40). The area to the east of the

settlement represents the open East Field. Elsewhere medieval and post–medieval ridge-and-furrow has been identified towards the north of the parish near Mona House (RM21, RM16). Much of the ridge-and-furrow in the north of the parish has been ploughed out and is only visible as soil marks.

Post-Medieval

Monuments from the post-medieval period are chiefly related to buildings within the village of Waxholme; these are mainly unremarkable buildings of late post-medieval or early modern date (mid-18th to mid-19th century).

To the south-east of the village, close to the location of the former medieval chapel, lies the site of some post-medieval poorhouses (RM34). A date for these is unspecified, but they may post-date the 'lost' chapel.

Outside the village, the period is represented by a number of monuments, including farms and a windmill. In the north-west of the parish lies Rhenish Farm (RM23), which may be associated with post-medieval ridge-and-furrow (RM16). Situated slightly to the north-east lies Flagstaff Farm (RM17). The open fields of Rimswell were enclosed in 1615, as were those of much of Waxholme, although some open field land remained at the latter until the 20th century.

Situated inland is Owthorne Mill (RM41; RM41). This brick built tower-mill is thought to have been constructed in the late 18th or early 19th century for the processing of cereals. Although not under direct threat from erosion the mill is now in a derelict state.

Modern

Lying close by, and reflecting Waxholme's proximity to the sea, is the site of a former early 19th-century watch house (RM33). This may have been replaced by a coastguard station built c 1826 (RM7), the site of which lies towards the northern boundary of the parish. The coastguard station was occupied until the early 20th century, after which the disused houses were destroyed by the sea.

The modern period is dominated by World War 2 defensive installations. Towards the northern edge of the parish, to the south of Sand le Mere, lies the remains of a possible concrete pillbox (RM1). It is in poor condition and has already been greatly damaged by erosion. A row of concrete anti-tank blocks (RM4) runs into the sea nearby. They were in poor condition in 1992 and are now considered to be at risk. Nearby a weapons pit (RM6) was located astride the barbed wire perimeter of a nearby pill box (RM3). Another weapons pit (RM2) and an infantry trench enclosed by barbed wire (RM5) are visible on aerial photographs. Monuments in the area already lost to erosion include a pillbox (RM3) and a 'U'-shaped infantry trench (RM8).

The remains of a re-inforced concrete beach-light emplacement (RM9) is situated on the beach to the north-east of Redhouse Farm. It was in poor condition in 1992 and is considered at risk from erosion. Inland from here, to the north of Redhouse Farm lies a 'lozenge' type pillbox (RM12).

Further south on the cliff to the east of Redhouse Farm lies another group of WW2 defensive structures, a number of which have already been lost due to erosion. These

includew a weapons pit (RM19) astride the barbed wire perimeter of a pillbox (RM18). Nearby is the site of an Operation Diver AA battery (RM20), which had been destroyed by 1992. Two pillboxes plotted from aerial photographs, (RM11, 18) had also been destroyed by 1992, as had 'V'-shaped trench (RM15).

Lying approximately 1km from the coast at Rhenish Farm was a Nissen hut, hut base and four cylindrical concrete roadblocks (RM22).

To the south-east on the cliff to the north and east of Waxholme village were fortified farm buildings with associated barbed wire (RM25) centred at TA 3276 2995, and a pillbox (RM26), now lost. To the south at TA 33155 29575 lies the site of another pillbox (RM32) of standard 'lozenge' shaped design. To the south-east of Waxholme, slightly inland, is an extant pillbox (RM39).

A circular weapons pit (RM27) was located at TA 3287 2991 to the north of a pillbox with further associated weapons pits (RM30). An undated bank and ditched enclosure (RM24) appears to be related to these features.

Further south a number of monuments have already been lost. At North Cliff the site of a concrete pillbox with a barbed wire perimeter (RM11) was destroyed by 1992; nearby was the site of a circular weapons pit (RM36).

Discussion

There is no definite evidence for early occupation in the study area that would pre-date the late Iron Age/Romano-British period. However, it is possible that a number of the cropmarks of undated ring ditches may be of earlier date.

The evidence for Romano-British occupation is represented by cropmarks of enclosures and ditches belonging to associated field systems RM44 and RM45. One enclosure includes a small circular enclosure which may represent a house, implying the presence of a farmstead located within a pattern of small fields. These lie approximately 1km inland and are not in immediate danger of erosion.

The next period where there is evidence for sites affected by coastal erosion is the medieval period. The settlement and manor of Newsham was lost to erosion in the medieval period and it would also appear that the northern parts of the village of Waxholme (RM31), along with the coast road to Tunstall, may have also been lost to the sea. Any extant ridge-and-furrow around the village, especially in the East Field, would be in danger of erosion; however much of it has already been ploughed flat.

No monuments of post-medieval date appear to be under threat from erosion in the study area.

The largest single group of monuments, and the largest group at risk, is that of the World War 2 defences. Many of the cliff top sites have already been lost. These include an Operation Diver AA battery (RM20); pillboxes (RM3, 11, 18, 26, 32); infantry trenches (RM8, 15); along with a circular weapons pit (RM36).

Other World War 2 monuments including the remains of a beach-light emplacement (RM9) situated on the beach to the north-east of Redhouse Farm; the remains of a

possible concrete pillbox (RM1) and a row of concrete anti-tank blocks (RM4) both to the south-east of Sand Le Mere, appear to be in the process of destruction.

The remaining World War 2 defences including pillboxes and weapons pits are all highly vulnerable to coastal erosion.

4.15 Withernsea *(Maps 18, 19)*

Geology and topography

The underlying solid geology is Upper Cretaceous Flamborough Chalk, overlain by boulder clay lying between 7–15m above sea level. The soils in the area are principally the reddish till of the Flint Soil Association. A spur of marine alluvium of the Wallasea 2 Soil Association runs into the parish from the south-west along the Patrington level; a broad alluvium-filled, flat-bottomed valley drained by the Winestead Drain. Here the alluvium lies below 7m. Along the boundary with Owthorne, a gap in the boulder clay connects the lower-lying levels with the coast. It was in this hollow that a mere referred to in the medieval period was situated, and gave the last element of the name of Withernsea (WT36). This large mere quite probably included the site of the submerged forest, Noah's Wood (WT30), exposed in the early 19th century at TA 3435 2825; the mere itself was breached by the sea in the 15th century, but was still shown as a large bay in 1560 (Burleigh's chart). The 1st Edition Ordnance Survey (1855) shows 'Withernsea Mere' at c TA 3450 2801 and the site of 'Owthorne Mere' a little further north at c TA 3429 2810, but these small 19th-century meres are likely to have reformed among later sand dunes or silts which had built up in the former mere basin since the 15th century; a shallow bay was still present. The discovery of two Bronze Age canoes among buried forest at TA 3425 2825 (WT29) in the 18th century does suggest that the original basin stretched some distance inland.

Withernsea forms Shoreline Management Unit 9. The hard defences and groynes have halted erosion and led to the accumulation of foreshore material, although the low water mark is moving westward, and will eventually have an impact on local stability.

Historical and archaeological summary

Prehistoric

Palaeolithic

The Palaeolithic is represented by a single elephant's tooth (WT28) which was found on the sands at the foot of Owthorne cliffs. It had presumably come from Palaeolithic deposits eroding out of the cliff.

Mesolithic

Lying on the shore at Owthorne at TA 3435 2825 are the remains of a submerged forest of Mesolithic date, known as Noah's Wood (WT30). This was uncovered during spring tides in 1839, when animal bones and freshwater mollusc shells, suggestive of a freshwater lake, were also found. Its location, presumably notional, is shown on the 1st Edition Ordnance Survey (1855) at c TA 3450 2825, just offshore from the sites of the

19th-century sites of Owthorne and Withernsea Meres. It probably formed in or adjacent to the site of the original Withernsea Mere, which was breached in the 15th century.

Neolithic

Three Neolithic stone axes (WT77) represent the only finds dating to this period in the study area. One is described as coming from Owthorne, another from the foot of the cliffs to the north of Withernsea and the third from the shore at Withernsea. It seems likely that at least two, if not all three of the axes, had originated from Neolithic occupation deposits eroding from the cliff.

Bronze Age

In 1785 a complete Bronze Age dugout canoe (WT29) was recorded in lacustrine deposits located some 50 yards to the south-east of the site of St Peter's church. It appeared to lie in the remains of a submerged oak and hazel forest landscape at TA 3425 2825, presumably part of the former mere basin. A second smaller canoe is said to have been found sixty years earlier.

Iron Age

The only find from the study area that has been ascribed purely to the Iron Age is a carved chalk figurine from the beach (WT66).

Late Iron Age/Romano-British

Evidence for the occupation of the study area during the Romano-British period is represented by the discovery of a large oval pit containing Romano-British pottery (WT52) during a watching brief (EHU647) at TA 34435 27705 in 1996.

A number of find spots of Romano-British material seem to suggest that the occupation in the period was fairly widespread. Fragments of Roman pottery, possibly representing cinerary urns, were found around 1907, with further urns being uncovered during house building work on Bannister Street in 1908 (WT27). To the north of Withernsea a Roman coin (WT1) was found in 1965, whilst in 1960, towards the south of the town, Roman pottery (WT73) was recovered from the cliff face at TA 3505 2715. A Romano-British quern stone (WT77) has also been recovered from unknown locations in the town.

This seems to suggest the presence of Romano-British settlement in the study area, possibly obscured by present-day Withernsea, which has in places already succumbed to coastal erosion.

Anglo-Saxon/Early Medieval

The original settlement of Withernsea (WT65), appears to have been of Anglo-Saxon date (*Widfornessei* DB), and was probably sited next to a mere which separated the village from Owthorne (WT36). Much of the original village was lost to erosion in the late medieval/post-medieval period, the present town being largely a 19th-century creation following the construction of the railway in 1854, with later medieval elements.

Lying within the present parish of Withernsea, the settlement of Owthorne was also Anglo-Saxon in origin (*Torne* DB). Owthorne originally had its own parish which included four hamlets also bearing Anglo-Saxon names: Frodingham, Newsome, Rimswell and Waxholme. Rimswell is now a parish in its own right containing the settlement of Waxholme (see above).

Owthorne was lost to the sea in the late 18th to early 19th century and the present settlement was constructed inland of the medieval centre.

Despite the presence of several settlements of Anglo-Saxon origin, no monuments or find spots of this period have been identified in the study area.

Medieval

The medieval village of Withernsea (WT61) had an eel fishery on the mere to the north in 1260 (WT36). The Poll Tax rolls of 1377 state that there were still 151 payers in the village in the second half of the 14th century, but the village was destroyed and the mere breached by the sea in the 15th century. Buildings lost included the medieval parish church of St. Mary (WT20), which is known to have pre-dated the first decade of the 12th century. It was replaced by the church of St. Nicholas (WT54). Started in the mid 15th century, the building of the church was completed in the year 1488.

The medieval and post-medieval village of Owthorne (WT21) centred at TA 345 285 had already suffered from erosion in the 15th century. This continued throughout the post-medieval period, with much of it having gone by the early 19th century. Buildings lost included the church of St. Peter (WT24). Thought to have existed by 1086 and been of considerable size; the church was in disrepair in the 18th century, when it was endangered by the sea, and was finally lost in 1816. The sites of the medieval manor house (WT16), the medieval to post-medieval vicarage (WT18) and a number of windmills (WT19) all represent elements of the medieval settlement of Owthorne lost to the sea.

Situated on the cliff edge to the north of Withernsea at TA 3345 2915 aerial photographs show what has been interpreted as a small medieval close or moated site (WT6). This monument would appear to be in imminent danger from erosion.

To the west of the present town of Withernsea is an area of medieval and post-medieval ridge-and-furrow (WT46) which probably represents the South Field of Owthorne's open field system. The North Field lay to the north of Waxholme Road. The common pasture and meadow lay to the south of the South Field at Enholme. Owthorne was finally enclosed in 1815. This area now lies largely under a housing estate and nearly all of the ridge-and-furrow no longer appears to be extant. To the south-west, centred at TA 335 275, is the site of a possible deer park (WT60).

Post-Medieval

The site of the mere remained as a large bay as late as 1560, when it was shown as such on Burleigh's map, between 'Withorntsea' and 'Thorn' (Owthorne), together with Sand le Mere; the nearby map legend makes it clear both were used for fishing boats at spring tides. With the continual coastal erosion a number of post-medieval monuments were lost including a group of three beacons recorded in 1588 and one in the early 19th

century (WT86), apparently sited on the high ground beside the sea between Owthorne and Waxholme, although Burleigh's map of 1560 shows one sited immediately south of Withernsea. Post-medieval ridge-and-furrow (WT83) is visible on aerial photographs centred at TA 3508 2674. This area had been Withernsea's South Field, which was finally enclosed in 1797. It now lies mostly below caravan parks, but in areas where it may survive to the east it would be at risk from erosion.

As discussed above much of medieval Withernsea had already been lost to the sea during the later medieval and post-medieval periods. Its new focal point was the parish church of St Nicholas (WT54) situated on Park Avenue. Started in the mid-15th century, the building of the church was completed in the year 1488. It is a Grade II* listed building which was abandoned after losing its roof in 1609 and extensively re-built and restored in 1858–9.

Modern

Much of the medieval and post-medieval settlement of Owthorne, which is discussed above, along with the 18th-century school house (WT19), parsonage and two cottages (WT18) had been lost to the sea by 1844. After these events the focus of the settlement moved westwards. A replacement St. Peter's Church had been built further inland in 1802; this was followed by a replacement vicarage on Hull Road (WT48) in 1847 and a National School (WT47) built in 1848.

The erosion that destroyed the mere and the villages of Owthorne and Withernsea continued apace during the 19th century, when 2–3 yards were lost a year to the sea. From c 1870 groynes and sea walls were constructed to reduce further erosion.

A number of sites of monuments detailed in the gazetteer relate to the agricultural heritage of post-medieval Withernsea, including the sites of windmills (WT62, WT85); a smithy (WT40), a pinfold (WT74) and a 19th-century tithe barn (WT79). Nineteenth-century industry is represented by the presence of the sites of two brick and tile works (WT68, WT70) and a gasworks (WT53) located towards the southern outskirts of the town.

The maritime heritage is represented by the sites of a former lifeboat station built on Seaside Road in 1881 (WT39) replacing a former boat house (WT37) built in 1862 on Arthur Street. Dominating the town is the former lighthouse (WT41), a Grade II listed building constructed for Trinity House in 1892–3. The octagonal tower has six stages and is surmounted by a lantern, with an overall height of approximately 38m. To the south a passage leads to a pair of three-roomed adjoining houses. The outbuildings, garden wall and gateway (WT43) belonging to the lighthouse are also Grade II listed buildings.

Much of the present-day town is a largely 19th-century creation following the construction of the Hull to Withernsea railway in 1854 (WT55). Constructed by the Hull and Holderness Railway Company it ran from Withernsea to Victoria Dock Station in Hull. The railway station (WT50) which was built in white brick, with a later glass canopy on cast iron columns was opened in 1854 and closed in 1965. The Queen's Hotel (WT51), now the hospital, was built in 1853–4 to accommodate the expected visitors to the resort. In 1870 the Withernsea Pier, Promenade, Gas and General Improvement Company was established to promote the development of the town as a seaside resort

and a number or attractions were established in support of this, including pleasure gardens (WT56). In 1877 a 60m long pier was built; however it was demolished c 1900 after being repeatedly damaged by storms. All that remains is the pier gateway (WT44) consisting of yellow brick castellated towers. The closure of the railway line in 1965 and the contraction of the holiday industry have led to some decline in the town.

A Primitive Methodist chapel (WT15) built in 1858 on Alma Street appears to have been replaced by a second building constructed in 1878–9 (WT35). The town had formerly had both Wesleyan (WT22) and Anglican (WT14) chapels, neither of which appears to have survived.

Situated on the cliff north of Withernsea lies Black Mill (WT4), a now untopped, former brick windmill. Interestingly this mill was used as an observation tower during World War 1. This is in immediate danger from erosion.

Twentieth-century monuments in the study area are dominated by World War 2 coastal defences. Situated on the northern edge of the parish, a series of trackways and barbed wire (WT3) represent access ways and obstruction lines across the coastal defence system. Nearby was a weapons pit surrounded by barbed wire (WT2).

Lying to the south are two groupings of WW2 military buildings of unknown function (WT7, 8); WT7 may be the remains of a radar station. Hard defences located on the northern outskirts of the town included a set of 38 concrete anti-tank blocks (WT10) and a pillbox (WT5) north of Waxholme Road. The anti-tank blocks and pillbox had been lost by 1992. Two further groups of anti-tank blocks (WT9, 13), located to the north of the town were in poor condition in 1992. Inland from this point at Owthorne Caravan Park, a 'lozenge' shaped pillbox (WT12) was visible on aerial photographs dated to the 1970s, but had been demolished by 1992.

Situated on the seafront towards the centre of town are further anti-tank obstacles (WT42), consisting of buttress-shaped blocks positioned on the edge of the seawall, to impede a breakout from the beach. A line of wedge-shaped anti-tank blocks (WT35) which had run from the Pier to the slipway were demolished in 1995. Covering this part of the beach had been a pillbox (WT25) located at TA 34135 28325. It had been of an unusual type and unfortunately was destroyed in 1995 during alterations to the sea wall.

The southern part of the town was dominated by the coastal defences. A complex of military structures (WT71) included two camps located at TA 3443 2708 and TA 3467 2723, the latter with an associated tank trap. A military building of unknown function was located at TA 3481 2722. Hard defences included two pillboxes; whilst soft defences were represented by a pair of conjoined weapons pits. Anti-tank blocks (WT69) were positioned to channel potential invaders towards the above defences. A number of displaced concrete blocks (WT63) located below the lifeboat slipway at Southcliff Road appear to have originated from a former roadblock, the location of which is unknown.

The southern part of the seafront had been covered by three pillboxes. WT72 was located on the beach by the South Promenade. It had survived in fairly good condition until storms of 1993, after which, it was demolished. To the south WT49 is sited on the beach east of High Brighton Street steps; it is badly damaged and only fragments remain. Further south on South Promenade is the site of another pillbox (WT58), which is also now destroyed.

On the promenade east of Louville Avenue, a number of anti-tank blocks (WT76) have been incorporated into the promenade wall as sea defences.

Towards the southern outskirts of the town lay gun emplacements and associated pillboxes (WT80) surrounded by an extensive barbed wire perimeter. A further pillbox or gun emplacement may have lain in this area. To the west lay another pillbox and military building of unknown function (WT82). To the east of South Cliff, a pillbox (WT81) appears to lie on the beach and may no longer survive.

On the southern parish boundary was a pillbox and weapons pit complex (WT84) surrounded by a barbed wire perimeter.

To the west of the town centred lay another grouping of monuments associated with the coastal defences (WT24). These included two military camps with barbed wire perimeters centred at TA 3357 2850 and TA 3337 2776, along with an associated pillbox. A set of 26 concrete anti-tank blocks (WT57) situated to the west of Withernsea were described as being in good condition in 1992.

Within the town an infantry trench (WT59) was plotted from an aerial photograph at Lee Avenue, with another example (WT11) at Seathorne, to the east of Owthorne.

Other features removed at or by the end of the war included concrete roadblocks, of which several were sited at salient points throughout the town. Examples included one in Queen's Street (WT75), now demolished. Others were visible as structures on aerial photographs (WT64, 67). A fourth roadblock (WT34) had been sited on Hull Road by the 'Spreadeagle' play garden.

Discussion

The Palaeolithic period is represented in the study area by a single elephant's tooth (WT28) which was found on the sands at the foot of Owthorne cliffs. Although representing an isolated find its location would suggest that it had derived from deposits of Palaeolithic date eroding out of the cliff. Further erosion would continue to destroy any surviving deposits.

The prehistoric landscape is represented by the presence of a submerged forest of Mesolithic date (WT30) lying on the shore off Owthorne ('Noah's Wood'). Evidence recovered in the 19th century suggested a woodland habitat interspersed with freshwater lakes. As this habitat is already submerged it represents a good example of the results of an earlier rise in the sea level. The wood may, however, have been located around the margin of the original Withernsea Mere (WT36), which Burleigh's map of 1560 shows was a substantial feature, even after it had been breached in the 15th century.

Three Neolithic stone axes (WT77) represent the only finds dating to this period in the study area. The shoreline location of the finds suggests that the axes had originated from Neolithic occupation deposits eroding from the cliff. Again, any such deposits still extant would suffer further loss due to erosion.

Exploitation of the landscape continued into the Bronze Age and that period is fairly well represented in the study area. In the 18th century, two Bronze Age dugout canoes (WT29) were recorded in lacustrine deposits, located in the remains of a submerged oak and hazel forest landscape. Although this may not represent settlement of the area, it does indicate that during the Bronze Age period the meres, waterways and wooded landscape were being exploited by people living close by. The forest quite possibly represents a western counterpart of Noah's Wood: woodland growing around the fringes of Withernsea Mere.

The archaeological discovery of a pit containing Romano-British pottery during a watching brief (WT52) in 1996 and the presence of a number of find spots of Romano-British material from the Withernsea area seems to confirm occupation in this period. Fragments of Roman pottery, possibly representing burial practices, were found around in the early 20th century during building work on Bannister Street (WT27). A quern stone (WT77) was also recovered from the town prior to 1909. In the 1960s a 3rd-century Roman coin of Salonina, wife of Gallienus (WT1) was found to the north of Withernsea, whilst towards the south of the town, Roman pottery (WT73) was recovered eroding from the cliff face. This suggests the presence of Romano-British settlement in the study area, possibly obscured by present day Withernsea, which has in places already succumbed to coastal erosion. Any further erosion would result in the loss of any surviving deposits of this date, especially if they existed to the north or south of the town.

The effects of coastal erosion can be dramatically highlighted in the study area during the medieval and post-medieval periods. Much of the medieval settlement of Withernsea (WT61), including the church of St. Mary (WT20), had been lost to the sea by the mid to late 15th century, and the freshwater mere, which had provided a fishery, was also permanently breached. The focus of the village shifted westwards with the construction of a new church, St. Nicholas' (WT54), completed in 1488.

To the north the medieval settlement of Owthorne (WT21) survived into the post-medieval period, however the medieval church of St. Peter (WT24), the manor house (WT16) and the parsonage (WT18) had all succumbed to the sea by 1844. A small earthwork identified as a medieval close or small moated site (WT6) situated on the cliff top at TA 3345 2915 would appear to be the only monument of potential medieval date to be in imminent danger from erosion.

Medieval and post-medieval ridge-and-furrow (WT46) had survived to the west of the town until fairly recently, however it was no longer extant on 1984 and 1994 Ordnance Survey vertical photography. A housing estate appears to have been constructed over part of the area. To the south-west lies the site of a possible medieval deer park (WT60) which should not be under threat from erosion. Near South Cliff areas of post-medieval ridge-and-furrow (WT83) are visible as earthworks and cropmarks on aerial photographs centred at TA 3508 7674. They now lie mostly below caravan parks, but in areas where it may survive to the east it would by at risk from erosion.

The only post-medieval monument which appears to be in danger from erosion is Black Mill (WT4) which lies close to the cliff. Its proximity to the cliff is highlighted due to the fact that it had been used in World War 1 as an observation tower.

Much of the present town of Withernsea is a 19th-century creation, which developed as a seaside resort after the construction of the railway in 1854. A number of hotels and

seaside attractions including a pier and pleasure gardens were constructed within the town as a result. However the expansion of the town did not meet the expectations of the developers, as it did not to attract many visitors from further a field than Hull, many of which were only day trippers. Groynes and sea walls constructed from c 1870 have stabilised the seafront and allowed the accumulation of foreshore material. A number of late post-medieval and early modern buildings located within the town are detailed in the gazetteer, none of which are considered to be under threat from erosion.

The main 'at risk' category from the recent past are the remains of wartime installations. Most of the monuments listed in the gazetteer including trenches, weapons pits, barbed wire fences and road blocks were dismantled either late on in the war or shortly after. A number of others including pillboxes and anti-tank blocks, situated on the seafront, have been destroyed by later development or incorporated into sea defences. To the north of the town a number of sites representing obstruction lines (WT3), a weapons pit (WT2), the site of a possible radar station (WT7) and two groups of anti-tank blocks (WT9, WT13) all lie close to the cliff top. The survival or otherwise of these features should be determined.

Situated on the seafront towards the centre of town anti-tank obstacles (WT42) positioned on the edge of the seawall, might be under threat from the sea or even refurbishment of the sea defences. A pillbox (WT49) had been located on the beach east of High Brighton Street steps. It is most at risk as it is badly damaged and only 'fragments' remain.

The southern part of the town was dominated by the coastal defences. A complex of military camps and associated defensive structures including tank traps, pillboxes and weapons pits (WT71) can be seen on aerial photographs centred at TA 3467 2721. Parts of this area now lie under caravan parks and might not be at risk from erosion. A pillbox (WT81) and anti-tank blocks (WT69) on the beach, along with a number of displaced concrete blocks (WT63) located below the lifeboat slipway at Southcliff Road, which originated from a former roadblock, would be at risk. On the southern outskirts of the town located very close to the heavily-eroded South Cliff were a number of gun emplacements and associated pillboxes (WT80, 84). Significant elements of these monuments may already have been lost, and the survival of features should be determined.

4.16 Hollym *(Maps 19, 20)*

Geology and topography

The underlying solid geology is Upper Cretaceous Flamborough Chalk, overlain by boulder clay. The soils in the area are principally the reddish till of the Flint Soil Association. Much of the boulder clay lies at more than 7m above sea level, reaching 15m at one point to the south of the village. Along the western edge of the parish by Winestead Drain, is a wide expanse of alluvium of the Wallasea 2 Soil Association, lying below 7m. There is similar low lying ground around the Fosse which drains the northern part of the parish.

Historical and archaeological summary

Prehistoric

Palaeolithic

No records of this date in area assessed.

Mesolithic

No records of this date in area assessed.

Neolithic

No records of this date in area assessed.

Bronze Age

The only monument that can directly be assigned to this period in the study area is the cropmark of a Bronze Age round barrow (HL9) located at Smook Hills. Two further cropmarks of undated ring ditches (HL8, 17) may represent the remains of ploughed out round barrows of a similar date. None of the above features appear to be under imminent threat from erosion.

Iron Age

The Iron Age is represented solely by a find spot of a bronze coin of Cunobeline (AD 10-40) (HL23) found on the beach east of Neville's Farm in 1968. Its location on the beach suggests that it may have originated from an Iron Age deposit eroding out of the cliff.

Late Iron Age/Romano-British

A single Roman coin, an early 2nd-century denarius from the reign of Hadrian (HL22) represents the only Late Iron Age or Romano-British find in the study area. However it is interesting to note that its find spot lies close to the location for the discovery of the Iron Age coin (HL23) discussed above. The close proximity of these two finds might suggest the presence of a pre-Roman Iron Age site continuing into the 2nd century AD at least. If so it would appear to be eroding into the sea.

Anglo-Saxon/Early Medieval

Although the settlement of Hollym, meaning 'the homestead by the hollow' (*Holam; Holum* DB), is Anglo-Saxon in origin there are no finds or monuments within the study area of this date. The village is situated just over 1km inland, lying beyond the immediate area of assessment.

Medieval

Situated to the south-east of Hollym, just within the study area, the OS 1st Edition map (1855) shows 'site of moat' at TA 3555 2465 (HL30). The moat was presumably medieval in date, but there is now no sign of it in the surrounding marshy ground. The

site is beyond imminent threat from the sea. The only other monument from this period is the site of a medieval to post-medieval windmill (HL18) recorded as standing in North Field.

Post-Medieval

To the south and west of the 19th-century Intack Farm (HL14) are areas of post-medieval ridge-and–furrow (HL16). These appear to relate to the North Field of Hollym's open field system.

Further areas of post-medieval ridge-and-furrow (HL29) are visible as earthworks and cropmarks on aerial photographs centred at TA 3595 2478. This lies in an area of old enclosed land known as North and South Leys, which were probably used as stinted pastures. South Leys had been enclosed by the early 18th century and North Leys by 1751. The open fields and remaining common land had all been enclosed by 1797.

Modern

Situated towards the top of the cliff in the northern part of the parish lies the site of the early 19th-century Intack Farm (HL14). Much of the farm appears to have been lost. On the northern edge of the parish early industry is represented by the site of a former brickworks (HL1). This site lies close to Withernsea South Cliff and may be under threat from erosion.

The modern period is largely represented by a number of World War 2 monuments, as elsewhere on the coast, although many have already been lost. The northern part of the cliff was defended by a number of military installations located around the site of Intack Farm, visible on aerial photographs. These included fortified farm buildings with associated barbed wire, trackways and military buildings (HL13) centred at TA 3577 2591. To the rear trackways and barbed wire (HL12) formed access ways and obstruction lines across the coastal defence system centred at TA 2586 2599.

To the north lay an Operation Diver AA battery (HL4) centred at TA 35615 26185. It had consisted of four gun emplacements and a number of associated huts, with nearby searchlight emplacements (HL7). The huts of the battery survived only as cropmarks on aerial photographs as early as 1947 and both sites had been destroyed by 1992.

The whole area had been covered by five pillboxes, four of which (HL3, 6, 11, 15) had been of the standard 'lozenge' design. All of these had ceased to exist by 1992. The fifth (HL10) located to the east of Intack farmhouse differed slightly from the standard design. This pillbox was in good condition in 1992, but was at that time considered at risk.

Situated inland from these defences was a military camp (HL2) located at TA 3458 2645 which now lies below a caravan park.

A semi-circular trench enclosing a circular weapons pit (HL19) was formerly located on the cliff midway between Intack Farm and Neville's Farm.

Lying inland from this point towards the village of Hollym was a High Frequency Direction Finding radio station (HL20), used to locate German submarine and surface vessel radio signals. The station comprised two brick and concrete huts with a short

aerial tower which formed part of an aircraft navigation system. Although not at risk from erosion the site had been destroyed by 1992.

Another cluster of defences was sited on the cliff to the east of Neville's Farm, including a beach defence gun emplacement (HL21), and a re-inforced concrete block thought to be the base of a radar mast (HL24). Weapons pits were located to the north of Neville's farmhouse (HL25) and on the cliff to the south (HL26). Hollym Beach at the southern edge of the parish was guarded by a minefield (HL27) contained within a 240m x 40m barbed wire enclosure. A 'V'-shaped trench (HL28) had been positioned on the edge of the minefield.

Aerial photographs show that the coastal defences located east of Neville's Farm southwards had been constructed between July 1940 and March 1941. Most if not all, with the possible exception of the site of weapons pit HL25 north of the farmhouse, have now been lost to the sea.

Discussion

There is little evidence for early occupation in the study area. The Bronze Age is represented by the presence of a cropmark of a round barrow (HL9) located at Smook Hills. Two further undated ring ditches (HL8, 17) may also represent ploughed-out round barrows of this date. None of the above features appear to be at imminent risk from erosion.

The Iron Age and Romano-British periods are represented by a bronze coin of Cunobeline (AD 10–40) (HL23), found on the beach east of Neville's Farm and an early 2nd century denarius from the reign of Hadrian (HL22) found nearby. The close proximity of these two finds on the beach might suggest the presence of a pre-Roman Iron Age site which continued into the 2nd century AD at least. If this is the case it would appear to be eroding into the sea.

There are no monuments from the medieval period in the study area that are deemed to be at risk from erosion.

Any extant post-medieval ridge-and-furrow (HL16) lying to the east of the Withernsea to Holmpton Road would be at risk from erosion, as is the former site of a 19th-century brickworks (HL1) on the southern outskirts of Withernsea.

In the modern period the World War 2 coastal defences seem to be bearing the brunt of the destruction by the sea. The northern part of the cliff had been defended by a number of military installations located around the site of Intack Farm. A number of these including fortified farm buildings with associated barbed wire, trackways and military buildings (HL13) may already have been lost. There is a possibility that some elements lying to the rear, which formed access ways and obstruction lines (HL12) across the coastal defence system, survive in some form.

Other larger sites already lost include an Operation Diver AA battery (HL4) centred at TA 35615 26185, along with nearby searchlight emplacements (HL7). Four pillboxes (HL3, 6, 11, 11, 15) which had covered the above sites had ceased to exist by 1992. A fifth pillbox (HL10) located to the east of Intack farmhouse was in good condition in 1992, but was at that time considered at risk. A semi-circular trench enclosing a circular weapons

pit (HL19) had been visible on an aerial photograph on the cliff midway between Intack Farm and Neville's Farm. This too would appear to have fallen victim to the sea.

Coastal defences on the cliff to the east of Neville's Farm have also now been lost. These included a beach defence gun emplacement (HL21) and a supporting weapons pit on the cliff to the south (HL26). Close by on the beach a re-inforced concrete block base is all that remains of a radar mast (HL24). A weapons pit (HL25) to the north of Neville's farmhouse may be the only surviving element of these defences.

Further south the minefield (HL27) at Hollym Beach was presumably dismantled after the war and nearby trench (HL28) now appears to have been lost.

The only monuments from World War 2 that are not at risk of erosion are the sites of a military camp (HL2) located to the south-west of Withernsea and a High Frequency Direction Finding radio station (HL20) to the east of Hollym. The military camp had been visible on aerial photographs but now lies below a caravan park, whilst the radio station, although not at risk from erosion, had been destroyed by 1992.

4.17 Holmpton *(Maps 20, 21)*

Geology and topography

The underlying solid geology is Upper Cretaceous Flamborough Chalk, overlain by boulder clay. The soils in the area are principally the reddish till of the Flint Soil Association. The cliffs are around 10.0m OD in the north, reaching 35m OD near Dimlington, the highest point south of Flamborough; here there is an important exposure of glacial sediments, which is a SSSI. Erosion rates are 1.03–2.44m.

Historical and archaeological summary

Prehistoric

Palaeolithic

A flint scraper of Palaeolithic date (HM9) was found towards the northern edge of the parish at TA 3635 2435.

Mesolithic

No records of this date in area assessed.

Neolithic

No records of this date in area assessed.

Bronze Age

No records of this date in area assessed.

Iron Age

No records of this date in area assessed.

Late Iron Age/Romano-British

Situated towards the southern edge of the parish are the cropmarks of possible Iron Age or Romano-British enclosures and field boundaries (HM58). There are no associated finds from the site to confirm the dating, so there is a possibility that they may be of more recent date.

The only definite find of this date in the study area is that of Roman coin, a silver denarius of Faustus (HM36), found north of the village at TA 3650 2350.

Anglo-Saxon/Early Medieval

The name Holmpton is an Anglo-Scandinavian hybrid meaning the 'farm near the shore meadows'. The site of a manor at *Holmetone* is mentioned in Domesday Book (HM34).

Medieval

Holmpton is sited on a ridge of boulder clay much of which lies over 15m above sea level. The village lies partly along the main coast road and partly along a side road leading to the cliffs. Another side road marks the northern limit of the village garths and some houses stand along narrow lanes between the side roads. The houses date largely from the 18th century onwards and are constructed from brick with some beach cobble.

The medieval parish Church of St. Nicholas (HM44) is a Grade II listed building. It consists of a chancel, nave and battlemented tower, which was rebuilt in brick in 1832. Much of the rest of the building was rebuilt in 1874, with further repairs undertaken in 1901.

The site of the medieval manor house (HM43) is said to be situated to the south-west of the church. This may be represented by the remains of a medieval moated site (HM45); two sides of the moat are visible, together with platforms, banks and hollow ways, possibly representing shrunken medieval village remains. The parish had a windmill by the 14th century (HM62), perhaps near Mill Hill, which was the site of a later structure.

Medieval and post-medieval ridge-and-furrow (HM32), centred at TA 3703 2358, represents elements of both the North and South Field of the village's open field system. The last of the common land was enclosed by 1800. Any extant ridge-and-furrow near the cliff would be at risk of erosion.

Post-Medieval

Holmpton contains a number of buildings, or sites of buildings dating, dating from the post-medieval and early modern periods, none of which are at risk from erosion. The site of the early post-medieval parsonage (HM42) lies in the village to the east of the church. It is known to have existed by 1535, was constructed largely from mud and thatch and may have had medieval origins. It was demolished in 1821 and replaced by a building now known as the Old Rectory (HM41).

The earliest surviving secular building in Holmpton may be Manor House Farm (HM48) located within the core of the village. The building appears to have originated in the 17th century, but was renovated in the early 19th century. Nearby Manor House Farm is the site of what is described as an 'ancient' dovecote (HM50). It, or another 'ancient dovecote' (HM35), is described as being 'on a farm in Holmpton'.

Situated slightly to the north of the centre of the village is the site of Holmpton Hall (HM28). The buildings, which were thought to date from the reign of Queen Anne (1702–14), were replaced by the present Holmpton Hall (HM27) built in 1886 to the north-east.

Holmpton village contains a number of other buildings of interest, including Primrose Cottage (HM30), thought to have been of late 18th-century date. There was a 'cottage' owned by the Knights Hospitallers in the village by the time of the Dissolution, mentioned at the time the order was briefly refounded in 1558 (HM60); its site is unknown.

Modern

Buildings constructed in the 19th century include the present Holmpton Hall (HM27) built in 1886, and the early 19th-century Lavender Cottage (HM46). A Wesleyan Methodist chapel (HM48) was built in Out Newton in 1820 and rebuilt on the same site in 1878. A Primitive Methodist chapel (HM33) was constructed on Main Road in 1891. OS maps of 1855 shows the location of a School House (HM37) and Poor Houses (HM29) north of School Lane. The George and Dragon Public House (HM49) may have dated back to the late 18th century and has been previously known as 'The Man's Head', 'The Board' and 'The George'.

Monuments reflecting the village's agricultural heritage are represented by the sites of a smithy (HM51) and pinfold (HM31).

The only 19th-century building threatened by erosion is Cliff House Farm (HM22), located on the cliff. The farm complex includes house, foldyard, barn with horse-engine house, granary and shelter sheds. The end bay of the barn and the cart sheds to the east of the fold yard have already been lost to the sea, the rest is at serious risk. The site of the coastguard station and its cottages has already been lost (HM59).

All of the threatened 20th-century monuments relate to the World War 2 coastal defences, mostly constructed between July 1940 and March 1941, along with post-war early warning systems and monitoring posts. Towards the northern parish boundary were the sites of a gun emplacement and four associated trenches (HM2). Situated close-by was an air gunnery range shelter (HM5), which had consisted of a brick building covered with earth. These monuments were supported by two 'lozenge' shaped pillboxes and anti-tank blocks sited near a stream known as 'The Runnell'. The first pillbox (HM3) had originally had a blast wall which has been lost, and the superstructure itself was sliding off its base into 'The Runnell' in 1992. A second pillbox (HM4) has already been lost and lies below the low water mark as concrete rubble. At least seven anti-tank blocks (HM1) lie below the low water mark off 'The Runnell', but would have originally been on the beach. To the south lay a 'V'-shaped infantry trench (HM7) and a weapons pit/trench (HM6).

A second emplacement (HM8) of unknown use, but possibly for a battery, lay on the cliff to the north of the coast roads leading from Holmpton. There was also an associated military building and trackway. Another flat-topped military building (HM19) had been destroyed by 1992. Nearby there were three 'U'-shaped trenches (HM12, 15, 17), along with a weapons pit (HM13). Directly behind these defences were trackways and barbed wire obstruction lines (HM20). These appeared to have been positioned to block the two coastal roads.

Located slightly inland from these features were a number of supporting defences which may also have been positioned to defend the roads. A pillbox surrounded by barbed wire (HM21) lay to the south of the northern coast road. To the north of the road a 'lozenge' shaped pillbox (HM16) was located at TA 3702 2415. During the 'Cold War' in the early 1960s the pillbox had also functioned as a Royal Observer Corps 'Orlit' post, when iron railings and a ground zero indicator had been added. Situated further north was another WW2 pillbox (HM10), which also appeared to have been used at a later date as a ROC observation post. Midway between these two pillboxes was a 'V'-shaped infantry trench (HM14). Although not directly on the cliff top these monuments are near enough to be at risk from erosion in the future.

On the cliff to the south of the coastal roads is the position of a former minefield (HM26). It had been contained within a rectangular perimeter of barbed wire measuring 170m x 70m. Covering the northern edge of the minefield was a concrete pillbox (HM24) which was constructed on the beach, but had been lost by 1992. Nearby were the sites of two weapons pits, one (HM25) to the north of the minefield and the second (HM38) to the south near a 'V'-shaped trench (HM39).

Another minefield (HM52) had been positioned on the cliff towards the southern parish boundary at Old Hive. This was a large site measuring 350m x 100m. The northern edge of the minefield had been defended by a concrete pillbox (HM47) and a 'V'-shaped infantry trench (HM54). Close by was a circular weapons pit (HM56). On the beach at Old Hive was a single row of re-inforced concrete anti-tank cubes (HM53).

Two other WW2 monuments lie within the parish but are set further inland. The first is the site of an Operation Diver AA battery (HM40) positioned to the east of the village on the top of Mill Hill. It consisted of four gun emplacements along with ancillary buildings. The second is the site of a former searchlight battery (HM18) which had been located to the north of the village, to the east of the Withernsea Road. This had consisted of one large and two small emplacements along with two associated huts. These two monuments lie sufficiently inland to be deemed not at immediate risk from the sea; however, little of the monuments may remain.

There are a number of post World War 2 military defence installations, dating to the 'Cold War' period, in the study area. Lying to the south-east of the village on Rysome Lane is the site of RAF Holmpton, a former 'Rotor' radar post (HM57), which was an integrated command and control system in use until the late 1950s. It was an early warning system responsible for directing fighter aircraft to intercept unidentified radar plots. Information gathered form the radar masts was processed in a two storey, underground concrete bunker, entered by a single stair shaft. Parts of the site are now restored and open to the public and the full restoration should be completed by 2010.

To the north-east of the village lies the site of Easington/Out Newton Post 20/T.2 (HM11), which was a ROC underground monitoring post opened in 1965. It consisted of an underground re-inforced concrete bunker intended to monitor and record the position and strength of nuclear explosions. It took the form of a typical monitoring post, apart from the fact that the 'button' ground zero indicator mounting was located on a brick pillar on an adjacent WW2 pillbox (HM16) mentioned above. This site lies fairly close to the cliff so it is not only under threat from neglect, but also erosion.

Discussion

There is little evidence for early occupation in the study area; this was confined to the discovery of a single flint scraper of Palaeolithic date (HM9), found towards the northern edge of the parish.

The Late Iron Age or Romano-British period appears to be represented by cropmarks of enclosures and field boundaries (HM58) lying towards the southern edge of the parish. There are no associated finds from the site to confirm the dating, so there is a possibility that they may be of more recent date. The cropmarks lie approximately 0.5km from the sea and are not at immediate risk from erosion. However if they had been part of a more extensive settlement spreading north-eastwards, those easternmost elements may have been under threat. The only definite find of this date in the study area is that of Roman coin (HM36) which came from north of the village.

Although the settlement of Holmpton is thought to have been of Anglo-Scandinavian origin, there are no known monuments of this date in the study area. Most of the monuments of medieval date, for example the church (HM44), the site of the manor house (HM43) and a moated site with platforms, banks and hollow ways (HM45) lie within the core of the village and are therefore not at risk from erosion. Much the same is true concerning the post-medieval period.

The only non-military building of note of recent date threatened by erosion in the study area is Cliff House Farm (HM22). The farm complex is located on the cliff top and is at serious risk. The end bay of the barn and the cart sheds to the east of the fold yard, have already been lost to the sea. Any of the extant medieval and post-medieval ridge-and-furrow (HM32) that lies close to the cliff is also at risk.

As with most of the other parishes on this part of the Holderness coast, the single greatest group of monuments at risk from erosion are the World War 2 coastal defences, along with a number of 'Cold War' military installations. Some of the World War 2 monuments such as minefields and barbed wire obstruction lines would have been dismantled after the war. Soft defences such as weapons pits and trenches may survive as earthworks if they have not already been lost to the sea. A number of hard defences such as anti-tank cubes, gun emplacements and pillboxes remained in place after the war, along with a few military buildings; however their close proximity to the cliff has left them at serious risk and a number have already been destroyed.

Anti-tank blocks (HM1) lying below the low water mark off the Runnel and on the beach at Old Hive (HM53) are under serious threat, if they have not already been destroyed. Two gun emplacements (HM2, 8) which had been on the cliff have also been lost, as has a military building (HM19).

Three of the pillboxes (HM4, 24, 47) have been destroyed and a fourth (HM3) appears to be at serious risk as it was sliding off its base into 'The Runnel' in 1992. An air gunnery range shelter (HM5) which consisted of a brick building covered with earth might survive on the cliff edge, but would be in immediate danger of erosion.

Located slightly inland three pillboxes (HM10, 16, 21) appear to survive intact, and two were used as post-war ROC observation posts. Nearby a 'V'-shaped infantry trench (HM14) might survive as an earthwork. Although not directly on the cliff top these monuments are near enough to be at risk from erosion in the future.

Two other WW2 monuments, an Operation Diver AA battery (HM40) positioned to the east of the village on the top of Mill Hill and the site of a former searchlight battery (HM18) located to the north of the village, lie sufficiently inland to be deemed not at immediate risk from the sea, however little of the monuments may remain.

There are a number of post World War 2 military defence installations, dating to the 'Cold War' period, in the study area. Lying to the south-east of the village is the site of RAF Holmpton, a former radar post (HM57). Parts of the site have been restored and are open to the public and site is not considered to be at risk from either neglect or erosion.

The same cannot be said for the site of Easington/Out Newton Post 20/T.2 (HM11), which was a ROC underground monitoring post. When it was surveyed the entry hatch was coverless and the ventilation shafts were broken. It was recommended for scheduling in the Cold War MMP report of 2001, however by 2003 the condition of the post had deteriorated and it had not been scheduled. This site is also at risk from erosion.

4.18 Easington *(Maps 21–26)*

Geology and topography

The underlying solid geology is Upper Cretaceous Flamborough Chalk, overlain by boulder clay. To the north, west and south-east of Easington the soils consist of boulder clays of the Flint and Burlingham 2 Soil Associations. These lie above the 7m mark, rising to over 30m towards Dimlington and Out Newton, where the cliffs are at their highest. The village of Easington sits on a spur of chalky till of the Holderness Soil Association. To the south at Kilnsea the boulder clay lies around 10m above sea level.The southern fringe of the parish, lying along the shore of the Humber Estuary, consists of the marine alluvium of the Newchurch 2 Soil Association. This area lies almost entirely below the 7m mark. Stretching southwards from Kilnsea for 5km across the mouth of the Humber is Spurn Point, formed by sand dunes and marine shingle of the Sandwich Soil Association.

The cliff at Easington Gas Terminal forms Shoreline Management Unit 10; the rate of annual retreat is c 1.5m. South of the Terminal is Unit 11, where the annual rate of loss is 0.94–5.6m. Between the Terminal and Kilnsea, the cliff lies at the level of the upper beach and has been overtopped by sands and gravels, with lagoons created to the rear; there is considerable erosion of early soil horizons here (Plates 22, 23), leading to the exposure of Neolithic and Bronze Age features, and the coastal spit is likely to be lost, breaching the lagoons.

The eastern coast of Spurn Point, Unit 12, is to some extent currently fixed by sea defences, but storm surges lead to periodic breaches of the headland, which is maintained by southward migration of sediments. The western coast faces onto the Humber Estuary, and there is accretion of foreshore silts in the area. The historic tendency has been for the headland to shift westward, as the balance between erosion and deposition on the east side seems to be slightly in favour of the former, leading to considerable past and present losses of land at Kilnsea (Plates 25–8), where there have been recent attempts by the Environment Agency to create new flood defences (Plate 29).

Historical and archaeological summary

Prehistoric

Palaeolithic

No records of this date in area assessed.

Mesolithic

No records of this date in area assessed.

Neolithic

During the excavation of a Bronze Age barrow (EA117: see below), evidence for a Neolithic occupation site (EA119) spanning the early 4th millennium BC to the mid or late 3rd millennium BC, was uncovered at TA 4087 1806. Rows of postholes probably represented a long rectangular building; associated hearths and pits were also uncovered. Finds from the site included over 650 sherds of Neolithic pottery, saddle quern fragments and a loomweight, possibly the earliest found in Britain (Selkirk 2006, 530). Over 750 pieces of worked flint were recovered, included a polished adze, a tranche-type arrowhead, along with narrow blades, knives and scrapers. Charcoal recovered from one posthole gave a radiocarbon date range between 3915–3650 BC. Further evidence was found beneath a second barrow nearby (EA105), where there was also a henge of late Neolithic or early Bronze Age date (EA104). These features lie on the beach to the east of the flood bank and are at serious risk from erosion, if they have not been lost already.

A single Neolithic flint scraper (EA217) was found further down the coast towards Spurn Point at TA 4175 1515.

Bronze Age

Towards the northern edge of the parish at Cliff Cottage, Out Newton lies the site of possible Bronze Age round barrows (EA18) at TA 3845 2215. This area also contains a number of undated monuments visible as cropmarks on aerial photographs, which may be of a similar date. These include earthworks (EA17) at Cliff Farm, a trackway or droveway (EA23) at TA 3845 2215, an enclosure (EA8) north of Out Newton and a double ring-ditch (EA19) at TA 3815 2225. Of these, EA17, EA18 and EA8 lie closest to the cliff edge, and although not at immediate risk, will be in the future.

Located further south just to the north of the gas terminal lies the site of a possible Bronze Age round barrow (EA49) at TA 4005 2015. Although close to the cliff it will presumably be afforded protection due to its close proximity to the gas terminal. To the south of Easington sewage works there are a group of possible Early Bronze Age pits, a round barrow and a number of other cropmarks (EA94). These lie some way inland and are not at risk from erosion.

To the east of the village at Easington Cliff, finds of pottery and animal bone, along with a wooden spear, indicated the presence of a Late Bronze Age or Early Iron Age occupation site (EA59). An undated deer antler and animal bone (EA69) which is thought to have been thought to have been prehistoric in date was found at TA 40575 19255 and it seems likely that it relates to this or a nearby site. Fieldwalking by Humber Wetlands Project at TA 4050 1930 produced a flint assemblage and sherds of Bronze Age pottery (EA67).

An important group of monuments was excavated between 1996–8 on Easington Beach, where erosion is severe (Selkirk 2006: see gazetteer for further details). Here, a Late Neolithic/Early Bronze Age henge (EA104) at TA 4097 1828 and associated round barrow (EA105) were revealed by tidal action in 1998. The henge consisted of a double ditched and banked enclosure with an overall diameter of 25–30m. Cutting into the ditch fill was a pit containing the cremated remains of a young man who had died around 2500–2000cal BC. The upper fill consisted of estuarine clay, probably representing a later rise in sea level. The nearby round barrow, formed by a ditch with an external bank, measured 17m across and contained the remains of an adult crouched inhumation and sherds of a collared urn. It would appear that this barrow was extant into the 20th century. A second barrow was visible nearby as an earthwork on aerial photographs (EA117), and was excavated in 1996–7. It contained a Beaker burial: both mounds overlay the Neolithic deposits discussed above. As mentioned above, these monuments were uncovered by tidal action and the henge and barrow EA105 lie on the beach to the east of the flood bank. They are at serious risk from erosion, if they have not been lost already. Barrow 117 is sited within what is now a lagoon behind a low seabank at the head of the beach.

Stray finds dating to the Bronze Age from Easington Beach include a socketed axehead (EA92) and a leaf-shaped spearhead (EA62). These may well have originated from the monuments and deposits detailed above.

Lying to the south-east, an excavated Bronze Age barrow group (EA138) which included a cremation urn, is described as having been at c TA 4150 1750. Although the grid reference is an approximate one, it lies out to sea, suggesting they have already been lost. To the south-west, fieldwalking produced four late prehistoric flakes (EA144).

Inland from this point to the west of the flood bank, on either side of Firtholme Road, are a number of cropmark sites which may be of a similar date. These include a circular enclosure (EA106), a ring-ditch (EA136) and a linear feature (EA127). Nearby to the south-east within 1km of the Humber, are cropmarks of two possible round barrows lying to the east (EA130) and south (EA142) of Lockham Farm. Undated human remains (EA134) were also found at Lockham in the 1950s. This group of monuments does not appear to be at immediate risk from erosion. Fieldwalking undertaken to the north and east of Lockham Farm by HWP recovered a number of flint artefacts which appears to support a late prehistoric date for a number of the above cropmark sites. A number of

undated flint flakes and two chunks were found at TA 3980 1790 (EA121–124, whilst six late prehistoric flakes and a core came from TA 4050 1760 (EA129). Undated flakes and chunks were recovered from TA 4050 1790 (EA125) and a Bronze Age scraper, seven flakes, an undated blade-like flake and an undated chunk were found at TA 3980 1810 (EA108, 109, 111–113).

Further down the coast the remains of a Bronze Age sewn-plank boat (EA163) were found on Kilnsea Beach in 1996. It was discovered lying near eroded peat deposits representing a former marsh, mere or tidal creek at TA 4175 1665, which now lies off shore; the peat was sealed by estuarine clay representing a later rise in sea level. The boat itself was presumably used as transport between the marsh and the sea, as it represents a type normally considered to be capable of maritime use. Great Pit Marsh (EA225), shown on early 19th-century maps held by ABP to the south-east of Warren Cottage, is represented by a group of ponds, possibly the remnants of natural meres, although they no longer exist and cannot therefore be dated.

Evidence for occupation is represented by the presence of a prehistoric field system and three possible Bronze Age round barrows (EA217) centred at TA 4195 1515. This might be the same monument as (EA169), a possible Bronze Age round barrow and other cropmarks west of Easington Road. These monuments are already largely lost to erosion, as the stray finds from the beach would suggest, and any surviving elements are at serious risk. Stray finds from Kilnsea Beach include a Bronze Age leaf-shaped spearhead (EA312), and fragments of Late Bronze Age or Early Iron Age cinerary urns (EA236) recovered in 1957. To the west, fieldwalking produced three undated flint flakes from TA 4120 1610 (EA179) and a flint chunk from near the Humber shore at TA 1090 1580 (EA200).

The sites of three possible Bronze Age round barrows (EA165–7) lie near Kilnsea Grange, with a third nearby (EA159); none of these appear to be endangered at this time. At greater risk is a cropmark site of ditches (EA162) located to the east of Kilnsea Grange. Fieldwalking at TA 4030 1710 produced four late prehistoric flakes (EA144).

To the south of the Bird Observatory lies a cropmark of an undated circular enclosure (EA231). This may be prehistoric, but given its location it could also be a World War 2 feature.

Iron Age

Two Iron Age coins (EA61) were found on Easington Beach, the same location as Late Bronze Age or Early Iron Age site EA59 discussed above; it would appear that the coins had eroded out of the cliff, indicating continuity of occupation.

Further south along the shore, sherds of Late Bronze Age to Early Iron Age pottery (EA216) were found at TA 4165 1525.

Late Iron Age/Romano-British

To the north of the parish, a Roman quern (EA32) which had presumably eroded out of the cliff was found on the shore near Out Newton.

Sherds of Romano-British pottery, including Huntcliff Ware, and other finds (EA96) were recovered after part of Easington Cliff collapsed in 1960–1, indicating the presence of a Romano-British settlement site being eroded by the sea. Iron Age and Romano-British coarseware pottery sherds (EA57, 102) have been recovered from the shore east of Easington Cliff and presumably originated from long-destroyed sites. A Romano-British plate (EA83) was found in the village of Easington itself.

Roman antiquities from the Kilnsea area (EA311) include kitchen middens on the Humber side, containing brooch and pottery fragments. A complete pottery vessel and headless skeleton was found in peat deposits at Kilnsea Beacon. Various fragments of pottery, including a Roman vessel (EA190), late Iron Age sherds found in 1960 (EA201), and coins (EA61) have been recovered from the Humber shore and Kilnsea Beach. Romano-British 'V' shaped ditches containing artefacts have been seen in a number of locations on both the river and seaward side of Kilnsea. One of these (EA191) recorded on the Humber foreshore at TA 4075 15850 in 1962 yielded 1st-century Romano-British pottery. A Roman coin (EA178), a denarius of Hadrian (AD 125-8), was found at Kilnsea Caravan Park. Most of the above appear to be monuments, or finds from monuments, which appear to be suffering from erosion both on the Humber and seaward side of Kilnsea.

To the north of Kilnsea, field walking undertaken by HWP north of Long Bank at TA 4030 1710, recovered 95 sherds of 3rd- to 4th-century Romano-British pottery (EA144). This concentration of pottery might suggest an area of occupation.

Anglo-Saxon/Early Medieval

The village of Easington (*Esintone* DB) (EA70) is of Anglo-Saxon origin, the name meaning 'Esa's farm'. The original parish contained the now lost hamlets of Northorpe and Dimlington (EA41) at TA 3971 2079, along with the surviving hamlet of Out Newton (EA12). Northorpe, the 'north village' is probably Scandinavian in origin, whilst Dimlington (*Dimleton* DB), the 'settlement by the pool' and Out Newton (*Niuueton* DB), the 'new farm' are Anglo-Saxon.

The modern parish of Easington now incorporates the former parish of Kilnsea (EA177), along with its former hamlets of Hutton (EA139) at TA 4122 1750, Ravenser (EA319) and Sunthorpe (EA183) near TA 3905 1605. Kilnsea (*Chilnesse* DB) meaning the 'kiln by the pool' and Hutton, the 'High Farm' are Anglo-Saxon in origin, whilst Ravenser and Sunthorpe are probably Scandinavian. South of Kilnsea lies Spurn Point, a forerunner of which was mentioned in 7th century and the spit was recorded in the Norse sagas as *Hrafnseyrr*, Hrafn's sandbank. By the 13th century it was known as 'Ravenser Odd', or headland, and later as 'Ravenser Spurn', a projecting piece of land.

The area around Kilnsea is the alleged location of a 7th- to 8th-century Saxon monastery (EA313) founded by Wilgils the father of Northumbrian St. Willibrord. However the exact location is unknown and there are no other monuments or find spots, which can be attributed to this period, in the study area.

Medieval

Much of present day Easington village (EA70) lies along the closely built up Hull to Kilnsea road and a number of small streets to the south. Seaside Road (EA95), which

now only leads to the beach due to 19th-century erosion had originally continued along the coast to Kilnsea. Humber Side Lane leads southwards to South End and the river. The line of old enclosures extending to South End suggests that in the medieval period Easington had a linear form typical of many villages in Holderness. The site of a medieval haven (EA101) was located to the south-west of the village at Easington Haven, somewhere near TA 3950 1850; still extant in the 14th century, it had silted up by the 16th, and no trace now remains; this may have been little more than a tidal creek with timber landing stages; Burleigh's map of c 1560 shows the shadow of what may be intended as a depiction of a jetty on the Humber, but neither this chart or later 16th- and 17th-century maps show an inlet. The open fields lay to the west and the east of the village, whilst the common pasture and meadows lay on the southern fringes of the settlement.

The village was clearly an important one in the medieval period. The parish church of All Saints (EA76), which is a Grade I listed building, lies at the heart of the village. It has a 12th-century nave, with aisles added c 1200. The west tower and clerestory date to the late 14th century. The church was restored between the late 18th and 20th centuries. In the church yard is a cross base (EA82) which is probably 14th to 15th century in date and is a Grade II listed structure.

Situated to the south-east of the church is Easington Tithe Barn (EA85), which is a Scheduled Ancient Monument and Grade II* listed building. Although its use as a tithe barn is debated, it is a fine example of a timber-framed aisled barn with a thatched hipped roof. Some recording work was undertaken in 1982.

A Manor House (EA309) was mentioned at Easington in 1260, perhaps the site of a hall and chamber let to the villagers in 1470-71, although Meaux Abbey also had a hall with chambers in the village in the late 14th century (EA320). This site might be that of a rectory (EA81) mentioned from the 16th century. Cottages for the use of the poor were built not long before 1348–9 (EA321). None of these medieval monuments are now extant.

Outside the village a windmill (EA54) was recorded from 1260 and may have stood on the same spot as later windmills, north of Easington. This site is not at risk; however the site of an enclosure with medieval pottery (EA47), located at TA 4010 2030, now appears to have been lost to the sea. Medieval and post-medieval ridge-and-furrow (EA91) is visible as cropmarks and earthworks on aerial photographs at TA 3920 1900. These represented remains of the village's West Field, but they had been mostly ploughed out by 1984. Stray finds of medieval pottery found whilst fieldwalking at TA 3980 1810 (EA110) and TA 4050 1810 (EA114) probably derived from the manuring of the village's East Field.

Lying in the north of the parish is the site of the lost village of Out Newton (EA12). It had a West and East Field with common pasture at Dimlington Firth. Present-day Out Newton (EA31) consists of a few houses loosely strung along the road to Holmpton. A medieval moated site (EA9) was extant in 1841, but has now been lost to the sea. Other medieval foundations in the area included the site of chapel of ease (EA13), mentioned as early as 1302 but ruinous in 1650. The ruins of the western gable survived near the cliffs in 1911, but have since been lost to erosion. The site of the St. Sepulchre Hospital (EA11) built in the reign of King John (1199–1216) is thought to lie in the vicinity of Out Newton. If not already lost it would be at serious risk, if this was the correct location. The

site of a windmill mentioned in 1276 and 1350 (EA37), located 0.5km inland at TA 3850 2150, is not at immediate risk.

Further down the coast is the site of the lost village of Dimlington (EA45). Originally a separate manor, OS maps of 1855 and 1891 show Dimlington with surviving open field systems extending westwards and at Dimlington Firth. The site of a medieval enclosure with pottery (EA47) was located at TA 4015 2035, but is now lost to the sea. The present settlement of Dimlington (EA41) is now represented by a single farm.

Much of the medieval and post-medieval village of Kilnsea (EA189) located at TA 4205 1595, was lost to the sea in the late 18th and early 19th centuries, with the last dozen houses going after 1852. It was originally connected to roads running north to Dimlington and south to Ravenser Odd. The site of the medieval church of St. Helen's (EA188), which is known to have existed by 1115, was in disrepair for much of its existence and most of the body of the church collapsed into the sea in 1826, to be followed by the tower in 1831. The village had a vicarage provided under an ordination of 1347, which still stood in 1650 (EA322), but had been demolished by the 18th century. The present settlement of Kilnsea (EA177) was constructed further west nearer the Humber shore in the 1840s.

Outside the original village, the open field system consisted of North, South and West Fields, with common pasture at Walker Butts and Kilnsea Warren. A stray find of medieval pottery found in the early 20th century at TA 4090 1580 probably represents manuring of the village's West Field. Rabbit warrens were first mentioned in Kilnsea area in 1268 with the sites of the East and West Warrens (EA233) thought to lie in the area. The sandy area to the north of Spurn Point, known as Kilnsea Warren (EA234), was certainly in use until the 18th century and may represent the location of its medieval predecessors. A medieval windmill (EA307) is mentioned in the Kilnsea area in 1268, although the exact location is not known. It was in disrepair in 1547 and was blown down in 1714.

The site of the lost town of Ald Ravenser (EA319) is thought to lie east of Spurn Point. The settlement probably pre-dated the Norman Conquest, but does not get a separate entry in the Domesday Book. Parts of the town may have existed into the 16th century, but it was subsequently lost to the sea. A chapel dedicated to Our Lady and St. Anne is known to have stood at Ravenser in the 15th century (EA316) but has now been lost, as has Ald Ravenser Beacon (EA315), which was of a similar date. Building remains (EA308) consisting of ashlar walls were seen at Old Den in the early 19th century and were thought to be part of the town, but as this was west of Spurn, this is unlikely, although what they actually represent is unclear.

The site of the town of Ravenser Odd (EA314), which had been on an island at the end of the medieval spit in the 13th and 14th centuries, is thought to be well to the east of the present Spurn Point. It was originally founded c 1230 as a port, but the sea had destroyed the quay by 1310 and two thirds of the town by 1346; it had entirely ceased to exist within the next 20 years. A chapel dedicated to the Blessed Virgin Mary (EA317) existed at Ravenser Odd in 1274, but it was destroyed between 1349–60. Three medieval windmills (EA318) were recorded in the area between the 1260s and 1296–7.

The study area contains three more lost villages, of which little is now known. The site of Hutton or Hoton (EA139) originally lay in Kilnsea parish, probably to the north-east of

Kilnsea village at TA 4150 1750. It appeared to have been lost in the 14th century. The Sunthorpe (alternatively Swinethorpe) (EA183) is thought to lie to the south-east of Kilnsea at TA 3905 1605. The village was probably lost to the sea in the later medieval period. Turmarr (EA60), of which virtually nothing is known, was probably located somewhere in the area of TA 4050 1950. However Sheppard (1912, 119) states that 'a field north of Easington, where there is a depression in the cliffs, is still known locally as Turmarr Bottoms'. The village had ceased to exist in the 14th century. In the north of the parish, the lost village of Northorpe, sometimes spelt Northorp, is thought to have been located near Dimlington and Out Newton. It is believed to have 'perished with Hoton, and was all gone in 1396'.

Post-Medieval

In 1771 the last common land in Easington parish was enclosed and the lower-lying ground was drained by a number of dykes which ran into the Humber via a series of sluices which included Winsetts Clough on the boundary with Skeffling (SE18), Easington Clough (EA149), Ireland's Clough (EA155), and Firtholme Clough (EA158). At this time a new flood bank 'Long Bank' (EA153) was built to prevent flooding from both the sea and the Humber.

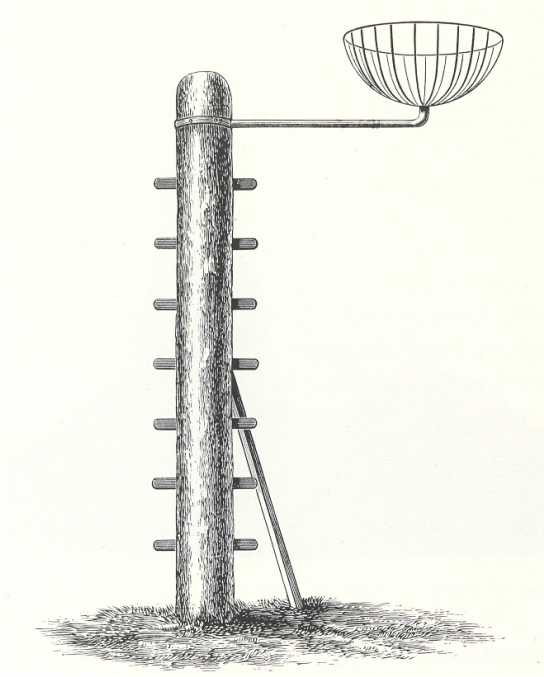

Plate 5 Dimlington Beacon, early 19th century

Monuments from the post-medieval period are chiefly related to the buildings within the villages and out lying farm houses which either survive or were demolished recently; these are mainly unremarkable buildings of late post-medieval/early modern date (mid 18th to mid 19th century). In Easington none are at risk from coastal erosion, and a selection of the principal examples is included in the gazetteer. The most interesting from a structural point of view include two Grade II listed mid to late 18th century farmhouses, the former Rectory House (EA73) and Thompson's Farmhouse, yard and

outbuildings (EA74, 66). An important building was the former Old Hall, constructed in the 17th century in Main Street, demolished c 1900 (EA324).

Lying to the east of the village of Easington, a rectangular banked enclosure (EA64) is visible on the cliff edge on aerial photographs at TA 4053 1939. It has been suggested that this was a post-medieval livestock enclosure, re-used for military purposes during WW2, but has now been lost to the sea. Post-medieval ridge-and-furrow (EA35, EA52, EA161) was located at TA 3872 2151, TA 4011 2011 and TA 4105 1677 respectively, but had been mostly ploughed out by 1984, lost to the sea or covered by Easington gas terminal.

To the north of Easington, a number of post-medieval monuments have been lost to the sea including the site of three beacons, known to have been sited at Dimlington in 1588 (EA38: Plate 5). One remained until 1850 at Dimlington Highland. A chapel of unknown date (EA44) was in a ruinous state at TA 3950 2150 in 1899 and was demolished in 1911 before the sea could claim it. There may now be no surviving trace of the settlement. Further north, the northern edge of Out Newton is at serious risk from erosion. Of the two locatable monuments, the poorhouses (EA20) and Model Farm (EA24), the former are most at risk.

A timber jetty is known to have existed at Kilnsea in 1691 (EA203), although its exact location is not known; it is presumably distinct from Easington Haven, and may have been near the point where Easington Road meets the Humber shore. To the north of the village there were sites of beacons (EA131, EA154, EA137), all of which have now been lost.

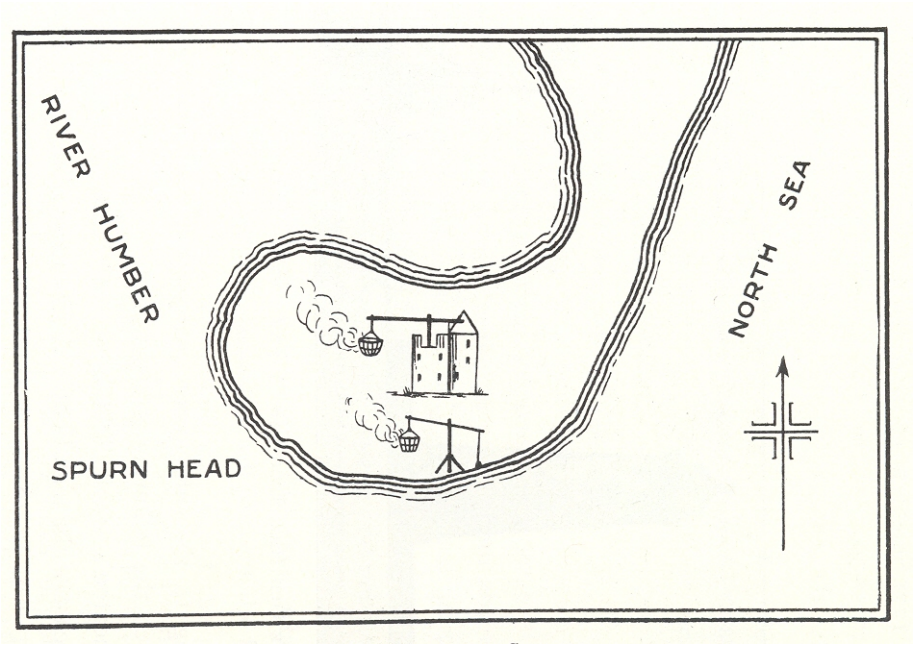

Plate 6 View of Angell's Lights, 1734

In 1674 Justinian Angell received permission to construct two lighthouses near the then south end of Spurn Head; Angell's High and Low Lights (EA241: Plate 6). The Low Light, located next to the North Sea shore, was destroyed as the headland shifted, but the

High Light, near the Humber shore, survived until 1776, by which time the headland had moved to the west, as well as extending southward. They were replaced by Smeaton's High and Low Lights (EA271, EA272) constructed in 1776. The Low Light was demolished and replaced in 1849, the High Light in 1895.

The military potential of Spurn Head was realised as early as the late 18th century when a signal station was built at TA 40155 10975 during the French Wars of 1796 and 1803 (EA281). A battery of six 24-pounder cannon was added in 1798, and barracks in 1804.

Modern

Although not listed, a large house called 'The Tower' on Seaside Road is of interest (EA80). It was built in 1857, has a first-floor balcony and a four-storey tower. A medieval pillar in the garden may have come from the church.

There are few remarkable buildings in Kilnsea, although the more interesting include the Church of St. Helen (EA192) built in 1864–5, the former coastguard station of c 1872 (EA204) and the former Blue Bell Public House (EA193) which was rebuilt in 1847 and is now the Spurn Point visitor centre.

In the mid 19th century, cobbles were quarried from the beach for ship's ballast and in 1841 Warren Cottage (EA222) was constructed for a bailiff, who collected revenue for every ton of stone quarried. Since 1945 it has functioned as a bird observatory.

Spurn is extremely vulnerable to damage by the sea and after an extensive breach of the point occurred in the storms of 1849, sea defences were constructed in the form of chalk banks (EA242) in 1855 and 1870. After suffering storm damage, Smeaton's Low Light (EA272) was demolished in 1849 and replaced by a light (EA268) on the landward side of the spit. This light was disused after 1895 and was subsequently used by the War Office to store explosives; the tower still exists. Smeaton's High Light (EA271) was demolished in 1895, leaving a circular compound wall which is now in a poor state. Smeaton's Lights were replaced by a single lighthouse (EA266) in 1893–5. This building is still extant, although it was automated in 1957 and closed in 1985. The Lightkeeper's cottage is a Field Study Centre.

As already mentioned, a signal station was built at TA 40155 10975 during the French Wars (EA281), with a battery of six 24-pounder cannon following in 1798; to these were added a barracks in 1804. After the battery was dismantled in 1809 the barracks were converted into a lifeboat station (EA282) and inn, the 'Life Boat House Hotel' (EA284). A row of cottages (EA254) was built for the lifeboat crew to the north-west of the lighthouse in 1819. In 1858 a new public house 'The Lifeboat' was built at the west end of the cottages. At about the same time a new row of lifeboat men's cottages was being built to the south of the lighthouse and a school (EA275) was added in 1893. Sub-rectangular enclosures (EA244), visible on aerial photographs and maps at TA 4070 1175, represent small 19th- to 20th-century fields or allotments belonging to this isolated community for home-grown produce or livestock husbandry. In 1822 a Watch House (EA283) was established on Spurn for the Preventive Water Guard, the forerunner of the Coast Guard, (possibly near the lighthouse, although the exact location in not known). A new lifeboat house (EA291) was constructed on the pier in 1913, and although no longer used, it survives in a roofed condition.

The need for the lifeboat is highlighted by the presence of a wreck of what appears to have been a collier (EA287), lying 30m to the seaward side of the Old Boiler on Spurn Head at TA 4025 1095. The wreck is only exposed at a 'High Water Spring' low tide. A ship's timber (EA237) was recovered from the foreshore. Other shipwrecks in the Spurn area are listed under 'wrecks' in the National Monument Record at TA 3937 2156 (EA34).

The largest group of monuments of this date in the study area are the 20th-century military coastal defences. Due to its geographical location, the Spurn area has a significant concentration of these defences. There are too many monuments to be dealt with individually, however the principal monuments are detailed below in an overview of the military history of the area, whilst an exhaustive list can be viewed in the gazetteer. Many of the monuments constructed for World War 1 were re-used during the World War 2 and were deliberately dismantled afterwards. Others have been demolished and used as sea defences or have simply now collapsed into the sea. Those that are left are at serious risk from erosion.

The advent of World War 1 saw the increasing militarisation of the Spurn Peninsula. The shelling of eastern coastal towns including Hartlepool, Whitby and Scarborough by the German North Sea Fleet towards the end of 1914, raised fears of raids on the hitherto largely unprotected Humber Estuary and the port of Hull.

Located offshore at the mouth of the Humber two large defensive island forts were constructed between 1915 and 1919. The larger of the two, Bull Sands Fort (EA306), is a Grade II listed building, consisting of a cylindrical steel structure on an octagonal concrete base. It was originally armed with four 6-inch breech-loading guns, but had been modified during the Second World War. At the end of the war the fort was placed under care and maintenance until demilitarisation in 1956. It was sold to the Humber Conservancy Board in 1964 and there are plans to convert it into a drug and alcohol detoxification centre.

By 1915 two large land-based gun emplacements, the Green Battery (EA294: Plate 8) at Spurn Head (TA 3993 1086) and the Godwin Battery (EA184: Plate 7) at Kilnsea (TA 4177 1606) had been constructed. The Green Battery comprised two batteries of two 9.2-inch guns contained within circular concrete pits. In addition smaller calibre 4-inch and 4.7-inch quick firing gun batteries, the Light Permanent (EA292) and Light Temporary Battery (EA302) were built c 1916 to provide close defence against enemy torpedo boats at TA 3983 1087 and TA 3978 1071. The Green Battery and its associated Light Batteries (below) were known as 'Spurn Fort' (EA301). The Spurn batteries had tall reinforced concrete battery observation posts (BOPs) with underground magazines and electricity generating rooms. They were protected by concrete walls, blockhouses (EA295, 286, 279), trench systems and tunnels. A searchlight emplacement (EA298) serving Green Battery was in poor condition in 1992. Both Green Battery and Godwin Battery had three associated barracks (EA290, 289, 186).

Much of the Godwin Battery has already collapsed onto the beach or been deliberately demolished to make it safe, although the massive construction of the gun positions and magazines will ensure that they remain on the beach as extant monuments for many years (Plates 24–8).

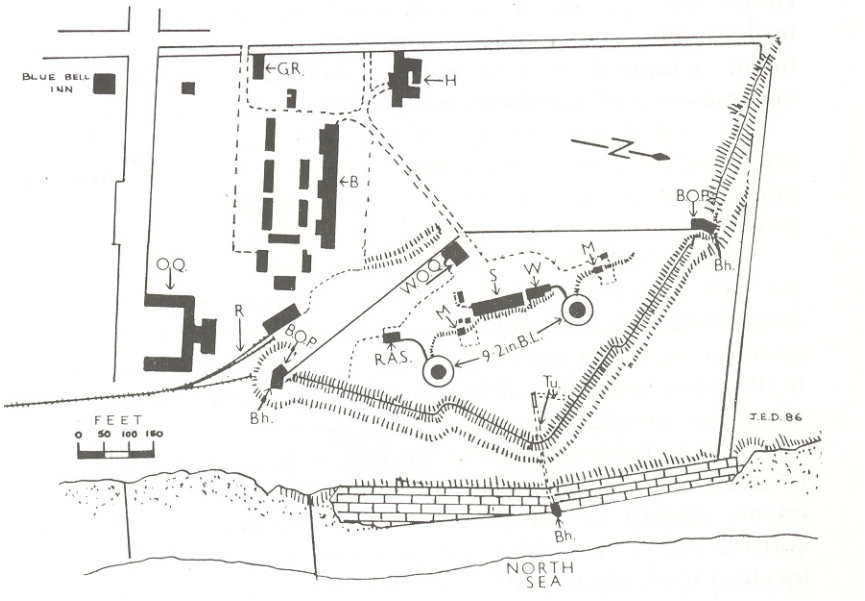

Plate 7 Godwin Battery, 1918 (Dorman 1990)

Between the two main batteries near the lighthouse, a large concrete and steel tower was built for the Port War Signal Station (EA259), just outside the boundaries of Spurn Fort. This building monitored and controlled the shipping entering the Humber Estuary, identifying 'friendly' vessels by means of a combination of visual and sound signals. It remained standing until the 1970s and is shown on the 1:2,500 scale OS map of 1971. An extant concrete observation post (EA265) at TA 40415 11265 is located at the south-western corner of a loopholed perimeter wall (EA261) which protected the Signal Station.

Other miscellaneous buildings dating to World War 1 have also been identified, including a troop shelter (EA297) at the Green Battery and the fragmentary remains of a blockhouse consisting of part of a concrete floor base situated at Spurn Warren (EA258).

Vast quantities of building materials and equipment were required for these major civil engineering works. However the contemporary road and railway network was inadequate to meet these demands. The problem was resolved by supplying the area by boat. A new jetty (EA293) was built at Spurn near the army camp at TA 3965 1086, and was linked to a narrow gauge railway, which extended along the whole length of the peninsula to a railhead (EA187) at the Godwin Battery. This line was known as the Spurn and Kilnsea Railway (EA243), but was not finally handed over to the military until 1919. The railway comprised a single line with passing places at intervals. The remains of various structures associated with the railway have been identified. These include the remains of a single storied steam locomotive shed comprising a concrete floor base and a section of track bed (EA263) at TA 40395 11305; various sections of *in situ* railway line were identified by a walkover survey and a second building represented by the remains of a concrete floor base (EA264), located to the north of the Spurn lighthouse were also identified. An early 20th-century photograph of the area, which was part of the Fortress Study Group Spurn Point Survey archive, shows that this building was connected to the main line by a siding.

Lying between the site of the Godwin Battery and Long Bank at TA 41060 16640 is a World War concrete 1 acoustic mirror (EA164), which functioned as an early warming system against approaching Zeppelins. It is a Scheduled Monument and Grade II listed structure, which at present is not at imminent risk from erosion.

After World War 1, the Spurn Point military installations were quickly reduced in military status to a 'care and maintenance' basis. The gun batteries were run down and Spurn Fort was mothballed. The 4.7-inch guns of the Light Temporary Battery were removed in the early 1920s; the 4-inch armament of the Light Permanent Battery followed in 1928 and the larger guns of the Green Battery were finally dismantled in 1933.

However by 1936 with the growing threat of war, plans were made by the War Office to upgrade the armaments at Spurn, but no funds were provided to carry out any of the proposed improvements. When war finally came in 1939 it took a new form. The Spurn fortifications had originally been constructed to withstand sea borne attacks from enemy shipping. Now there was an equal need to ward off aerial attack. To this end, a new anti-aircraft installation was developed at Warren Head (EA230), where the Bird Observatory and the Spurn Information Centre are now situated. A cluster of around thirty huts were constructed to house the men and women who manned the anti-aircraft facility. Some of these buildings remain, while of the remainder only the concrete bases of their floors survive. Initially the armaments comprised two 4.5-inch anti-aircraft guns to be replaced later by four 3.7-inch guns and two Bofors guns. The concrete holdfast of one of the 3.7 inch guns still remains *in situ*. This gun emplacement site was from 1944 onwards part of the Diver Fringe of Operation Diver and manned by 65 AA Brigade of the Royal Artillery. This comprised a series of 3.7-inch anti-aircraft guns, which were deployed along the east coast of England for the defence of the Midlands against the V1 flying bombs. A second such site was located on the seaward side of the Spurn Peninsula, though its precise whereabouts are uncertain.

The fear that the Spurn Peninsula might be a target for invasion by the Germans provided a huge stimulus to the construction of anti-invasion obstacles such as concrete anti-tank obstacles and road and rail blocks. Substantial remains of these features were noted during a walkover survey as having been removed from their original locations and dumped onto the beach to act as sea defences. Further blocks and anti-tank ditches, along with a covering pillbox, were put in at two points to the immediate south of the Chalk Bank (EA246, EA252). Here, the military railway passed through a narrow gap in the anti-tank defences. These blocks and the accompanying anti-tank ditches may still be seen on the ground.

By 1941 the military defences of the Spurn Peninsula had been greatly enhanced by the addition of two twin 6-inch guns at the former Light Temporary Battery (which replaced the older 4.7-inch guns). A 3.7-inch gun was also installed in one of the empty gunpits of the former Green Battery. Many other light anti-aircraft emplacements for Oerlikon cannon, Bofors and Lewis guns were spread out along the length of the peninsula. Other anti-invasion defences included minefields (eg EA235 at Kilnsea Warren), pillboxes (EA211, 250, 252, 269), beach searchlights (EA303–5), concrete road blocks (EA238), railway blocks (EA246), anti-tank obstacles (EA226), anti-tank ditches (EA247), weapons pits (EA227); blockhouses (EA260), beach tubular scaffolding and Spigot mortar positions. In addition Spurn had the only full-time Royal Observer Corps post at Warren Head, TA 41865 15095 (EA220), which had been destroyed by 1995. In early 1941 a concrete lane was constructed between Kilnsea and Spurn in addition to the

military railway. This road was breached several times by sea action in the 1960s, 1978, 1996 and c 2004.

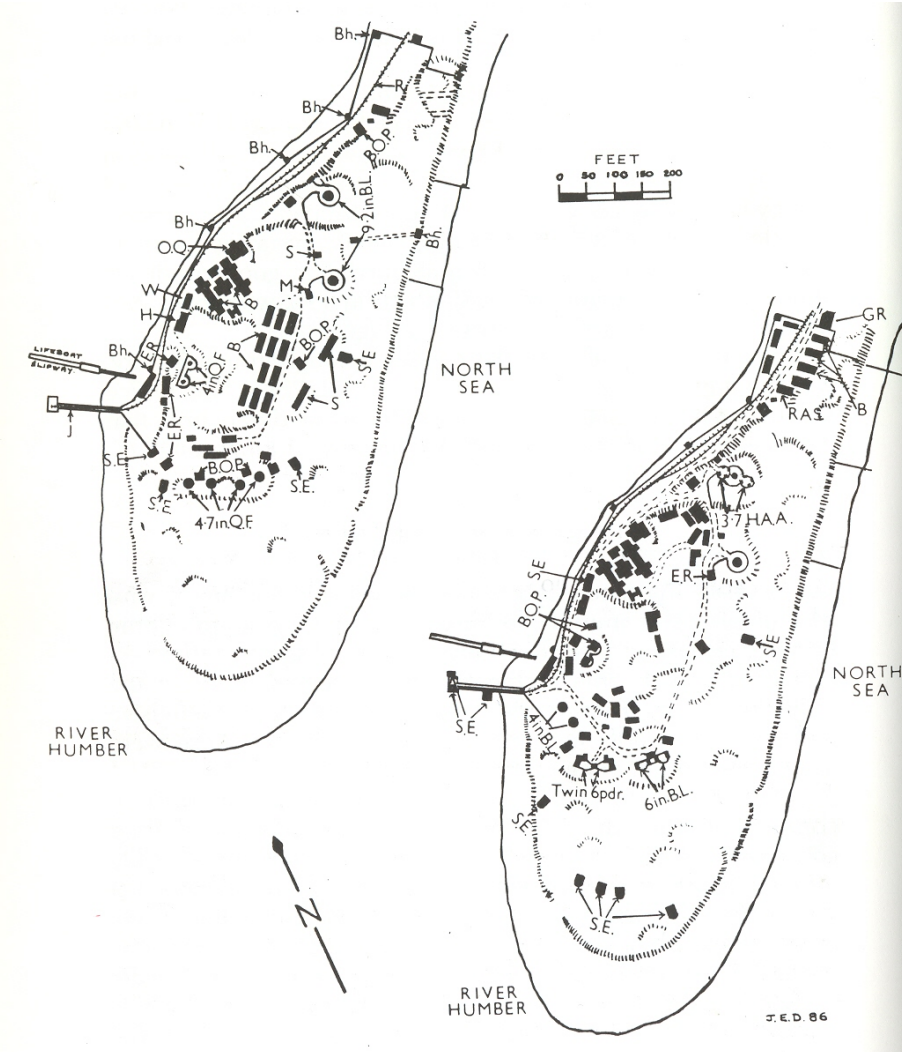

Plate 8 Spurn Fort 1915–18 (left) and 1940–45 (right) (Dorman 1990)

The Fortress Study Group in their survey of military sites at Spurn in 1995 and the RCHME in their survey of 1992 noted a series of engine rooms within the Port War Signal Station complex (EA259). These powered arc searchlights to guide the other defence and anti-invasion sites in the area such as gun and AA emplacements. The Port War Signal Station was connected to two concrete blockhouses.

The 1995 Fortress Study Group survey also included a ground measured survey of military sites in the vicinity of concrete railway blocks (EA246). This survey included known sites such as the anti-tank ditch (EA247) to the west and the pillbox (EA255), which protected the western end of the anti-tank ditch. In addition the survey also included anti-tank cylinders (EA249) and sockets for concrete road blocks (EA248). These features were located at the north-eastern end of the ditch and were not located during the walkover survey. They had presumably been covered by either dense vegetation or the sand dunes. However, the western arm of the anti-tank ditch (EA251)

was located during the walkover survey underneath heavy ground vegetation cover.

Other miscellaneous building remains and structures associated with this intensive World War 2 defensive network were identified as a result of a site walkover survey, although their existence and function has not been confirmed from other sources, with the exception of the site of one of two possible gun emplacements (EA267). The RCHME in their 1992 survey and the Fortress Study Group in their survey of military sites at Spurn in 1995 noted that this site was the location of a 4-inch gun, which originally faced the Humber Estuary.

The area around Kilnsea Warren, where Spurn Point joins the Holderness coast was defended by a minefield (EA235), along with road blocks (EA229, 212), along with a rail block (EA210). Rows of anti-tank blocks (EA213) had been positioned on the beach south of Godwin Battery, but have now been destroyed. The defensive structures were supported by a series of pillboxes (EA219, 232; 208, 211, 221). In support of these were weapons pits (EA227, 214). A group of military buildings (EA224) of unknown use were visible at TA 4190 1501.

The construction of a concrete roadway marked an end to the importance of the Spurn and Kilnsea Railway, though the railway would continue to operate until the early 1950s. In March 1944 Operation Flood Tide began a complete re-organisation of coastal artillery and many of the Humber batteries were reduced to a care and maintenance basis such that by 1945 all of the Humber batteries had been taken out of use. The Spurn and Kilnsea Railway was finally closed and demolished in the autumn and winter of 1951–2. In 1956 the Government decided to abolish the coastal defence artillery altogether. Equipment began to be removed in 1957 and in 1959 the military land at Spurn was put up for sale. In 1960 the Spurn Peninsula passed to the Yorkshire Naturalists' Trust, subsequently the Yorkshire Wildlife Trust bringing to an end some 45 years of military occupation. In 1969 the low voltage poles were erected along the peninsula. By the 1970s many of the remaining coastal defences were demolished and became used for sea defence.

To the north of Kilnsea Warren are a number of military sites associated with the coastal defences and the Godwin Battery (EA182). An Operation Diver AA battery (EA171) sited at TA 41663 16292 is thought to have been lost to erosion some time ago. Other defences include rows of anti-tank blocks (EA185) on the beach, which were in poor condition in 1992 and are at serious risk. A concrete pillbox (EA175) is linked to the Godwin Battery by a tunnel (EA176) which was in good condition in 1995. The Godwin Battery also had a 100m long trench (EA174) linked to a number of defensive strongpoints around its perimeter. A weapons pit, trenches and a trackway (EA168) had been located at TA 41607 1637. A close defence battery (EA194) with a single 4" gun was also constructed to protect Godwin Battery; its remains now lie on the beach in poor condition.

A number of military camps were noted on aerial photographs in the Kilnsea area including EA171 and EA207. The concrete hut bases of a camp (EA205) at TA 41455 15775 still survived in 1992, but were in poor condition. Another camp (EA173) was located to the south-east of Kilnsea Grange, but its Nissen huts had been destroyed by 1992.

Near Cliff Farm a pillbox (EA198) at TA 40945 15805 had slumped by 45° by 1992 and is at risk. Concrete anti-tank blocks (EA197) at TA 40930 15805, had originally been road blocks which have been rolled onto the beach, were in good condition in 1992. A double row of anti-tank blocks (EA213) at TA 41325 15405 formed part of estuary side defences. Other estuary side defences included a set of 45 anti-tank blocks (EA143) further inland at Easington Clough.

Away from Spurn Point other WW2 coastal defences were located to the north of the parish near Out Newton. At Old Hive was the site of a WW2 fire command post (EA5), which consisted of a semi-sunken structure with earth blast walls. It was supported by concrete pillboxes (EA1, 7) supported by weapons pits and trenches (EA2, 3, 4, 6). All of these monuments have either already been lost to the sea or are in imminent danger.

To the south on the cliff had been an Operation Diver AA battery (EA21) at TA 38705 22225. It consisted of four gun emplacements with associated huts, but had been destroyed by 1992. Close by in the vicinity of Cliff Farm lay two associated searchlight batteries: the first (EA15) lay to the east of the farm and consisted of the battery and associated buildings and defensive elements; the second (EA27) was a smaller complex lying to the north of the farm. Nearby defences included a pillbox (EA16), a weapons pit (EA14) and an infantry trench (EA10). Most of the above had been cleared by 1992.

Further down the coast near Model Farm was a WW2 Chain Home Extra Low (CHEL) radar station (EA30) located at TA 38955 21875. It consisted of a mast mounted radar scanner and associated outbuildings. The radar station was supported by a series on pillboxes, EA26, 28, 29. Another pillbox and trenches (EA25, 33) gave further protection. All of the above monuments had been destroyed by 1992. A 'Braithwaite' water tower (EA22) situated to the north-west of Model Farm served the nearby radar station.

To the south at Dimlington Cliff WW2 defences (EA42) were visible on aerial photographs located at TA 3970 2070 (centre). These included fortified farm buildings, other military buildings, weapons pits, barbed wire fences and a trench. A number of these may have already been lost and any survivors would be at risk. To the north trackways, and barbed wire obstruction lines (EA39) which were visible at TA 3928 2148 were probably dismantled after the war. In the area now occupied by the northern part of the gas terminal, military defences (EA52) included a minefield and a pillbox position or gun emplacement.

Further south lay a radar station with associated buildings and defences (EA53) at TA 3979 1994 and nearby military buildings (EA49). Although the structures may have been dismantled after the war the sites of the monuments may be safe from imminent erosion due to their proximity to Easington gas terminal. Two weapons pits (EA56) were located inland at TA 3957 1976 and TA 3954 1978. Just to the south of the gas terminal lay a group of WW2 military buildings and emplacements (EA63), which probably represented the location of a searchlight battery. Although not at risk from erosion they do appear to lie under a housing development.

The site of a military camp (EA71) is visible on aerial photographs on the eastern outskirts of Easington village and other military buildings (EA68) were located at Blacksmith's Corner at TA 39795 19255.

WW2 coastal defences on Easington Beach (EA86) located to the north of Long Bank included military buildings, a tank trap, a minefield, trenches, weapons pits, trackways, barbed wire obstruction lines and four pillboxes. Beach defences included lengths of railway sleepers set at angles in to concrete blocks (EA99) and anti-tank cubes. Parts of these defences would have been dismantled after the war and the rest may have been lost to erosion. If any survive they are at serious risk. Another pillbox (EA90) lay to the north at TA 40735 19065, but has now probably been lost.

Midway between Easington Village and Long Bank lies the site of a minefield (EA115). It had been enclosed within a rectangular barbed wire perimeter measuring some 290 x 185m, which was dismantled after the war. On the beach to the north of the minefield lay a triple row of concrete anti-tank blocks (EA103). The northern edge of the minefield and the anti-tank blocks were protected by a pillbox (EA100). It was in good condition in 1992 although it was considered at risk. Two further pillboxes (EA118) were built on Easington Beach, but had been reduced to broken concrete slabs by 1992. The minefield was also defended by a pillbox (EA116), along with three mounds probably representing further pillboxes. There was a series of trenches (EA128) located at TA 4115 1765 and along with other unidentified military installations identified close-by, probably represented defensive positions covering the minefield. All of these may have already been lost to the sea. To the south of the minefield, two pillboxes (EA132) were at TA 4128 1756 and TA 4130 1757, along with another (EA135) at TA 41185 17515, although all three were in very poor condition in 1992. North-east of Firtholme Farm was an earth covered concrete pillbox (EA126), which had been destroyed by 1992.

Inland defences included road blocks, EA155 and EA160, to the north and south of Long Bank Bridge. The road blocks were supported by a pillbox (EA160). Another pillbox (EA141) defended Long Bank dyke. The pillboxes were in good condition in 1992 and of the two, the latter is at the greater risk from erosion. The site of an army camp (EA150) lay close-by at TA 40985 16965, but has probably been largely lost.

Situated to the south-east of Lockham Farm was the site of a WW2 searchlight battery (EA140) which consisted of three searchlight emplacements and four associated buildings. Although the site was not under threat from erosion, it had been destroyed by 1992.

After WW2 it appeared that an AA battery at Warren Head had been modernised in the early 1950s to be part of the 'Rotor' scheme. A reinforced concrete engine room (EA228) had been constructed at TA 41955 14915 to provide electrical power for the AA equipment. Other post WW2 military sites include two ROC monitoring posts. Underground Post 20/T.2 (EA180) to the north of Kilnsea at TA 41445 16075, formed part of the late 1950s to 1960s nuclear warning system and was closed in 1968. Post 18/K.2 (EA43) located near Dimlington at TA 39945 20565, was of brick and concrete and was built to monitor and report aircraft movements. It had been destroyed by 1992.

Discussion

The study area has revealed evidence of occupation from the Neolithic period onwards. An occupation site (EA119) on the foreshore held the remains of a rectangular building with associated hearths and pits. Finds included over 650 sherds of Neolithic pottery and over 750 pieces of worked flint. Further remains were found beneath Bronze Age barrw

EA105. These deposits are at serious risk from erosion, if they have not been lost already.

A Late Neolithic/Early Bronze Age henge (EA104), containing the cremated remains of a young man, was revealed in 1998 by tidal action on Easington Beach. Interestingly, the surrounding ditch contained estuarine clay, suggesting a later transgression, perhaps during sea level rises in the Iron Age. A nearby round barrow (EA105) contained the remains of an adult inhumation and sherds of Bronze Age pottery. It would appear that this barrow was extant into the 20th century; a second containing a Beaker burial survived as an earthwork into the 1990s (EA117). These monuments were uncovered by tidal action and lie on the beach to the east of the flood bank. They are at serious risk from erosion, if they have not been lost already. A Bronze Age barrow group (EA138) is described as having been at approximately TA 4150 1750. Although the grid reference is an approximate one, it lies out to sea, suggesting they have already been lost.

The presence of a Late Bronze Age or Early Iron Age occupation site (EA59) at Easington Cliff is indicated by the recovery of pottery, animal bone and a wooden spear. Stray finds from the beach would indicate that this site is already suffering from erosion. Two Iron Age coins (EA61) were found at the same location suggesting occupation had continued into the Iron Age and that the coins had eroded out of the cliff. The site of a possible Bronze Age round barrow (EA49) lies to the north of the gas terminal and although it is close to the cliff it will presumably be afforded protection due to its close proximity to the gas terminal.

Exploitation of the wetland habitat and perhaps the nearby coastline is indicated by the remains of a Bronze Age sewn-plank boat (EA163) found on Kilnsea Beach in 1996, probably originally lying in peat deposits representing a former mere or sea inlet, which now lies off shore. The peat was sealed by estuarine clays, suggesting later flooding of the area, perhaps in the Iron Age. Evidence for occupation is represented by the presence of a prehistoric field system and three possible Bronze Age round barrows (EA218). Stray finds from Kilnsea Beach include a Bronze Age leaf-shaped spearhead (EA312) and Late Bronze Age or Early Iron Age pottery, including cinerary urns (EA236). These monuments are already largely lost to erosion, as the stray finds from the beach would suggest, and any surviving elements are at serious risk.

Other possible Bronze Age round barrows, (EA165–7) lie near Kilnsea Grange and to the south of Long Bank (EA159). None of these appear to be endangered at this time. At greater risk is a cropmark site (EA162) located to the east of Kilnsea Grange. To the south of Easington sewage works there are a group of possible Early Bronze Age pits and a round barrow (EA94). To the west of the flood bank are a number of cropmark sites which may be of prehistoric date and include a circular enclosure (EA106), a ring-ditch (EA136) and a linear feature (EA127). Nearby to the south-east are cropmarks of possible round barrows (EA130, 142). Fieldwalking undertaken near Lockham Farm recovered a number of flint artefacts which appear to support a late prehistoric date for a number of the above cropmark sites. These sites lie some way inland and are not at risk from erosion.

In the north of the parish near Out Newton is the site of possible Bronze Age round barrows (EA18). This area also contains a number of cropmarks which may be of a similar date, including earthworks (EA17), a trackway or droveway (EA23), an enclosure

(EA8) and a double ring-ditch (EA19). Of these, EA17, 18 and 8 lie closest to the cliff edge, and although not at immediate risk, will be at risk in the future.

The presence of a Romano-British settlement site at Easington Cliff was indicated when Romano-British pottery and other finds (EA96) were recovered after a cliff collapse, highlighting the effects of coastal erosion on archaeological sites. Other finds of Iron Age and Romano-British date (EA57 and other sites) have been recovered from the shore east of Easington Cliff and presumably originate from a long-destroyed site. A Romano-British plate (EA83) was found in Easington village.

Field walking undertaken north of Long Bank recovered 95 sherds of 3rd- to 4th-century Romano-British pottery (EA144). This concentration of pottery suggests an area of occupation, which at present is not at direct risk from the sea.

Romano-British antiquities from the Kilnsea area (EA311) include kitchen middens by the Humber. A pottery vessel and headless skeleton was found in peat deposits at Kilnsea Beacon. Various fragments of pottery and coins have been recovered from the Humber shore and Kilnsea Beach. Romano-British ditches containing artefacts have been seen in a number of locations on both the river and seaward side of Kilnsea. Possibly one of these was EA191, found on the Humber foreshore, which yielded 1st-century Romano-British pottery. Romano-British pottery was also found at TA 4110 1590 (EA190) and a Roman coin (EA178) was found at Kilnsea caravan park. Most of the above appear to be monuments, or finds from monuments, which appear to be suffering from erosion both on the Humber and seaward side of Kilnsea.

Romano-British activity is represented to the north of the parish, by a Roman quern (EA32) found on the shore off Out Newton, which had presumably eroded out of the cliff.

The only monument in the study area of Anglo-Saxon date is the alleged site of a 7th- to 8th-century monastery (EA313), which was thought to have been in the Kilnsea area. The site is unknown and may have already been lost to the sea.

The Anglo-Saxon, early-medieval and medieval periods saw the development of a number of small towns, villages and hamlets in the study area. Some of these have been completely lost to the sea, whilst others have been partially lost and are at serious risk. Lying in the north of the parish is the site of the lost village of Out Newton (EA12). Medieval monuments known to have been lost include a moated site (EA9) which had been extant in 1841 and the site of a chapel of ease (EA13) mentioned in 1302. The site of the St. Sepulchre Hospital (EA11) is thought to lie in the vicinity of Out Newton and if not already lost, would be at serious risk. The site of a windmill mentioned in 1276 and 1350 (EA37), located 0.5km inland is not at immediate risk from the sea.

Down the coast is the lost village of Dimlington (EA45). The site of a medieval enclosure (EA47) was located at TA 4015 2035 but is now lost to the sea. The present settlement of Dimlington (EA41) is now represented by a single farm.

Much of the medieval and post-medieval village of Kilnsea (EA189) was lost to the sea in the late 18th and early 19th centuries. The original church of St. Helen's (EA188) collapsed in 1826, followed by the tower in 1831. The present settlement of Kilnsea (EA177) was constructed further west in the 1840s, but is still under threat from the sea.

The site of the lost town of Ald Ravenser (EA319) is thought to lie east of Spurn Point and parts of the town may have survived into the 16th century. Building remains (EA308) seen at Old Den in the early 19th century were thought to be part of the town but were to the west of Spurn, and may therefore represent part of one of the lost Humber settlements, such as Pensthorpe.

The site of the lost town of Ravenser Odd (EA314), which had been on an island at the end of the medieval spit in the 13th and 14th centuries, would have been sited well to the east of the present Spurn Point. Originally founded as a port, the sea had destroyed two thirds of the town by 1346 and it had ceased to exist soon after.

The study area contains three other lost villages of which little is now known. Hutton or Hoton (EA139) originally lay in Kilnsea parish and appeared to have been lost in the 14th century. Sunthorpe (EA183) is thought to have been to the south-east of Kilnsea and was lost to the sea in the later medieval period. The site of the lost village of Turmarr (EA60) is thought to lie somewhere in the area of TA 4050 1950, the village having ceased to exist in the 14th century. In the north of the parish, Northorpe, was located near Dimlington and Out Newton and is believed to have been lost by 1396.

The only settlement in the parish which is still on its original site, has not been damaged or destroyed, and is not at any great risk at present is Easington itself. Its medieval monuments which include All Saints Church (EA76), a cross base (EA82), the Tithe Barn (EA85) and Manor House (EA309), all lying within the village are not at risk from erosion. Outside the village the site of a windmill (EA54) is not at risk, however the site of an enclosure with medieval pottery (EA46) located to the north of Easington appears to have been lost to the sea. Medieval and post-medieval ridge-and-furrow (EA91) had been mostly ploughed out by 1984.

Monuments from the post-medieval period are chiefly related to the buildings within the villages and outlying farm houses; these are mainly unremarkable buildings of late post-medieval/early modern date. In Easington none are at risk from coastal erosion. At greater risk are the remaining buildings at Dimlington, Out Newton and Kilnsea, which include the 19th-century Church of St. Helen (EA192). On Spurn Point the site of a Napoleonic signal station and gun battery (EA281).has already been lost.

Due to its position at of the mouth of the Humber Estuary, the parish of Easington, which includes the strategic peninsula of Spurn Point, contains a significant concentration of 20th-century coastal defences. Many of the former cliff top sites have been lost already, including a fire command post (EA5), an Operation Diver AA battery (EA21) and a 'CHEL' radar station (EA30) near Out Newton. A significant loss is that of the Godwin Battery (EA182), much of which now lies on the beach at Kinsea. An Operation Diver AA battery (EA171) has also been lost at Kilnsea, along with associated pillboxes and anti-tank blocks. Monuments on Spurn Point including the Green Battery (EA294), associated buildings and defences, such as concrete pillboxes and anti-tank blocks, are at particular risk as Spurn Point has been repeatedly breached by the sea. Many monuments have already been lost to erosion and most are at serious risk due to the fragile nature of the coastline in this part of the study area.

A potential threat to the area is an SMP proposal to realign the current coastal defences to the west of the coastal lagoons between Easington and Kilnsea, while English Nature

suggest that further lagoons could be created. This might impact on monuments lying further inland which are deemed not at serious risk from erosion at the present time.

4.19 Skeffling *(Maps 26, 27)*

Geology and topography

The underlying solid geology is Upper Cretaceous Flamborough Chalk, overlain by boulder clay. Much of the parish is covered by the chalky till of the Burlingham 2 Soil Association and only at Gilcross Hill, to the north-west corner of the parish, does ground lie above the 15m mark. The southern fringe of the parish by the Humber is covered by marine alluvium of the Newchurch 2 Soil Association lying below 8m above sea level. A spur of marine alluvium to the east of the village runs northwards from the Humber at Winsetts, indicating the presence of an ancient inlet.

The parish falls within Shoreline Management Unit 14. It has no North Sea coastline, but faces south-west onto the Humber estuary, where embankments have currently fixed its position. There is accretion of silts, and the Low Water mark has therefore migrated southward.

Historical and archaeological summary

Prehistoric

Palaeolithic

No records of this date in area assessed.

Mesolithic

No records of this date in area assessed.

Neolithic

No records of this date in area assessed.

Bronze Age

There are no monuments or finds that can definitely be attributed to this period in the study area, however a number of undated cropmarks visible on aerial photographs, appear consistent with monuments of this date. These include a circular enclosure (SE6), a ditch and ring ditch (SE13).

Iron Age

No records of this date in area assessed.

Late Iron Age/Romano-British

The only confirmed record of this date in the study area concerns the finding of a Roman brooch (SE10) at Burstall Garth (TA 3650 1850). This lies close to the Humber shore and if it represents Romano-British occupation, the site may be at risk.

There are also a number of undated rectangular enclosures, which may be of later Iron Age/Romano-British date and are discussed here for convenience. Lying to the east of the Roman brooch find spot is the site of a rectangular enclosure (SE12) at TA 3715 1845. There is a possibility that this may be part of a more extensive site, from which the Roman brooch derived. The enclosure lies fairly close to the Humber bank and might be at risk.

Another rectangular enclosure (SE8) lies on the eastern parish boundary; situated 1km inland it is not at risk from erosion.

Anglo-Saxon/Early Medieval

The village of Skeffling (SE1) is presumably of Anglo-Saxon origin although does not appear under this name in Domesday Book. The name may be derived from an Anglian personal name and means 'Sceftela's place'. There are no monuments or finds from this period in the study area.

Medieval

Skeffling lies over 1km inland from the Humber shore and is not under threat from erosion. Until enclosure the houses of Skeffling lay around two small commons, West and East Greens. Structures of medieval date within the village include the Grade I listed parish church of St Helen (SE4), constructed in 1466 to replace an earlier building, and a churchyard cross (SE5). Outside the village medieval and post-medieval ridge-and-furrow (SE2) was visible on aerial photographs at TA 3740 1920, representing the remains of part of the open East Field. These appear to have been ploughed flat by 1995.

To the south of the village lies the site of Burstall Priory (SE11). This small Priory was founded soon after 1115 and was still extant in 1540 having passed to Kirkstall Abbey in 1396. The site of the priory is thought to be in the area of TA 3650 1850 and now lies lost below the Humber mud. The original St Helen's church may have been located here (SE22), used by the monks as the priory church. Somewhere nearby are presumably the buried remains of Burstall Garth (SE23), later Burstall Hall. This site was probably already in place in the medieval period, but the house described in 1650 as a 'strong stone building' may have been constructed from materials obtained from the Priory. It stood by the edge of Humber by 1723, and had been demolished by 1765.

Two more medieval monuments are situated towards the eastern edge of the parish at Winsetts, which had been the site of a small exposed hamlet as early as the 12th century. The manor house may have been located at a moated site (SE14) lying at TA 38155 18325. The south and east sides of the moat survive surrounding the present house which was rebuilt c 1815. To the south lies a more impressive scheduled moated monastic grange (SE17) at TA 38055 18025. The grange had belonged to Thornton Abbey and the monument measures 190m x 100m, with the east and south arms of the

moat surviving to depths of 1.25m. The west arm of the moat now forms a field drain and the north arm has been infilled. The remains of a building platform are visible within the moated area and a fishpond survives as a buried feature in the north-west corner of the moat. Two possible building platforms lie outside the moated area to the south. This site lies close to the Humber shore and may to be at risk.

There were at least two windmills in the parish, one at Skeffling by the 1220s (SE21) and another at Winsetts by 1165 (SE20).

Post-Medieval

Most of the buildings in the village date from the late 18th century onwards and few are noteworthy. Outside the village the open fields were enclosed in 1765. The majority of the monuments of this date in the study area relate to the draining of the lower lying ground along the edge of the Humber. These include a flood bank (SE16) constructed during the 17th century, presumably replacing one mentioned in 1350. Weeton Beck or Fleet (SE9) forms the western edge of the parish and drains into the Humber at TA 135665 18625. Other dykes drain into the Humber through the flood bank at Winsetts Clough Sluice (SE18) and Skeffling Clough Sluice (SE15).

Lying offshore in the Humber a number of wrecks of vessels (SE19) of unknown date were visible on aerial photographs centred at TA 379 175.

Modern

The only monument of this date in the study area is the site of a World War 2 searchlight battery (SE7) located to the south of the village. Visible on aerial photographs the battery consisted of searchlight emplacements, with associated military buildings and trackways, traces of which may survive. The site lies 0.5km from the Humber and is not at immediate risk of erosion.

Discussion

There is little definitive evidence for occupation in the study area during the prehistoric period, but undated cropmarks of a circular enclosure (SE6), along with those of a ditch and ring ditch (SE13) appear consistent with monuments of a Bronze Age date. Caution should be applied because a circular feature visible to the south-east of (SE6) on aerial photographs is a World War 2 searchlight emplacement (SE7). However, if SE6 had been of similar date it should have been visible on the same group of aerial photographs that showed the searchlight battery. None of these cropmark sites are considered to be under threat from erosion.

The Romano-British period is represented by a stray find of a Roman brooch (SE10) at Burstall Garth. This lies close to the Humber shore, so if it represents Romano-British occupation, the site may be at risk. A number of undated cropmarks of rectangular enclosures, including SE12 and SE8, might be of this date. Enclosure SE12 lies fairly close to the Humber bank and might be at risk, whilst SE8 lies inland on the eastern parish boundary and is not at risk from erosion.

There are no sites belonging to the Anglo-Saxon or Early Medieval period that are under threat from erosion in the study area. The medieval and post-medieval settlement of

Skeffling (SE1) lies 1km inland and is not at risk. To the south of the village medieval Burstall Priory (SE11) has already been lost to the Humber. Further east the southern edge of a scheduled monastic grange (SE17) at Winsetts may be at risk from the Humber. The moated manor site (SE14) lying to the north is not threatened.

At risk post-medieval monuments include the 17th century flood bank (SE16) along the Humber edge and its associated sluices at Winsetts Clough (SE18) and Skeffling Clough (SE15).

Rather remarkably there is only one WW2 monument in the parish, a searchlight battery (SE7) located to the south of the village. It is 0.5km from the Humber and is not at risk of erosion.

4.20 Welwick *(Map 27)*

Geology and topography

The underlying solid geology is Upper Cretaceous Flamborough Chalk, overlain by boulder clay. The northern part of the parish, including the site of Welwick village, is covered by reddish till of the Flint Soil Association. This lies higher than 7m above sea-level and rises to a height of 26m at Beacon Hill. Much of the southern part of the parish, including Weeton, is lower and covered by marine alluvium of the Newchurch 2 Soil Association.

The parish falls within Shoreline Management Unit 14. It has no North Sea coastline, but faces south-west onto the Humber estuary, where embankments have currently fixed its position. There is accretion of silts, and the Low Water mark has therefore migrated southward.

Historical and archaeological summary

Prehistoric

Palaeolithic

No records of this date in area assessed.

Mesolithic

No records of this date in area assessed.

Neolithic

No records of this date in area assessed.

Bronze Age

No records of this date in area assessed.

Iron Age

No records of this date in area assessed.

Late Iron Age/Romano-British

No records of this date in area assessed.

Anglo-Saxon/Early Medieval

The villages of Welwick (*Weluuic* DB), meaning the 'dairy farm by the spring' and Weeton meaning 'Willow Farm', are both Anglo-Saxon in origin. However, no monuments or finds from this period are represented in the study area.

Medieval

The medieval and post-medieval settlements of Welwick and Weeton lie astride the Patrington to Easington road and are over 1km inland from the Humber shore. They lie outside the main study area and are not at risk from erosion.

Lying on the southern fringe of the parish is the site of Pensthorpe DMV (WE4) at TA 3435 1885. The name of the village is of Scandinavian origin and means 'Pening's village'. It was mentioned in 1271 as 'Penisthorpe' but by 1841 only some detached pieces of land still bore the name. The village appears to have been totally lost to the Humber.

In the early-medieval period the parish included an area of siltland which had been reclaimed from the Humber. This had been occupied by a hamlet known as Orwithfleet. The name of the hamlet means 'stream near the remote wood' and is of Scandinavian origin (VCH). The presence of Scandinavian settlements on reclaimed land by the Humber might suggest that only more marginal land was available to the Scandinavian settlers in the 9th and 10th centuries. This reclaimed land along with the settlement of Orwithfleet was totally submerged in the 14th century.

Medieval and post-medieval ridge-and-furrow (WE2) appear to represent the remains of the southern part of Welwick's open field system, lying on either side of the road that leads from the village towards the Humber. Most of this had been levelled by 1986 however.

Post-Medieval

Outside the village the open fields were enclosed in 1771. Monuments of this date in the study area relate to the draining of the lower lying ground along the edge of the Humber. These include Weeton Beck or Fleet (WE5) which forms the eastern edge of the parish and drains into the Humber. A disused 17th-century sluice (WE6) at Weeton Clough is shown on an 1855 6" OS map.

Modern

The only monument of this date in the study area is the site of a World War 2 AA battery (WE3) located to the south of Humber Farm. It had originally had four emplacements for

3.7-inch anti-aircraft guns, a magazine and associated building. In 1992 the Fortress Studied Group visited the site and found the remains of the emplacement, evidence of the magazine and the base of a Nissen hut. They felt that although the remains were in poor condition, they were in little danger.

Discussion

There is no evidence from the study area, either of monuments or find spots, to suggest prehistoric or Romano-British occupation.

Place name evidence suggests Anglo-Saxon and Anglo-Scandinavian occupation, but no finds or monuments of that date were seen in the assessment area. The villages of Welwick and Weeton lie far enough inland as not to be at risk from erosion. The medieval settlements of Pensthorpe (WE4) and Orwithfleet have already been lost to the Humber.

The site of a 17th-century sluice (WE6) near the Humber at Weeton Clough may be at risk.

The only WW2 monument (WE3) in the study area lies within 100m to 200m from the edge of the Humber, but it was not thought to be at risk in 1992.

4.21 Grimsby *(Maps 28, 29)*

Geology and topography

The underlying solid geology of the area is composed of chalk from the Upper Cretaceous period (Neal 1988, 1 *et seq*). In turn is over lain by a drift geology of Skipsea Till (Catt 1990, 21–3) from the Tertiary period which in turn in the Grimsby area has been covered by estuarine and riverine derived alluvium (ibid, 10). Due to the largely urban nature of the parish the soils have not been classified (Ellis 1990, 30).

The topography of the parish is one of low-lying, former marshland (mostly below 5m OD) which extends beyond the study area inland gradually rising to the Lincolnshire Wolds. A significant part of the study area for this parish was reclaimed during the various developments around Grimsby docks from the 18th century onwards.

The majority of the land-use in the parish is taken up with the various docks and associated light industry. The remainder of the land is divided between residential areas and non-dock related light industry.

Historical and archaeological summary

Prehistoric

Although there is no recorded evidence for prehistoric archaeology within the study area of this parish there remains a low/moderate potential for undiscovered remains to be encountered dating from the Neolithic period onwards. The reason for this is that due to the amount and range of prehistoric material recorded from the adjacent parish of Cleethorpes to the south (see below for details) and from the inland part of Grimsby parish undiscovered archaeological remains could well extend into the area currently

under consideration. For a summary of the potential for the immediately adjacent area see Wise (1990, 213–8). If there were any prehistoric remains present they would potentially include a similar range of material and site types to those recorded in Cleethorpes (see below).

Late Iron Age/Romano-British

The Roman period is represented by a single recorded find of a Roman lamp dredged up during the construction of the docks in the 1930s (GG108). The development of these docks covered a large area of mainly reclaimed land and foreshore and it is possible that this find, along with others from Cleethorpes to the south, represent the remains of an early salt industry (see Cleethorpes for a more detailed discussion). As with the prehistoric period, Wise (1990, 218–9) gives a good summary of the evidence for the immediate vicinity.

Anglo-Saxon/Early Medieval

Evidence for Anglo-Saxon activity within the parish as a whole is very limited. Historically the first reference to Grimsby is 866 when a 12th-century writer refers to a crossing point on the River Humber here (de Boer 1988, 28; Wise 1990, 220). This reference to crossing the Humber is echoed with the reference to two ferries operating from Grimsby in the Domesday Book some 220 years later (Knowles 1990, 361), showing the importance of and possibly continuous activity in the area. The location of this early settlement was presumably in the area of what developed into the medieval Haven, later to be called the West Haven.

The place name Grimsby is recorded in Domesday Book as *Grimesbi*, meaning 'farmstead or village of a man called Grimr' from the Old Scandinavian *by* and a personal name (Mills 1998, 156). As the name has an Old Scandinavian origin and the settlement was already known to be in existence prior to recording in 1086 an early medieval existence is strongly suggested although currently there are no recorded finds or sites of this date within the study area.

Medieval

As with the prehistoric and Romano-British periods there are very few recorded archaeological sites from the medieval period within the 1km study area of the coastline. The one major recorded site is the medieval haven of Pyewipe (GG32) in the area to the west of the current port. The importance of both the Haven (Pyewipe) and West Haven (slightly inland and within the medieval settlement) can be seen historically with the development of Grimsby into a borough by the late 12th century (Ambler 1990, 230). The settlement continued to develop as a port, not only for the fishing fleets, but for a degree of trade in various commodities such as wheat and wool. See Wise (1990, 220–5) and Ambler (1990, 227–34) for a more detailed summary. The majority of the development outlined above would have been within the settlement located slightly inland of the study area.

The land within the area between the settlement and the old course of the River Humber was probably salt marsh that was used for seasonal grazing or as salterns for salt production to supply the fishing trade. There is also the possibility of foreshore activity relating to fish traps being located on either side of the mouth to the Haven.

The only other recorded medieval site is a find of pottery in the port area (GG62). This could relate to the development of the medieval port or simply be the remains of refuse dumped into the edge of the river, though in either case there is a low potential for other material to be encountered.

Post-medieval

Prior to the very rapid expansion of the post-medieval fishing industry in the 19th century the port had suffered a major decline. By the 15th to 16th centuries the settlement had declined due largely to the silting of the Haven along with changes in trade patterns and by 1697 Grimsby is described as *'but a little poor town, not a quarter so great as heretofore'*. However in the same year work was started on diverting the River Freshney into West Haven and the Haven in order to try to scour out the accumulated silt (Ambler 1990, 236). This presumably had little overall effect as plans were again drawn up in 1796 to revive the fortunes of the town.

Modern

The major attempt to revitalise the fortunes of Grimsby was with the work of the Great Grimsby Haven Company which from 1796 attempted to revive the fortunes of the heavily silted harbour (the Haven or Old Haven) now sited on the diverted River Freshney. Their aim was to build a floating dock that would attract trade away from Kingston upon Hull, however the development of the dock took far longer than expected and suffered badly from altered designs and poor engineering (Jackson 1983, 51). John Rennie was the engineer who solved the problems of building the dock and who later went on to build some of the early dock structures in Kingston upon Hull. The dock was finally opened on 30th December 1800 and although it was incomplete it was the largest dock in Britain at that time (ibid 238). Elements of this dock survive within the later developments of the 19th-century port; probably the most significant of these is Rennie's Lock (GG50), which was constructed across the mouth of the Haven at TA 27235 10610 to create the dock.

After an initial rise in population the lack of a developed hinterland meant that the overall growth of the town fell to a rate little different from the rest of Lincolnshire. The origin of the subsequent rapid development of the modern port can be linked to the discovery of the 'Silver Pit' in the 1840s. This was the name given to the extremely productive fishing ground some 60 miles out into the North Sea on the edge of the Dogger Bank (Anson 1944, 24; Tunstall 1962, 18). The simulltaneous growth of the railways allowed the fast and effective distribution of the catches, creating the conditions for the expansion of Grimsby's fishing trade.

The next stage in the development of the port was the construction of a new dock (later becoming known as the Old Dock) completed in 1801 on the site of the badly silted Old Haven. Later changes led to this dock being incorporated into Alexandra Dock as its southern arm when Alexandra Dock (GG61) was built in the 1870/80s. The dock over the Old Haven was quickly superseded by the construction of the Royal Dock (GG24) on reclaimed land to the north-east (opened in 1852) by a consortium of the Grimsby Dock Co and The Manchester, Sheffield and Lincolnshire Railway Company. This led to Grimsby becoming what could be regarded as 'the first truly modern dock in Britain' (Jackson 1983, 90) as it fully integrated the docks, railways and the means for rapid

unloading by the systematic and extensive use of hydraulic power. However, such was the demand and speed of expansion that in 1855 construction started on a further complex of docks and infrastructure. The first of these was the first fish dock to the east of Royal Dock in 1857; this was subsequently enlarged in 1866 and became known as No.1 Fish Dock (GG14). No.2 Fish Dock (GG40) was added to the south in 1878. In 1879 Union Dock (GG51) was completed which joined the Royal Dock (GG24) to what was now known as the Old Dock which was redeveloped and became Alexandra Dock (GG61) in 1880. In 1900 No.2 Fish Dock was enlarged and in 1934 No.3 Fish Dock (GG34) was completed (Ambler, 1990, 238-40; Jackson 1983, 89 *et seq.* & 128 and King and Pulfrey, 1991, 6). The first Dock Tower (GG8), housing a hydraulic accumulator was built in 1851–2, modelled on an Italian original; a second tower followed in 1892 (GG7).

The rapid and almost wholesale development of Grimsby as a fishing port outlined above has lead to a predominance in the archaeological record of 19th-century and later buildings, possibly at the expense of an earlier landscape. These buildings can be divided into two main groups: those associated with the fishing industry and its allied trades (eg docks GG14, 24, 34, 40, 50, 51, 61, dock structures GG10, 6–8, 13, 39, 44, 55, railways GG15, 17, 49, 63, fish smoking sheds GG16, 19–22, 25, 31, iron foundries GG45, 67, saw mills GG38, 90, 91, 93, 124, ropewalks GG53, 85); and those associated with the industries' workforce (eg schools GG131, 143, 146, religious buildings GG80, 88, 89, 92, 94, 96, 98, 107, 114, 129, entertainment GG110, 112, 113, 116, 119, 127, 128, 130) etc. Although these buildings and their related infrastructure (eg tramways (GG97 & 103) and markets (GG105) are, generally, individually of limited archaeological or historical interest the urban landscape as a whole can be considered a good example of the rapid growth seen in the early 19th century.

As with any settlement there has been constant change in relation to its built heritage. Typically this is seen in the loss of older buildings and the gradual evolution of the 'townscape', but although there has been loss many buildings and structures representative of both the 19th and early 20th centuries have survived. Early 20th-century survivals are primarily religious buildings (GG80, 88, 89, 92) and schools (GG131, 142, 145).

In conjunction with the development of the commercial port there would have been several ship building yards of varying sizes. Originally these would have been for wooden sailing vessels but they would have developed quickly to be able to produce the iron and steel, steam-powered fishing vessels demanded by the industry. Documentary evidence from the 1890 OS map shows two complexes of shipyards. The first area is where the later entrance to the Fish Docks (NGR TA 2815 1130) was constructed and is now probably completely destroyed, though from an examination of aerial photographs it is possible that some remains could still be present within/under the later Fish Dock entrance structures. The second area was located immediately to the north of Rennie's Lock (GG50) adjacent to the Union Dock (GG51). Aerial photographs show that these were still operating for some time after the Second World War but are now abandoned. Recording from aerial photography shows a concentration of shipwrecks (GG30, 35–7, 41) close to the boatyards, along with at least one slipway (GG44). The extensive boatyards along the outer edge of the dock complex visible on the aerial photographic record may well have been built over earlier yards. This is because as an industry this location is well suited and as the size of vessels being built increases the deeper the

water required for launch and maintenance which in turn means that the structures tend to 'creep' seawards covering the earlier sites with later buildings.

There are a number of wrecks scattered across the foreshore near the boatyard (GG1–3). Although these wrecks have not been studied or dated, experience has shown that vessel remains which are visible tend to be of a post-medieval or modern date. Typically they are the remains of the small, often local, fishing vessels abandoned at the end of their working life and as such can be of regional significance when considering the variations and development of vernacular craft (eg Mannering 1997; March 2005; McKee 1983). However, in this case with the close proximity of the shipbuilding yards these vessels may be associated with repair and/or dismantling and salvage carried out by the boatyards. This in turn could mean that with Grimsby being the home port for many of the vessels built in the yards, the wrecks may well reflect the development of the boatbuilding industry in this area during an important transitional period between sailing and steam-powered fishing vessels.

Due to the soft and anaerobic nature of the mud foreshore there is a high potential for well preserved buried remains to be present in this area and also near the entrance to old medieval haven. This area as a whole appears to have remained largely undeveloped and consequently may contain extensive remains of this once important industry.

Probably the biggest single impact on the archaeological landscape in the modern period was World War 2. Unsurprisingly, due to the importance of Grimsby as a major fishing port with a large dock facility, there were extensive military defences. These took the form of a large coastal gun battery (GG43) positioned on the outer wall of the Fish Docks which would have worked in conjunction with the searchlight battery further along the coast to the east in Cleethorpes parish (CL2), plus a series of complexes of pillboxes, wire entanglements and accommodation or command buildings (GG12, 27). The civilian population also received protection through the provision of air raid shelters (GG52, 102).

Discussion

From the descriptions of the recorded archaeology above it can be seen that currently there appears to be a low potential for further archaeological sites and material from all but the late medieval and post-medieval/modern periods. The reasons for this lie in the physical and environmental nature of the landscape and the rapid developments of the 19th and 20th centuries.

The coastal fringe along this part of North-East Lincolnshire is very low-lying with little rise in height for many kilometres inland; it is composed in the main of salt marsh. The coastal zone is, therefore, prone to frequent flooding both on a short-term seasonal basis and a long-term climatic/eustatic basis due to changes in sea levels. In turn this means that much human activity will have primarily focused on the various areas of slightly higher ground or else lie away from the edge of the Humber estuary (de Boer 1988, 28; Wise 1990, 213) and therefore remains largely outside the current study area.

However, there will have been some activity within the coastal margin, and depending upon the nature of the communities exploiting this resource the most likely form of activity will have been hunter-gathering or seasonal grazing, or possibly a combination of

the two. Unfortunately neither of these activities tends to leave much in the way of physical evidence, although one type of hunter-gathering which can leave traces is the use of fish traps or weirs. These structures are built on accessible, gently sloping foreshores and can stretch for many metres if not kilometres (Bannerman & Jones 1999, 70; Godbold & Turner 1993; Salisbury 1991, 76); they can also survive well due to the nature of their construction into largely anaerobic sediments (see Cleethorpes parish below). The use of fish traps along the north-east coast is attested from at least the Neolithic/Bronze Age period onwards (Buglass 1994, 15).

Another coastal fringe activity that has the potential to survive within the parish is the production of salt at salterns (see the Lincolnshire section below for details). Salt has been an important commodity for many thousands of years as a means of preserving food over the winter, and is particularly significant in the storage of fish. It is possible that the two activities, fishing and salt-production, may have been inter-dependent

In addition to the environmental nature of the coastal fringe being unconducive to human occupation, the rapid development of Grimsby in the 19th century has probably destroyed, or at least damaged, any archaeological sites that once existed. This is suggested by the few recorded sites/finds from the study area dating to before the late medieval period, although admittedly approximately a third of the study area of the parish comprises land reclaimed for the construction of the docks. Having said this, some of the reclaimed area would originally have been foreshore: this could have been used for fish traps, been the location for beach-launched fishing vessels or conversely seen the wrecking of vessels running for the safety of the Haven; part of the area could also have been salt marsh, and may therefore contain salterns. Interestingly the earliest chart of the Humber produced c 1560 (Burleigh Chart) shows a very pronounced foreland in approximately the location of the modern docks. It is possible that the well known changes in landform seen on the opposite side of the River Humber around Sunk Island were also happening to a lesser extent along the southern bank, and that the area reclaimed for the modern docks was the remains of a now eroded/sunken landmass.

All of this means that any potential foreshore remains are likely to be deeply buried, and will only become threatened by piling activity or major coastal erosion leading to the loss of parts of the current commercial port.

Currently the archaeological and historical importance of Grimsby lies in the sequence of development of its harbours and docks. The early medieval origin of the town as an inland harbour and its subsequent movement downstream to the mouth of the River Freshney due to problems with silting and the increase in size of shipping, led on to the construction of the ill-fated floating dock and ultimately to the port's later boom as a modern port with an integrated infrastructure. All of this, coupled with its rapid decline after World War 2, has meant that much of this sequence of change and evolution of the port is either still observable or potentially buried under parts of the old town. It is this sequence of evolution that is important archaeologically and could be compared to the development of other medieval ports both regionally (eg Hull and Goole) and nationally (eg Kings Lynn and Boston).

Going hand in hand with the development of the various harbours is the development of the attendant shipping. Since Grimsby was at one time a major, if not the most important, east-coast fishing port, the type of craft using the port will have varied enormously (Starkey *et al* 2000). Accounts list boats from as far away as Bideford

(Tunstall 1962, 18), which will have been built in their own traditional style. However, not only will the wooden fishing vessels have exhibited regional variation but steam trawlers will also have been particular to their area of origin. Thus, ship remains in and around Grimsby could well reflect the early development of steam fishing, an area which has been little studied archaeologically.

4.22 Cleethorpes *(Maps 28–31)*

Geology and topography

The underlying solid geology of the area is composed of chalk from the Upper Cretaceous (Neal 1988, 1 *et seq*.). In turn is over lain by a drift geology of Skipsea Till (Catt 1990, 21-3) from the Tertiary period which in turn in the Cleethorpes area has been covered by estuarine and riverine derived alluvium (ibid, 10). Due to the largely urban nature of the parish the soils have not been classified (Ellis 1990, 30).

The topography of the parish is one of low-lying, former marshland (mostly below 5m OD), which extends beyond the study area inland gradually rising to the Lincolnshire Wolds. One significant topographic feature within the parish is the low clay cliff of till which forms the Cleethorpes seafront (Wise 1990, 212).

The majority of the land-use in the parish is used for residential purposes along with its attendant infrastructure and some light industry. The seafront has developed numerous amusement arcades and similar venues to serve the tourist industry, which originally developed during the Victorian period.

Historical and archaeological summary

Prehistoric

Palaeolithic, Mesolithic and Neolithic

There is no recorded evidence for prehistoric archaeology within the study area from the Palaeolithic or Mesolithic periods and only one poorly recorded spot find of a flint axe for the Neolithic period (CL57).

Bronze Age

Two or possibly three (one record may be a duplicate) Bronze Age stone axe hammers are recorded from this parish. The two sites which are poorly recorded and may duplicate each other are CL91 and 92, whilst the third was recovered from a peat bed on the beach with a fragment of a poplar wood handle still attached (CL17): this provided a radiocarbon date of c 1400 BC. Although the axe was found within the peat beds of the ‘sunken forest’ on the beach, it dates to a later period.

Two other stone axes (CL90, 135) have been recorded in this study area and although no date has been assigned to them, it is probable that they were also Bronze Age or Neolithic, as there have been finds of that date previously. However, as the material is no longer available for study more precise dating is not possible.

Even though the recorded evidence for pre-Late Iron Age activity in the study area is very poor, there is a moderate potential for remains to be encountered in the future. This is suggested by the recording of finds and sites (principally burial mounds) just inland. The presence of burial mounds implies some form of human activity or settlement in the study area, even if only temporary or seasonal. The location of such settlement is currently speculative but it may have focussed on the slightly higher ground formed by a morainic ridge and the eroded edge of the till along the coastline (see Wise (1990, 213–8) for a more detailed discussion).

Iron Age

There are currently no recorded sites or finds from this period.

Late Iron Age/Romano-British

Limited evidence for Romano-British activity has been recorded in the study area in the form of a series of spot finds. These were six coins (CL10, 16, 37, 40, 49, 116), two fragments of pottery (CL28, 89) and a single quern stone (CL122). As with the prehistoric activity above there is an area of more intensive activity in the form of a Romano-British occupation site located just inland on a slightly raised spur of land at Old Clee (Wise 1990, 219) adjacent to the study area.

If the settlement was located in this inland position then there is the strong possibility that the coastal fringe was being exploited for such activities as seasonal grazing, salt production and possibly even some form of beach launched fishing and/or trade. The latter may explain the presence of several Roman coins and pottery recovered from the foreshore (CL16, 28, 37, 40, 49, 89).

Anglo-Saxon/Early Medieval

Cleethorpes as a town is not recorded before the 17th century (Mills 1998, 87) as it is an amalgamation of three separate settlements (Oole, Itterby and Clee) and at least one of the original hamlets (Clee) has origins that are much earlier. The settlement of Clee (later becoming known as Old Clee) is recorded in Domesday as *Cleia* and the name is derived from the Old English *claeg* meaning clay, almost undoubtedly referring to the soils (ibid).

Also mentioned in Domesday and now part of Cleethorpes was the village of Thrunscoe (CL115). The remains of this settlement were still visible as extensive earthworks on aerial photographs in 1945.

Apart from the recorded place names and aerial photographic evidence for the location and origin of the earlier settlements there has only been one recorded spot find of medieval material. In 1937 a dagger described as Danish (which could be interpreted as possibly Viking) was found (CL108). Unfortunately, as with the majority of late 19th- to early 20th-century finds, the item is no longer available for study.

Medieval

The settlement of Clee (later known as Old Clee) is show on the 1824 OS maps with two smaller settlements shown on the coast, both called Cleethorpe. These are in fact two settlements, Oole (CL61) to the north and Itterby (CL86) to the south (Wise 1990, 231) and the name presumably gained its 'S' when the two hamlets merged together (it is hence technically a plural, literally 'the thorpes of Clee'). The hamlet of Oole (Hoole or Hole), also known as High or Upper Thorpe, is not mentioned in Doomsday but by c 1565 had 13 families recorded. The former Town Street and market place of Hole is now Market Street in Cleethorpes (CL61) (Loughlin & Miller 1979, 166).

As mentioned above the modern settlement of Cleethorpes also encompasses the remains of the deserted medieval village (DMV) of Thrunscoe (CL115). The settlement is mentioned in Doomsday and by 1563 had 16 families recorded. A group of buildings is shown on the OS 1st edition 1-inch maps (1824) and aerial photography from 1945 shows a series of earthworks. The area is now partly developed and partly covered by Cleethorpes Cricket Ground (CL120).

The importance of Thrunscoe can be seen from the granting to the Earl of Richmond and Lancaster the right to hold a weekly market on Thursdays together with a yearly fair at Michaelmas. The timing of the fair may have been connected with the east-coast herring and mackerel fishery as it moved south in the late summer and early autumn (Ambler, 1990, 230–3), which in turn would suggest a well developed fishing industry, probably beach launched as Cleethorpes has no port.

Apart from the placename evidence there is little in the way of physical remains recorded from the medieval period as a whole. There is poor documentary evidence suggesting that there was a chapel of ease within the parish (CL53), though its location is uncertain.

For a summary of the development of Cleethorpes see Wise 1990 (225–34) and Ambler 1990 (227–49).

Post-medieval

As mentioned above, the name Cleethorpes is of recent origin and reflects the growth of the three hamlets, probably starting in the 17th to 18th centuries (CL61, 86, 115) and, like Grimsby described above, the rapid expansion of Cleethorpes was tied to the boom in the fishing industry linked to the development of the railway infrastructure. This, however, came in the 19th century, and there is little of post-medieval date now extant.

Modern

With Cleethorpes' close proximity to Grimsby and Grimsby's advantage of port facilities, Cleethorpes grew and effectively became a part of Great Grimsby, providing accommodation and infrastructure to the workforce of the fishing and allied industries. This is reflected in the surviving built historic environment with many good examples of housing (eg CL19, 21, 34–6, 38, 42, 50, 65, 66, 85), schools (eg CL9, 68, 76, 79), religious buildings (eg CL7, 11, 39, 41, 45, 70), infrastructure (eg CL26, 29, 31, 33, 55, 63, 72), the source of the clay for the brick buildings of the town (eg CL8, 22, 24, 47, 48, 89, 93) and the railway (CL20), opened in 1848, with Cleethorpes Station (CL51) opening in 1863. In addition to what could be considered the 'normal' range of activities

of a coastal town the development of Cleethorpes as a seaside resort means that there is also a range of facilities relating to various forms of entertainment. These include public houses, such as the 19th-century Life Boat Inn (CL104), novelty rides, such as the late 19th-/early 20th-century bicycle railway and switchback railway (CL23, 27), the pier (CL52), the Clee Park Gardens & Pavilion (CL3) and the mid 20th-century Winter Gardens (CL111) for example. The pier opened in 1873, with a length of 365m, although it was subsequently reduced to its present 102m.

However before this rapid growth the parish was still largely agricultural in nature and the various remains of these activities have been recorded in a range of sites, for example – a sheep fold (CL113) and wind pumps/windmills (CL13, 43, 67, 99, 130).

Due to the wide expanse of the fine sediment of the foreshore adjacent to Cleethorpes there is a high potential for the survival of organic archaeological remains. This can be clearly seen in the recorded remains of the three shipwrecks (CL118, 131, 133) and up to possibly five fish wiers (CL5, 129).

As already mentioned above most wrecks currently visible on the foreshore tend to be of a post-medieval or modern date and the three recorded here appear to be no exception. Wreck CL118 (Plate 32) has previously been briefly examined by the author (Buglass 2002), and is definitely that of a post-medieval fishing boat. The wreck was that of a two masted wooden carvel-built 19th-century fishing vessel. It was lying with the stern pointing up the foreshore which could be taken as being indicative of accident rather than abandonment at the end of its working life. Nearby was a similar vessel though that one was more deeply buried and could not be examined in any detail and its location does not currently appear to be recorded. To the south-west of this site there are two further (probable) post-medieval wrecks (CL131, 133). Wreck CL133 appears to be that of a barge.

A brief site reconnaissance was carried out in May 2007 in order to attempt to establish a more accurate location for the wish weirs and a better idea of their possible date. The site visit did not encounter the wooden posts of the weirs that had previously been clearly seen in the APs, but it did encounter several piles of unworked stones and a single large wooden post (Plates 30, 34: not yet fully located or numbered). These were in the area of post-medieval ship wrecks CL118 (see below) but the former do not appear to be associated with the wrecks as ballast; it is possible, therefore, that these features are the remains of other fish weirs and that the stones were used to weigh down the nets or to support posts, but they could equally be of a modern origin for the same purpose. Likewise the single wooden post currently does not appear to be associated with the wrecks and may either be part of a weir or the remains of a navigational marker.

What the site visit did record was the condition of the wreck (CL118: Plate 32) previously recorded in 1999. The remains of the vessel were now seen to be standing almost completely clear of the surrounding sand. Internally the vessel had been swept completely clear of sand long enough for a covering of sea weed to develop. Externally the wreck had deep scours on its northern side which have acted to under cut the remains and is exacerbating its break up. Several areas of significant damage were visible at both the bow and stern with numerous loose planks and large, detached but otherwise intact sections of structure in the immediate vicinity. It is the authors view that unless the wreck is recovered by the sand in the near future it will probably break up completely within a year to 18 months.

Due to the erosion seen on Site CL118 a second wreck was now visible approximately 100m to the south of CL118 (Plate 33: not yet fully located or numbered). Less of this vessel was exposed with 37 frames visible on the southern side and 25 on the northern but the keelson remained buried. It appears to be 15–30m long and about 7m wide. The remains were of a wooden, carvel built fishing vessel slightly smaller than CL118. It was also possible to clearly see the remains of the two further wrecks at Sites CL131 & 133 though the tide was not sufficiently low to be able to carry out any form of inspection.

Several areas of exposed clay were observed along various parts of the profile of the foreshore (Plate 31). It was not know at the time of the site visit if these clay beds were marine or fresh water in origin and where they lie in relation to the remains of the peat beds and submerged forest off this coast. If the sequence of marine transgressions was available then it may be possible to use the various exposures to try to determine were palaeo-environmental remains may lie.

In addition to these few known sites there is extensive documentary evidence for further potential sites encompassing more of the post-medieval period. Data sources used to compile the maritime component of the National Monuments Record (NMR) show that historically many vessels have been lost along this section of coastline. A rapid examination of this record shows that there are a total of 17 vessels recorded as having been ashore at variously Cleethorpes Sand(s), Cleethorpes Beach, Clee Sand(s) and Clee Ness Sand(s) and range in date from 1771 to 1896 and whilst they are mostly English vessels as expected the list includes at least one foreign (Swedish) vessel. The implication of this is that there are potentially many other vessels of earlier dates that would also have been lost in the same or similar locations.

As already mentioned there is evidence for foreshore activity in the form of a possible fish trap and fish weirs. Aerial photographs show a linear stone bank (CL5) which forms an arc around the area to its north and is very similar to fish traps seen elsewhere (Salisbury 1991, 76; Bannerman & Jones 1999, 70 *et seq*); traps of this type act to capture fish as the tide flows out in a particular direction. This type of construction is difficult to date stylistically and could be from any period from the later prehistoric onwards. Almost at the southern end of the parish c 3.6 km to the south of the stone trap there are a series of V-shaped wooden structures which are the remains of at least four, possibly five, fish weirs (CL129). These are constructed with the wide or open end of the trap facing up the beach with the side walls of the weir acting as a funnel to direct the fish on the falling tide towards some form of net or wicker trap at the narrow end. Typically these are constructed from timber posts with wattle/wicker work between them to act as the walls (Godbold & Turner 1993; Salisbury 1991).

The aerial photographs clearly show the remains of at least three funnel-shaped traps here, comprising the remains of one trap and the arms of two others which are closest to each other which appear to form a funnel shape facing the wrong way. On the southern end of the southernmost fish trap there appears to be a further series of posts indicating a probable fourth trap. The photographs suggest that these traps are to be between 50m and 100m long, although there are no suitable features nearby to gauge size. Initially this would seem to suggest the traps are post-medieval in date but fish weirs of similar design up to 300m long recorded in Holbrook Bay on the Stour Estuary have been dated to the Saxon period (www.english-heritage.org.uk/server/show/conWebDoc.4177). The form of these features strongly suggest that the majority of the visible part of the trap is

actually the leader (Godbold & Turner 1993, 41), sometimes also known as hedges (Salisbury 1991, 76) which acts to funnel the fish to the trap proper at the narrow end. The trap itself can range from a simple net to a more complex structure made from wattle as seen on the Severn Estuary where they are know as known as putchers or putts (Godbold & Turner 1993, 43). If the traps were part of a large complex of structures then there is the potential for capturing large amounts of fish on each tide which in turn raises the probability that there would have been some form of access to the trap end of the weir for the removal of the catch, possibly by horse and cart or by hauling sledge across the sand flats. Traps of this size indicate a well-organised and significant industry and the potential for this to have been linked to the fishing and salt production industries is high.

Fish traps are known to have been used along parts of the north-east coast since prehistory (eg the late Neolithic early Bronze Age example recovered from Hartlepool beach (Buglass 1994, 15) and examples have been recorded elsewhere from the Saxon and medieval periods onwards (Salisbury 1991, 76, www.english-heritage.org.uk/server/show/conWebDoc.4177) in both documentary and physical forms. The good physical survival of these examples probably indicate a post-medieval origin though an earlier date cannot be ruled out in the light of dating similar structures from the Severn Estuary which placed several fish weirs to the 11th to 12th centuries (Godbold & Turner 1993, 40). It is also possible that the current remains are the end point of many decades of renewal and repair on a much older structure.

As well as the trapping of fish proper there is also evidence for the capture and storage/raising of shellfish. A square oyster bed is recorded on the 1889 OS map (CL121) lying inside what appears to be a small sea bank (along with oyster beds within Grimsby docks (GG25). This sea bank (CL126) appears to lie in approximately the same position as an area of salt marsh shown on the 1824 OS and may well be the remains of it. The site reconnaissance was also able to establish that a significant amount of this sea bank/salt marsh remains as a feature along the high water mark, though no obvious trace of the oyster pit could be seen. The 1824 map shows this marsh stretching to the south and is named as the Fitties, a place name which occurs frequently further south along the coastline. The name Fitties is thought to mean an upper salt marsh pool (www.lincsbap.org/habitates/actionplan). By comparing the 1824 map with the 1889 and modern maps it appears that a large part of this area has been reclaimed and the course of the 1889 shoreline can still be traced within the modern landscape as it runs south into the adjacent parish of Humberston (HU11).

Most of the changes in the later modern era have seen the demolition of older buildings but a few good examples of early 20th-century buildings are worth noting; the old Electricity Board Showroom (CL54) and Humberston Colonnade (CL95) for example. One area where Cleethorpes retains a typical coastal settlement identity is in the survival of its pier (CL104) and many of the amusement rides/arcades associated with the Victorian desire for seaside holidays (CL23, 27).

Like Grimsby, Cleethorpes saw the construction of extensive defensive structures, mainly during World War 2 but including two late 19th- to early 20th-century Royal Navy Reserve gun batteries (CL69, 127). The World War 2 structures were located along the coastal margin to provide defence in depth against a variety possible enemy activities from bombing to full scale landings by either sea- or airborne troops. The defences included a searchlight battery (CL2), an anti-aircraft battery (CL143), pillboxes (CL14,

18), anti-glider ditches (CL137), anti-tank cubes/road blocks (CL18, 114) and probably the most extensive feature, what has been interpreted as a bombing decoy (CL136) designed to reduce the likelihood of Grimsby docks being damaged. All of these sites were supported by a series of military establishments (CL124, 141, 142) which contained pillboxes, barbed wire entanglements, accommodation blocks and command and control buildings. In addition to the military structures, air raid shelters (CL1, 71, 117) were constructed for the civilian population. Evidence for enemy attacks on the area can be seen in APs in the form of impact craters from bombing (CL125).

The parish also retains evidence for much more recent conflicts in the form of Cold War observation posts for nuclear fall out (CL138) built in the area of the former bombing decoy.

Discussion

Unlike a proportion of the land within the study area for neighbouring Grimsby the modern settlement of Cleethorpes is not built on reclaimed land and as such there will be a greater potential for earlier archaeological sites to survive beneath the town. This can be seen just outside the study area to the west where what appears to have been a prehistoric barrow cemetery was cleared to make way for the 19th- to 20th-century cemetery and the already mentioned Romano-British occupation site. Both of these may well have had activity associated with them along the coastal margin.

Evidence for medieval and later activity is always clearer through the use of place names and, in terms of the post-medieval period, surviving physical remains. Even though the place names for two of the precursors to modern Cleethorpes are of medieval date the physical evidence is generally lacking with the most obvious being the APs for the DMV of Thrunscoe. What remains do survive will lay under the modern settlement.

This said the foreshore, along with the few surviving areas of open ground, will hold the potential for evidence relating to the exploitation of the area from all periods. As seen by the survival of the post-medieval vessels and fish traps there is a moderate to high potential that earlier examples could also survive though potentially these could be more deeply buried. This is particularly possible if the feature was at least partially made from posts/stakes driven into the foreshore sediments, as fish weirs and their leaders are. With the known presence of various religious houses in Grimsby there would have always been a demand for fish beyond the normal consumption level of the population, this could have lead to the development of more extensive foreshore fish trapping and probably a small, beach launched fishing fleet centred on Itterby and Oole. If there were beach launched fishing boats then this raises the potential for a related boat building/repair activity with its associated remains. It should be noted that both of these activities would have been small-scale and probably leave little in the archaeological record.

Even if there were little in the way of direct seaborne communication with the Cleethorpes area the potential for frequent ship wrecks due to the presence of the extensive sand banks is high. As seen from the documentary accounts referred to above many vessels were stranded close to Cleethorpes this potential can be carried back in time, particularly when bearing in mind poor navigation equipment and charts. Therefore as the River Humber has been an important waterway for millennia (as demonstrated be

the Bronze Age boats from Ferriby) then there is a moderate potential for a wide range of vessels of different dates and types.

The discovery of the Bronze Age axe in older peat beds (CL17) suggests that the once more extensive landscapes now being studied in the southern North Sea basin (known as Doggerland) may have been exploited in the study area in the past (Fleming 2004). The presence of the salt marsh pools in the area of Cleethorpes leisure centre (now a SSSI nature reserve) which has developed as a result of the presence of inter-tidal mudflats of Clee Ness Sands (a geological feature that has existed since the last ice age) could be seen as a parallel development to the meres of the Holderness coast further to the north. APs show extensive survival of peat beds on Cleethorpes beach, particularly in the area of the fish weirs (CL129), which indicates a moderate to high potential for the survival of palaeo-environmental information dating back at least as far as the end of the last ice age.

The saltmarsh and associated peat deposits and sand dunes are fragile systems that can be transient in nature: historic maps show that since 1887, the mean high water line has receded 87m (www.nelincs.gov.uk). This means that any associated archaeological remains will also be at risk from erosion unless protected in some way.

The results of the brief site reconnaissance have demonstrated that there is a high potential for unknown and unrecorded sites of several types to be present, depending upon the levels of beach erosion/accretion.

4.23 Humberston *(Maps 30, 31)*

Geology and topography

The underlying solid geology of the area is composed of chalk from the Upper Cretaceous (Neal 1988, 1 *et seq*.). In turn is over lain by a drift geology of Skipsea Till (Catt 1990, 21–3) from the Tertiary period which in turn in the Humberston area has been covered by estuarine and riverine derived alluvium (ibid, 10). The soils in the parish are described as surface water gley soils. These soils are seasonally saturated due either to rainfall or the lateral movement of ground water (Ellis 1990, 33).

The topography of the parish is one of low-lying land, some of it former marshland (mostly below 5m OD) which extends beyond the study area inland gradually rising to the Lincolnshire Wolds. A significant part of the study area for this parish is reclaimed land known as the Fitties, which was reclaimed during the 19th to 20th centuries.

The land use is split between a small residential area in the north, a large holiday camp complex along the coast on the reclaimed land, and with the remainder being used for agriculture.

Historical and archaeological summary

Prehistoric

The prehistoric period is only represented by two spot finds of stone implements; these are an Early Bronze Age axe and worked flints (HU6, HU10 respectively). There is no

other evidence for prehistoric activity though these spot finds are close to the edge of the original coastline and may represent exploitation of the coastal fringe.

Late Iron Age/Romano-British

There are currently no recorded sites or finds from this period.

Anglo-Saxon/Early Medieval

There are currently no recorded sites or finds from this period.

Medieval

There are currently no recorded sites or finds from this period.

Post-medieval

The spot find of a whetstone (HU5) is probably attributable to this period. Aerial photographic interpretation recorded a small area of post-medieval ridge-and-furrow cultivation (HU4) inland from the line of the earlier sea walls.

Modern

Evidence for the exploitation of the landscape in the early modern period comes primarily from the early editions of the Ordnance Survey (OS) with presence of a sheep wash (HU13), sheepfold (HU14) and Wadhouse Mill (HU12).

Only a single wreck is recorded in documentary sources on Humberston Sands though this probably reflects the greater importance of Cleethorpes and Grimsby to the north and Tetney Haven to the south, which would tend to be referred to when describing a location.

Probably the most significant change along the coast in this parish is the extensive reclamation of salt marsh in the area known as the Fitties. The OS map of 1824 shows an area of what appears to be salt marsh along the coast bounded by a bank with a track or path running along the top of it (HU11). By the 1889/90 editions the area now has a sea wall and is shown as dry land. The course of much of this sea wall can still be traced in the layout of the modern holiday camp. The area of reclamation has subsequently been extended further seaward to form the present coastline. Due to this reclamation there is a potential for possible buried remains from earlier activity and for evidence of the reclamation process itself to survive beneath the modern landscape.

Starting on the southern edge of the parish and crossing the boundary with Tetney parish there are a series of saltern mounds recorded from APs (HU15). These mounds are the waste material from the evaporation process used to extract salt from seawater and can range in size from 50m to 250m. The mounds seen here are the northern end of a complex that runs south through much of Tetney parish and is discussed in more detail below. What can be seen with the salterns in this parish is that they run parallel to the modern shoreline almost a kilometre inland and would have originally been located at a point just above the high tide mark to be able to collect saltwater with ease but avoid being flooded by high tides and storm surges.

The later modern period has seen two significant developments in the parish. The first was the use of the Fitties as a naval decoy (HU7) and its associated military infrastructure (HU8) set up to try to lure enemy bombers away from commercial centres such as Hull and Grimsby docks. In addition to the decoy and associated buildings a system of trenches was dug into the saltern mounds (HU15) to take advantage of the slightly higher elevation as a defensive position against potential invasion forces. After the end of the war the military establishment was used as a Royal Observer Corps post to monitor Cold War Activity (HU4, 9).

The second was the establishment of the holiday camp with its attendant (now removed) narrow gauge railway and stations (HU1, 2). The stations were at either end of the railway and acted to transport holidaymakers to and from the camp to the main road (www.homepage.ntlworld.com/david.enefer/lincs/lclr.htm). The holiday camp was built in and around the remains of the military camps and straddled the earlier sea defences.

Discussion

Due to the largely reclaimed nature of the study area within the parish coupled with the general lack of redevelopment little in the away of archaeological remains have been recorded. This does not preclude the possibility of potentially well preserved material surviving relating to the earlier exploitation of the coastal fringe surviving below the Fitties, particularly at what was the landward edge which could relate to both the fishing and salt production industries.

Depending when the reclamation process started the various earlier shorelines may retain evidence for piling and other forms of sea defence/works relating, potentially, from the medieval period onwards.

4.24 Tetney *(Maps 31–34)*

Geology and topography

The underlying solid geology of the area is composed of chalk from the Upper Cretaceous (Neal 1988, 1 *et seq*.). In turn is over lain by a drift geology of Skipsea Till (Catt 1990, 21–3) from the Tertiary period which in turn in the Tetney area has been covered by estuarine and riverine derived alluvium (ibid, 10). The soils in the parish are described as surface water gley soils. These soils are seasonally saturated due either to rainfall or the lateral movement of ground water (Ellis 1990, 33).

The topography of the parish is one of low-lying land, much of it former marshland (mostly below 5m OD) which extends beyond the study area inland gradually rising to the Lincolnshire Wolds. A significant part of the study area for this parish is land which has been reclaimed probably since the medieval period and as recently as the late 19th to early 20th centuries. The land use is entirely agricultural.

Historical and archaeological summary

Prehistoric

There are currently no recorded sites or finds from this period.

Late Iron Age/Romano-British

There are currently no recorded sites or finds from this period.

Anglo-Saxon/Early Medieval

There are currently no recorded sites or finds from this period.

Medieval

Although there are currently no recorded sites or finds from this period within the study area for the parish the place name for Tetney is derived from the Anglo-Saxon personal name *Taeta* and *–eg*, or island (Room 2003, 471). This suggests that as the modern settlement is some 6km inland the study area was still very much marshland. It has been suggested that during the Norman period the sea dike or bank ran along a line through Tetney, North Cotes, Marshchapel, Grainthorpe and then continued further south (Hoskins 1981, fig 7, 80, 100). This means that whole of the study area is a post-medieval landscape but with the potential for a prehistoric palaeo-landscape which once stretched out into the southern North Sea, as described above, buried beneath.

Post-medieval

With the landscape probably being entirely post-medieval in origin there has been relatively little time for human activity to modify what has been reclaimed. After the initial reclamation the land would have been used as salt marsh grazing and later arable agriculture. Evidence for agriculture can be seen in the presence of areas of post-medieval ridge-and-furrow (TE18) just to the south of Low Farm (TE17).

Prior to the construction of Louth Navigation (Site TE36) which allowed Tetney Haven to develop there were two havens within the parish with separate channels leading to them. The first was Tetney Haven located in much the same position as it is seen in the OS mapping but with a channel running closer to the shore and with an arm coming from it called Humberston Crike which appears to form a small landing place on Johnson's map of 1775. The same map also shows the second haven and its associated channel at North Cotes. The North Cotes Haven (and is associated creek of Tuttle Crike) ran across the area of land to the north of what is now RAF North Cotes and can be seen in part as soil marks in APs. The 1775 plan shows the two distinct channels for the two havens but by the 1824 OS both the channel and North Cotes Haven have gone and the channel for Tetney Haven is now an amalgamation of the two former ones.

As well as the routes of the channels the plan also records the sea bank as Tetney New Bank suggesting that it had not been long built in 1775 thus giving a partial chronology to the landscape.

The construction of the Louth Navigation (TE36) by canalising the River Lud began in 1767 and it was completed by 1774. The canal ran from Tetney Haven with its sea lock and sluice to Louth and this allowed Tetney to develop as a small port, to the detriment of Saltfleet. However its inland position restricted the size of vessels and amount of traffic it could handle (Boyes & Russell 1977, 304–15). The 1775 map clearly shows the Louth Navigation and the White House (Site TE 30) along with two square water filled

channels cut to the southern side of the Navigation which by the OS mapping have become filled and only show as soil/crop marks on APs. Although there is no obvious explanation for these two channels it may be that they were used to turn vessels around in order that they could then leave the Haven bow first or were to provide extra mooring space within the haven.

Modern

The most significant feature within the area is the extensive remains of the salt extraction industry (TE5, 23, 28, 32–5). These remains were once mounds composed of the silt residues and waste from the salt production process, which were piled into heaps to form substantial saltern mounds. Since the abandonment of the industry the mounds, and any associated features, have been ploughed smooth and the edges and detail of the mounds are now only visible as crop marks.

The salterns at Site TE5 and HU14 survive as a linear feature running roughly parallel to the modern coastline and by comparison with the 1824 OS map it can be seen that they closely follow the line of what is described as the Old Bank and even appears to show two substantial mounds along its length (TE23) which correspond to the location of the crop marks from the APs. Documentary and AP research into the salt industry in the north east of Lincolnshire have shown that the Old Bank of the 1824 OS was actually built around 1576 and linked several (then abandoned) saltern mounds to form the new sea bank (Grady 1998, 89). Further investigation of the OS mapping from 1889 shows a footpath running along a very similar alignment to the Old Bank (TE11) and this may well be the remains of the route used for workers to and from the salterns and to export the salt, probably to Tetney Lock where it could be shipped further afield. The remains at Sites TE34 and TE35 not only contain the saltern mounds but the remains of buildings associated with the industry. Another possible related building could be the site of the White House (TE30), which lies close to the junction of the sea bank and Louth Canal (TE36) as it runs between Tetney Lock and Tetney Haven (TE10). The name may refer to the colour of stock piled salt ready for shipment.

Little appears to have changed during more recent times with regard to the already reclaimed land though new areas of land gain can be seen from APs. The largest area of modern reclamation in the study area was a parcel of land immediately to the south of Tetney Haven which was reclaimed post 1889/90.

As the development of the Louth Navigation allowed more trade via Tetney Lock the number of vessels lost approaching the entrance to the Haven increased. This can be seen in the documentary accounts for at least 20 vessels lost at or near Tetney Haven (TE10) and Tetney High Sands (two ships and one aircraft) (TE9) along with six located ship wrecks (TE1–4, 7, 8) on the foreshore and several offshore.

In common with the rest of this coastline there was the construction of systematic defences during World War 2. These defences appear to be primarily related to RAF North Cotes to the south and form part of the defence complex for that base. The sites include pill boxes (TE6, 12, 14, 15, 22, 26, 27), a searchlight battery (TE29), slit trenches (TE20), barbed wire entanglements (TE21) and there was also the deliberate obstruction of the channel into Tetney Haven in order to disrupt any potential landings or raids (TE19, 24). The presence of RAF North Cotes to the south appears to have resulted in some enemy action as bomb craters are visible on APs along the shore line (TE16).

Discussion

Although the landscape of the study area within this parish appears to be solely post-medieval reclamation there is a good potential for the survival of evidence for the whole process of reclamation and how it was related to the widespread and once significant salt industry to be encountered. With the advancement of the shoreline by reclamation and the realignment of the havens and other potential landing places around Tetney and North Cotes Havens any remains associated with the earlier use of the area and its seaward approaches would now be buried and potentially well preserved. A good example of this potential is the two square channels recorded in 1775 but later filled in/silted up. Past experience has shown that features such as these are often used as dumping areas for vessels at the end of their working life and boat remains are often found in abandoned dock and other features (eg Buglass 1999).

The extensive remains of salterns seen in this parish attest to this once widespread and important industry. It may be possible by investigation into the location of the sites in relation to topography and other landscape features to be able to determine the dates and sequence not only of the sites but the dates and nature of the reclamation of the foreshore. Although much work has already been done on this by Grady (1998) there is still a high potential for a deeper understanding of this industry and its relation to both the surrounding landscape and the sea, particularly as much of the fuel for the final boiling of the brine would have been imported coal.

As the salt industry in Lincolnshire is known to have flourished in the medieval period until its eventual decline in the 17th century, it is possible that these salterns have a medieval origin.

The twenty documented shipwrecks dating from 1798 to 1901 around Tetney Haven demonstrate the dangers of approaching a coastline with extensive sand banks in sailing vessels. These vessels were of a range of different types and nationalities and as such any remains surviving could be of importance in the evolution of late post-medieval vernacular boatbuilding.

4.25 North Cotes *(Maps 32–34)*

Geology and topography

The underlying solid geology of the area is composed of chalk from the Upper Cretaceous (Neal 1988, 1 *et seq*.). In turn is over lain by a drift geology of Skipsea Till (Catt 1990, 21–3) from the Tertiary period which in turn in the Tetney area has been covered by estuarine and riverine derived alluvium (ibid, 10). The soils in the parish are described as surface water gley soils. These soils are seasonally saturated due either to rainfall or the lateral movement of ground water (Ellis 1990, 33).

The topography of the parish is one of low-lying land, much of it former marshland (mostly below 5m OD) which extends beyond the study area inland gradually rising to the Lincolnshire Wolds. A significant part of the study area for this parish is land which has been reclaimed probably since the medieval period and as recently as the late 19th to early 20th centuries. The land use is entirely agricultural.

Historical and archaeological summary

Prehistoric

There are currently no recorded sites or finds from this period.

Late Iron Age/Romano-British

There are currently no recorded sites or finds from this period.

Anglo-Saxon/Early Medieval

There are currently no recorded sites or finds from this period.

Medieval

Although there are currently no recorded sites or finds from this period within the study area for the parish the place name for North Cotes is first recorded in c 1115 as *Northcotis* and is derived from the Old English word *cot* for 'the huts or cottages' thus the name means 'cottages to the north of' (Mills 1998, 90).

As with Tetney to the north the modern settlement lies nearly 2km inland with the suggestion that the Norman sea dike or bank ran through the settlement and on south to Marshchapel and Grainthorpe (Hoskins 1981, fig 7, 80, 100). This would then mean that whole of the study area was a post-medieval landscape but with the potential for a prehistoric palaeo-landscape which once stretched out into the southern North Sea as described above buried beneath.

Post-medieval

With the landscape being mainly or possibly all totally reclaimed in the post-medieval period evidence for this activity would be expected to be still visible within the modern landscape. Grady (1998, 86) gives a date of 1638 for the sea bank running south from Tetney Lock with the Johnson's 1775 plan showing North Cotes Haven to the north of this bank. However, with the 1824 OS map showing the area to the south of the 1638 bank as largely blank with no discernable features and with the various roads terminating short of the study area, it would seem that once the sea bank was built the haven fell out of use and the immediate hinterland did not develop.

Modern

As already stated, the earliest Ordnance Survey maps of the area show that it was largely undeveloped at the start of the period, and it is not until the 1889/91 OS map that a small farm called the North Cotes Fitties (NC17) and New York Cottage (NC29) can be seen occupying the landscape. A road running just to the south of the farm appears to lead to slipway suggesting some form of coastal trade, probably of agricultural produce.

The level of coastal trade can be gauged from both the number of documentary records for at least 28 wrecks at North Cotes Point (Site NC8) and the extant remains of three vessels wrecked within the parish (Sites NC2–4). These ships were probably attempting to reach Tetney, North Cotes or Grainthorpe Havens. The coastguard station (Site

NC24) would have been part of the safety measures in place for the recording and assistance of shipping along the Lincolnshire coast and forms part of a network seen along this coastline (NC24, 32). The fact that the channel and haven at North Cotes disappear means that there is a potential for earlier remains to be present along or adjacent to its former course and location.

The majority of the study area within this parish is occupied by RAF North Cotes (NC14, 18, 19) and its associated defensive perimeter. The airfield was first opened as North Cotes Fitties during World War 1, being used as an intermittent grass landing strip, but was fully operational by mid-1918 (NC19). It was then closed in June 1919 and reopened in 1927 as an Armament Practice Camp; an inter-war hangar still survives on the site. After re-designations in 1932 and 1936 as a Temporary Armament Training Camp (NC20) it became RAF North Cotes February 1940 (NC14). RAF Coastal Command and RN Fleet Air Arm units were based there. The airfield perimeter consisted of pillboxes (NC6, 7, 12, 16, 25, 26) along with several phases of buildings for command and control, accommodation etc. (NC5, 11, 13, 15, 21–3, 27) used during the lifetime of the airfield and its subsequent role as a Bloodhound missile base. For a more detailed account see www.raf-lincolnshire.info/northcoates/northcoates.htm.

The site was extended later in the war, with various modifications to the runways, taxiways etc (NC18). After the war in October 1947 the camp was put into care and maintenance and then reopened in October 1963 as a Bloodhound SAM site (NC19), which it remained, with a short interval in the early 1970s, until 1990. The airfield itself was disused during most of the post-war years, and a number of buildings were demolished between 1982–3.

The use of the mud and sand flats as a bombing range can be seen from the remains of various mounds which possibly related to various targets (NC5) which appear to have been accessed by a causeway (NC9) from the modern sea wall. Several impact craters (NC10) have been recorded from APs, which could either be from enemy action or as a result of poor aiming during practice runs.

Discussion

Probably the most significant feature of the recorded evidence for this parish is the lack of indication for activity relating to the saltern industry. There are several reasons why this once important industry may be absent. The first, and perhaps most obvious, is that the extensive development of RAF North Cotes (NC14, 18, 19, 20) has covered or removed the evidence. Secondly, the area was reclaimed after the industry had declined and there never was any salt industry present. Thirdly, the area was considered too remote to exploit as there was no suitable haven or terrestrial access to transport the product to market. From the evidence recorded so far it would seem that the industry had already declined prior to the building of the 1638 sea bank (Grady, 1998, 84 *et seq*). The location of RAF North Cotes will have covered at least part of the site of North Cotes Haven.

As with Tetney to the north and the other parishes along this section of coastline there appears to be little potential for buried archaeological remains from the recorded evidence, however, as described above there is a potential for evidence relating to the medieval/early post-medieval reclamation to be recovered along with possible associated activities such as salt production and foreshore fish weirs.

The main feature of the study area is the airfield with its history of use from World War 1 into the Cold War era.

4.26 Marshchapel and Grainthorpe *(Maps 34–36)*

Geology and topography

The underlying solid geology of the area is composed of chalk from the Upper Cretaceous (Neal 1988, 1 *et seq*.). In turn is over lain by a drift geology of Skipsea Till (Catt 1990, 21–3) from the Tertiary period which in turn in the Marshchapel and Grainthorpe area has been covered by estuarine and riverine derived alluvium (ibid, 10). The soils in the parish are described as surface water gley soils. These soils are seasonally saturated due either to rainfall or the lateral movement of ground water (Ellis 1990, 33).

The topography of the parish is one of low-lying land, much of it former marshland (mostly below 5m OD) which extends beyond the study area inland gradually rising to the Lincolnshire Wolds. A significant part of the study area for this parish is land which has been reclaimed probably since the medieval period and as recently as the late 19th to early 20th centuries. The land use is entirely agricultural.

Historical and archaeological summary

Prehistoric

There are currently no recorded sites or finds from this period.

Late Iron Age/Romano-British

There are currently no recorded sites or finds from this period.

Anglo-Saxon/Early Medieval

There are currently no recorded sites or finds from this period.

Medieval

Although there are currently no recorded sites or finds from this period within the study area for the parish the place name for Marshchapel is first recorded in c 1250 (Hoskins 1981, 80) with the name appearing to be very literal as a chapel near or in a marsh. This would tie in with the names for the other settlements along the study area as being on the edge of an area of marsh or wet ground.

As with Tetney and North Cotes to the north, the modern settlement lies nearly 2km inland, with the suggestion that the Norman sea dike or bank ran through the settlement and on south to Grainthorpe (Hoskins 1981, fig 7, 80, 100); in fact in 1595 the main street of Marshchapel is described as being the former sea bank (ibid, 100). This would then mean that whole of the study area was a post-medieval landscape but with the potential for a prehistoric palaeo-landscape which once stretched out into the southern North Sea as described above buried beneath.

Post-medieval

There is some evidence for the earlier coastlines surviving within these parishes primarily in the form of cropmarks from aerial photographs (MC13, GR3, 4), but also in the possible alignment of an earlier route along the top of the old sea bank shown on the 1824 OS which can now be seen as a curving road (MC11) and dated by Grady (1998, 91) to 1770.

Probably the most significant site within the study area of these parishes is Grainthorpe Haven (MC14). This was located on the landward edge of an area of now reclaimed salt marsh and would have provided not only refuge to small coastal shipping in adverse conditions but acted as a transhipping point for the trade in agricultural produce outwards and manufactured or not available locally goods inwards. A number of wrecks are recorded in the area, some of which may belong to this period (see below).

Modern

The importance of Grainthorpe Haven can be further seen in the number of small wrecks dotted along this section of coastline (MC2, 3) along with the numbers of vessels lost recorded in documentary sources and assigned to named locations; 42 at Haile Sand (MC4); three at Horse Shoe Point (MC5) and five at Marshchapel/Grainthorpe Haven (MC14). As with the other locations along the coastline the wrecks recorded in documentary sources are all late 18th to early 20th centuries but indicate a potential for earlier losses. Seen on both APs and cartographic sources the approach to Grainthorpe Haven has been formalised by the addition of pilings along both sides of the channel which would not only allow easier navigation but help prevent silting. The approach channel to Grainthorpe Haven can be seen to split into two channels some 800m offshore with the southerly channel leading to Summer Coates Haven.

Forming part of the extensive defensive outer works for RAF North Cotes and anti-invasion obstacles generally there are a number of World War 2 structures. These include a pill box (MC10), an anti-aircraft battery (MC9), aircraft observation post (GR1), beach defences (MC6 and GR2) and a range of military buildings (MC7, 12, GR2). Several impact craters (MC8, 12) have been recorded from APs which could either be from enemy action or as a result of poor aiming during practice runs for the bombing range to the south off North Somercoates.

Discussion

As with many of the parishes along this section of coastline much of the landmass has been reclaimed from the late medieval period onwards and therefore contains little obvious potential for earlier archaeological remains apart from the more deeply buried material relating to various marine transgressions after the end of the last glaciation.

There are, however, two main areas of potential interest. The first of these is the nature of the reclamation processes used from the late medieval period onwards and the potential for well preserved buried remains of structures to survive under the modern landscape. The second is the use of the haven for the transportation of produce in and out of the area and what sort of infrastructure was related to this process and how much of it remains as an archaeological resource.

4.27 North Somercoates *(Maps 35–37)*

Geology and topography

The underlying solid geology of the area is composed of chalk from the Upper Cretaceous (Neal 1988, 1 *et seq*.). In turn is over lain by a drift geology of Skipsea Till (Catt 1990, 21–3) from the Tertiary period which in turn in the North Somercoates area has been covered by estuarine and riverine derived alluvium (ibid, 10). The soils in the parish are described as surface water gley soils. These soils are seasonally saturated due either to rainfall or the lateral movement of ground water (Ellis 1990, 33).

The topography of the parish is one of low-lying land, much of it former marshland (mostly below 5m OD) which extends beyond the study area inland gradually rising to the Lincolnshire Wolds. A significant part of the study area for this parish is land which has been reclaimed probably since the medieval period and as recently as the late 19th early 20th centuries. The land use is entirely agricultural.

Historical and archaeological summary

Prehistoric

There are currently no recorded sites or finds from this period.

Late Iron Age/Romano-British

There are currently no recorded sites or finds from this period.

Anglo-Saxon/Early Medieval

There are currently no recorded sites or finds from this period.

Medieval

Although there are currently no recorded sites or finds from this period within the study area for the parish the place name for North Somercoates is first recorded in 1086 (Hoskins 1981, 80). The name appears to derive from the Old English *Cotes* for cottage or hut (Mills 1998, 90) and summer seeming to indicate a seasonal occupation; the north part is simply to differentiate it from South Somercoates. The name could be seen to suggest that seasonal (summer) occupation was undertaken in this area probably relating to the use of the marshes for grazing, salt production or similar activities.

Like the other settlements along the coast the modern settlement lies nearly 3km inland with the suggestion that the Norman sea dike or bank ran through the settlement and on south to Grainthorpe (Hoskins, 1981, fig 7, 80, 100). This would then mean that whole of the study area was a post-medieval landscape but with the potential for a prehistoric palaeo-landscape which once stretched out into the southern North Sea as described above buried beneath.

Post-medieval

The importance of coastal trade can be clearly seen in this parish with the two havens at Somercoates (NS10) and Grainthorpe (NS8); there are a number of associated wrecks, some of which may belong to this period (see below).

The post-medieval reclamation of the area and its use as farm land can be seen from the presence of relic sea banks (NS34–6), Porter's Sluice (NS29) to control the water levels in Porter Marsh, a windpump (NS27) and the earthworks of a possible croft (NS31) recognised from aerial photographs. The main sea bank built to reclaim what became Porter's Marsh was built in 1638 (Grady 1998, 86) and this bank runs eastwards to Donna Nook where it then turns south.

Modern

A map of the sea bank at Donna Nook dated 1836 shows an interesting intersection of a road leading from North Somercoates to the head of the foreshore at a point where the samphire/salt marsh in front of the bank ends and the sand starts. This intersection coincides at a point called Stone Bridge and would appear to be to allow access to the sandy beach where it would be easier to tranship from small coastal vessels.

Associated with North Somercoates and Granthorpe Havens are their known associated wreck sites (NC1–3, 19) along with twenty-three documentary losses linked to North Somercoates Haven and a further twenty-three records in the vicinity of Donna Nook (NS26). In addition to these, the establishment of a signal beacon for shipping in 1835 (NS30), a Coastguard Station in 1844 (NS32), a rocket house (NS33) and a lifeboat with its own slipway (NS28) at Donna Nook in 1829 all show the importance of both preventing the loss of ships with beacons and rendering assistance should vessels become stranded. The 1836 map shows the Donna Nook lifeboat house along with a beacon and second house (called J Osborne's house) both to its north and in front of the sea bank on the sands. This location for the beacon is different to the one currently recorded and probably represents a different beacon.

The proximity of RAF Donna Nook just to the south of the study area means that there are the remains of a range of defensive features including numerous pillboxes (NS9, 15, 17, 18, 24, 25), anti-aircraft gun emplacements (NS 16), gun emplacements (NS11, 37), beach defence works (NS21, 23, 38), a road block (NS14) along with the usual military buildings for accommodation and command (NS12, 13).

The use of the sand and mud flats for bombing practice can be seen from the APs in the remains of various targets (NS4, 6, 22) along with more enigmatic remains that could be related to bombing (NS7, 20).

Discussion

With the amount of reclamation the importance of the history/archaeology this parish lies in its being a part of a wider landscape/seascape preserving the remains of the evidence for a widespread coastal trade involving small vessels operating from small havens and inlets along the coast. These vessels would probably have been engaged in the transportation of agricultural produce, salt and possibly fish out of the coastal margin to the larger centres of population for either consumption or processing and onward trade.

5 DISCUSSION & RECOMMENDATIONS

5.1 Discussion

The significance and potential impact on the archaeological resource has been outlined in Section 4. Clearly, national and local planning and heritage management policy insists that steps must be taken to preserve the resource from development where possible, but this is more problematic when dealing with natural processes, in this case principally erosion; the approach needs to be holistic. Shoreline Management Plans present an overall policy for coastal management, but do not deal with development, while Seascapes does outline human impact and use, area by area.

From the point of view of development pressures, the planning process requires the archaeological resource on each development site to be evaluated on a case-by-case basis where such a resource is considered likely to be present. Property ownership within such a large area is naturally fragmented; although the main risk comes from relatively large land blocks such as caravan and holiday parks, other sources of potential damage caused by smaller scale developments are still a reality. Although there is generally a tightly-controlled development policy for the coastal area, which restricts the size, placing and nature of developments, an overall archaeological strategy will still be difficult to develop and implement.

Period overview

Prehistoric

Palaeolithic

Holderness, in common with other parts of the East Riding, was exploited during most periods of its history, although the pattern of that exploitation altered and changed emphasis over time. Although the Palaeolithic period occupies about 98% of the time this country has been occupied by hominids and modern humans, this assessment is concerned only with the later Upper Palaeolithic period, characterised by the replacement of Neanderthals with anatomically-modern humans, and a related change in tool technology, including the development of bone harpoon points; this change had already occurred in Europe before Britain was recolonised following the end of the last glaciation.

The last ice sheets left northern Britain c 12,000BC, although arctic steppe and tundra conditions remained for about another two millennia. The climate became warmer after this, although there were periodic colder episodes. Pine and birch woodland began to develop from c 9,000 BC, and the area was increasingly colonised by large animals which preferred such conditions, such as deer, aurochs, and elk, gradually supplanting tundra species such as mammoth and woolly rhinoceros. The volume of water locked up in the form of ice sheets meant that sea level fell by c 125m during periods of peak glaciation, of which there were several during the course of the Quaternary, and probably lay c 100m below Ordnance Datum during the last ice age, when the area was uninhabited (Wenban-Smith 2002, 5). As a result, the North Sea basin at the end of this period was largely land ('Doggerland'), bisected by river systems which in the Humber and East Anglian regions drained northwards (Coles 1998, 1999, 2000). The focus for post-glacial hunter-gatherer activity was therefore widely dispersed, with the lower-lying

regions of Doggerland probably more attractive than inland areas, particularly uplands. The retreat of the ice sheets, however, led to a rise in sea level, which flooded the area over a relatively short timescale, in the Late Palaeolithic and Mesolithic periods. Submerged terrestrial deposits containing artefacts, human remains, and evidence for the extensive game herds which traversed the area are therefore widespread across the North Sea basin, and prone to damage by aggregate dredging, deep-trawling and other activities

Holderness formed the western fringes of the Doggerland area and there is some evidence from the region for Late Upper Palaeolithic activity., including a bone harpoon point from a quarry at Gransmoor near Driffield, dated by AMS to between 11500 and 11100 BP. This proves that the area was being exploited at a time that larger groups had arrived in residential encampments, following earlier exploratory hunting bands. Seasonal hunting and fishing were undoubtedly pursued in the area, with the hunters taking advantage of the increasing variety and quantity of game and the improving climate during the Windermere Interstadial, although there was a return to cold conditions between c 11000–10000 BP (the Loch Lomond Stadial); the Gransmoor point was deposited during the Windermere Interstadial.

The earliest periods are the least well represented in the archaeological record of the study area, as would be expected. The findspots are extremely sparse, with the majority coming from the beach; they could therefore have travelled from some distance from their original point of loss via longshore drift, although others may well have eroded from contemporary deposits.

The discovery of a Middle Palaeolithic flint core on the beach at Sewerby Cliff (BR54) is for example, likely to fall into the latter category, since the area lies north of the area affected by drift, and there is Mesolithic activity on the cliffs above, implying that the area held an attraction. The findspot is located close to the exposure of the buried Ipswichian cliff line, and a series of animal bones, which demonstrate the long-term stability of beach deposits compared with the area to the south (Boylan 1967). Several Upper Palaeolithic flint flakes have been found near Hamilton Hill, Barmston, in the surface of natural sands and gravels (BA174), although their exact provenance is unknown. A flint blade in the area of a later lake settlement at Withow Gap, Skipsea (SK20), also lies in an area of Mesolithic activity. A barbed bone harpoon (SK29) may also be of this period.

In Hornsea, a uniserially barbed bone point, presumably of Upper Palaeolithic date, was found in Hornsea beneath lacustrine peat during the construction of a gasholder in 1905 (HO152), not far from Hornsea Mere; Further south still, at the northern end of Holmpton parish, a flint scraper was recovered (HM9) from the northern part of the parish.

Other finds from the period comprise animal bones, which are only circumstantially contemporary: these include a mammoth tooth from the beach between Mappleton and Cowden (MA37), and the Palaeolithic is represented by an elephant's tooth (WT28) from the beach at Owthorne near Withernsea. These at least suggest the presence of contemporary deposits within the eroding cliff.

Mesolithic

The Mesolithic period was a development of its predecessor, rather than a cultural break. As the climate warmed, woodland expanded, exploiting and enriching the deeper,

richer soils which were forming on the weathering surface of the frost-shattered rock, glacial tills and moraines. The variety of game animals and different environments led to an increase in the range of tools developed, and the similarity of these on both sides of the modern North Sea reflect the ubiquity of a common Mesolithic culture. Across Doggerland and modern Holderness, small natural lakes (meres) were increasingly colonised by plants and trees, and they became the home of fish, wild fowl and freshwater molluscs. In the Mesolithic period, the meres and wetlands would therefore have been a magnet for seasonal hunters, and Doggerland may even have been the core area for human activity in the British Isles/Scandinavian region. Aquatic plants, both salt- and freshwater, would also have been exploited for food, medicine, fuel, clothing, basketry, rope, and temporary shelters. The sea level was, however, still rising as more water was unlocked from the ice sheets, and had probably already reached c –65m OD at the beginning of the period, 10000 BP (Coles 1998), and perhaps –10m OD by the end (Jelgersma 1979). This rapid rise would have led to the migration of human and animal populations as the area broke into peninsulas and eventually, islands, the larger of which (such as Dogger) survived well into the Mesolithic; by the end of the period, the coastline would have reached a form approaching that of the present. The wetland landscape of Holderness survived as a remnant of Doggerland, with the added attraction of a coastal environment, and may have become the home of some of the displaced population from further east.

In the study area, the presence of easily available flint, although not of the best quality, made the fringes of the chalk Wolds attractive, and the Bridlington–Sewerby–Flamborough and Ulrome–Skipsea areas seems to have been a particular focus.

A possible flint industry identified as Early Mesolithic to Late Bronze Age has been identified on Sewerby Golf Course (BR2), early evidence for the exploitation of the locally-occurring flint, although the suggested date range is rather broad. The next evidence is from much further south in the Barston area, where, a harpoon head (BA58) was recovered from near the low tide mark at the mouth of The Earl's Dike. A nearby find of an elk antler (BA76) may indicate a prevailing cool local wooded environment. In Ulrome, a probable Mesolithic blade core (UL19) was included among a number of largely undated flints found during fieldwalking by the Humber Wetlands Project.

Skipsea is an important area for the early prehistoric period, with several former meres represented, although only Withow Mere falls within the study area. Artefacts from the area of the Mere include a possibly Mesolithic bone spear point (SK29), and a barbed bone harpoon found in 1903 (SK17). These were recovered from among animal bones and antlers, including deer and elk/giant elk, in the case of SK17 from lake bed silts lying below 1.5m of peat Other provenanced and unprovenanced artefacts have been found in the parish, including an axe and core (SK5). The Withow area clearly includes one of the best opportunities locally for examining *in-situ* artefact-bearing deposits. The sole find from the study area in Hornsea was a barbed antler harpoon from below the low water mark (HO119).

Further south, Sand le Mere in Roos parish presents another good opportunity for the study of *in-situ* deposits of early date. The remains of timber structures have been recognised at low water since at least the late 19th century (RO98); although, a Neolithic/Bronze Age date is more likely for these, natural deposits containing Mesolithic artefacts are likely to be present on what is now the foreshore. At Withernsea are the remains of a submerged forest of Mesolithic date, known as Noah's Wood (WT30). This

was uncovered during spring tides in 1839, when animal bones and freshwater mollusc shells, suggestive of a freshwater lake, were also recognised. The lake is the former Withernsea Mere (WT36), which Burleigh's map of c 1560 shows to have been of considerable size even after it was permanently breached in the 15th century; Noah's Wood was presumably located around the eastern end of the mere, while further traces of woodland were found near the western end of the mere in the 18th century (see below), associated with the remains of Bronze Age logboats (WT29).

Neolithic

Although Britain was cut off from the Continent during the Mesolithic period, following the submersion of the Channel land bridge, this was not a barrier to the arrival of agriculture, and perhaps other cultural ideas. Long and round barrows, representing collective burials, and cursus monuments were constructed on the Wolds, with settlements apparently concentrated in similar areas to those exploited previously; this in itself suggests continuity, rather than a break with the past. Farmers began to clear areas of woodland, and the decline of tree pollen and the arrival of cereals is attested in the archaeological record. There is also evidence for some erosion of the exposed soil surface in mere deposits, which has been attributed to land clearance.

The Flamborough Head area contains evidence for a substantial Neolithic industry exploiting material extracted from the local till. Danes Dyke itself (FL36) has been assigned to this period, although it could be much later; it reflects a considerable investment in terms of labour, whether it reflects the will of a secular or religious elite, or a communal effort. Findspots in the area assessed include implements from near the northern cliff edge in Bempton (BE7, 5, 11), and scrapers from near Metlow Hill (BE26), while in Flamborough, flint knapping sites have been recognised at South Landing (FL156, 158), with a considerable number recovered from several locations during fieldwalking. In addition to local trade, a basalt axe was found at South Landing in 1975 (FL157), and an unprovenanced Great Langdale axe fragment (FL79). Several occupation sites have been identified in the Dykes End/South Landing areas, including sites at Hartendale Gravel Pit (FL152), a little further east (FL146), and at Beacon Hill Quarry (FL151). A further possible site was found in association with the flint production area at South Landing (FL158). A possible flint industry has been identified on Sewerby Golf Course (BR2), as already mentioned. Hartendale, Beacon Hill and Sewerby Golf Course additionally reflect either continuity into the Bronze Age or later reoccupation. Isolated finds and small assemblages are relatively common in the Bridlington area (eg BR13, 27, 54, 60).

In Carnaby, three unprovenanced stone axes have been found on Carnaby Moor, (CA3) and a fourth, of greenstone, comes from Wilsthorpe (CA4).

At Barmston, the period is represented by a 26m diameter ditched enclosure, identified c 200m inland (BA163), although this is perhaps more likely to be of Bronze Age date, given the presence of an occupation site to the east (BA166). Several stone and flint axes have also been recovered from the parish (BA122), and there have been a number of sizeable flint assemblages from organised fieldwalking, particularly in the area either side of Earl's Dike, which seems to represent a channel overlying a former mere. Withow Mere, Skipsea, includes the remains of what has been interpreted as a settlement, although there are indications that at least some of the concentration of brushwood and twigs encountered in the late 19th and 20th centuries may be a natural accumulation,

perhaps as a result of beaver activity. Whether natural or not, an alder sample recovered between 1978–84 has been dated to the early Neolithic (3771–3370 cal BC), indicating the build-up of woody material during a period of peat formation; the peat itself ceased to form after 3363–2940 cal BC, with the ensuing siltation attributed to increased run-off following local woodland clearance.

In Atwick, Hornsea, East Garton and Withernsea parishes, a number of artefacts have been found in the study area, including flints from an evaluation (HO75) and unprovenanced or unstratified stone axes, axe hammers, a quern and ploughstones (AT54, HO170, HO148, EG8, EG31, WT77). Ploughstones (flattened pebbles embedded in ploughshares to improve the cutting process and general durability) indicate agricultural activity.

Not until Easington is reached is there further evidence for Neolithic occupation, from beneath two Bronze Age barrows (EA 105, 117) east of the flood defences. The main occupation site (EA119) dates from the early 4th millennium BC to the mid or late 3rd millennium BC, and consists of rows of postholes which were interpreted as marking the outline of a long rectangular building, with associated hearths and refuse pits. The finds assemblage was substantial, and included over 650 sherds of pottery, saddle querns, a very early loomweight, and over 750 pieces of worked flint, included a polished adze, a tranche-type arrowhead, narrow blades, knives and scrapers. Charcoal recovered from one posthole gave a radiocarbon date range between 3915–3650 cal BC. A nearby henge (EA104) may also be of late Neolithic date.

From the south bank, the early prehistoric is very poorly represented, with a single Neolithic flint axe from the Cleethorpes area (CL57), reflecting the combination of natural accretion and deliberate reclamation in much of the area.

Bronze Age

The Bronze Age has been seen in the past as being triggered by the arrival of new peoples, characterised initially by the use of beaker-shaped vessels, the working of bronze, and the adoption of burials in round barrows, but it is more likely to represent a period where new ideas were absorbed, perhaps transported by relatively small numbers of settlers or itinerant craftsmen rather than mass migration or invasion. In fact, single burials in round barrows were already present in the late Neolithic, and the ‘Beaker’ period seems to have been a transitional late Neolithic/early Bronze Age phase, when copper was first exploited, and before bronze was commonly used (after c 2150 BC). The production and use of tools such as socketed axes spread rapidly, probably as woodland clearance expanded. The use of round barrows ended c 1400 BC with the adoption of urned cremation cemeteries, and secondary cremation burials in the mounds or ditches of existing barrows. Another feature of the period is the construction of the first linear dykes on the Wolds, perhaps marking tribal boundaries.

Agriculture became more widespread, with wheeled vehicles in use alongside ‘scratch’ ploughs. Seaweed was probably used as a fertiliser, and settlement locations alongside coastal areas and tidal estuaries may therefore have been favoured. The warm, dry weather of the earlier part of the period, however, allowed the spread of settlements into upland areas which were later abandoned as the climate became colder and wetter, with the formation or expansion of blanket and lowland bogs. The construction of trackways or causeways across such lowland bogs allowed exploitation of these areas’ resources,

and a means of communication. As for the Neolithic period, physical evidence for settlements, as opposed to burial sites, has proved elusive. Early houses seem to have been irregular or rectangular like those of the preceding period, and either single or in small groups, although later settlements were were characterised by groups of circular houses and sometimes enclosed by defensive structures, the forerunners of Iron Age hillforts.

The period is well-represented archaeologically, with barrows — individual and grouped — in several parishes. These include a concentration on Flamborough Head, with a group of four in Bempton (BE3), of which only one is still visible as a ploughed-out mound, a barrow from the Buckden Dyke area (BE4), two barrows near Metlow Hill (BE28, FL12), and several others no longer extant from the eastern part of the headland (FL20, 75, 93, 121).

Other features include Buckden Dyke, a north–south entrenchment from Bempton (BE4) (which may be later). There is also an occupation site at Beacon Hill (FL151) and Hartendale (FL146); the former includes the remains of an early Bronze Age building, with contemporary pottery and evidence for flintworking.

Bronze Age activity continued south into Bridlington, where a barrow existed at Marton Hall until c 1963 (BR11), with others in the Marton Road area (BR51), at Queen's Park (BR73) and near Bridlington Quay (BR122), neither of which survive. Two extant examples remain just outside the study area at Butt Hill (MHU482, MHU488), with a third found nearby during a recent geophysical survey (SMW2006). The discovery of several artefacts, including a penannular bracelet from the Quay area (BR161) could represent the locations of former barrows such as BR122 rather than casual findspots.

At Barmston, a Bronze Age occupation site next to Barmston Main Drain on the edge of a former mere, and including traces of timber structures (BA166), has been dated broadly to 1500–800 BC. It includes hearths, ovens, pits, postholes and cobbled surfaces, constructed on the surface of an earlier peat horizon, representing the infilling of the mere some time after 8590–8090 cal BC. The site was originally interpreted in the late 19th and early 20th centuries as a lake settlement, but the more recent dating of the mere peats has disproved that; there may, however, have been some later regrowth, perhaps sealing traces of a late Bronze Age/early Iron Age settlement phase. Three mounds to the north on Watermill Grounds (BA80) could well represent large barrows; the southernmost (probably now lost) seems to have included a central pit, which may have been an early excavation of the presumed primary burial area; these lie close to a large double-ditched enclosure of potential Neolithic or Bronze Age date (BA163).

A number of unprovenanced artefacts have been recovered (eg BA120, 121, 123, 176, 179), including spearheads and axes of various forms (including a side-looped spearhead, early flat axes and a flanged axe) together with flint assemblages, mainly from the Earl's Dike area, sufficient to demonstrate an active local Bronze Age population.

Evidence for the period from Ulrome includes two further possible ploughed-out barrows (UL67), a pit, containing artefacts (UL62), and several artefacts (UL37, 71), including a winged bronze axe, flanged axes, leaf-shaped and side-looped spearheads. Skipsea, Atwick and Hornsea have produced less evidence, comprising a few artefacts, including a debased beaker from near Withow Mere (SK28), looped spearheads (SK44, AT55),

early flat axe (AT67), and stone axe hammers, (AT61, HO151), the former datable to 1650–1250 BC, although a possible Bronze Age/Iron Age settlement seems to have been based around Withow Mere (SK20).

At Mappleton, Roos and Hollym are further possible barrows (MA51, RO18, RO68, HL9), while a burial attributed to the period has been found at Aldbrough (AL36). From Withernsea, two complete dugout canoes were apparently found in the 18th century (WT29), among the remains of a submerged oak and hazel forest, perhaps related to a former mere between Owthorne and Withernsea (WT36).

Easington appears to have been an important centre of Bronze Age activity. Although there are a large number of undated cropmarks which may belong to this period, several barrows (individuals and small groups) have been located at various locations from Out Newton south to Kilnsea, and towards the Humber shore near Lockham Farm (EA18, 49, 105, 117, 130, 138, 142, 159, 165–7, 169, 220). Of these, EA105 was excavated in the 1990s when it was exposed by the tide, and overlay a Neolithic occupation site; a nearby henge (EA104) was also excavated at the same time, and contained a cremation dated 2500–2000cal BC. A planked boat (EA163) was found on Kilnsea beach in 1996, lying in peat deposits representing a former mere. Other than fieldwalked flints, a relatively small number of provenanced and unprovenanced artefacts have been found in the area, including an axehead (EA92) and leaf-shaped spearheads (EA62, 312), and pottery, including fragments of cinerary urns (EA236); these have principally been recovered from Easington and Kilnsea beaches.

On the south bank, artefacts from Cleethorpes and Humberston include axe hammers CL17, CL91/92, the first with part of a poplar handle attached, datable to c 1400 BC, and axes (CL90, 135, HU4).

Iron Age

As with earlier periods, the Iron Age reflects continuity rather than invasion as previously believed, the adoption of a new metal being the main difference between the late Bronze Age and early Iron Age. Tools of iron, which was brittle, were initially inferior to bronze, which could be hammered back into shape, but had the advantage that it did not need to be alloyed with other metals, and could be reforged, and there were other new developments, including the manufacture of wheel-thrown pottery. The settlement and land-holding patterns were probably little different, with the Wolds dikes remaining as land divisions. In the middle and late Iron Age, however, there is evidence for increasing sub-division, with the appearance of smaller fields, trackways, unenclosed settlements of circular huts, and hillforts, with characteristic grain storage pits, or in East Yorkshire, raised post structures, surrounded on the flatlands by a circular drainage gully. There may, in fact, have been a return to an increased dependence on livestock farming, as opposed to cereal production.

Elsewhere in Britain, the identification of Iron Age burials is relatively rare. The ‘Arras’ culture which emerged principally in the East Riding area, is however best known for its square barrows and ‘cart burials’ which were a clear departure from the burial culture of earlier periods, and may be a reflection of the increased wealth of a new elite, with their prosperity perhaps based on cattle herds.

Although the largest concentrations of square barrows are on the Wolds, for example near Wetwang and Garton, there are a number of known and possible square barrows in the northern part of the study area.

Four possible examples have been identified in Flamborough and Bempton parishes near Metlow Hill, (BE27, BE29; FL13), and Buckden Dyke (BE4). At Headlands Upper School, Bridlington (BR64), a square barrow is located near a field system of presumed later date. In Barmston, a north–south line of 6–8 square barrows has been identified south of The Earl's Dike near Conygarth Hill (BA69), with a further example to the east in Sheep Walks (BA51). Three possible conjoined square barrows in Low Grounds (BA85) and a single example at Watermill Grounds (BA70) are located among the traces of later Iron Age settlements. A cart burial of either Iron Age or Anglo-Saxon date (HO34) was found near the seafront in the northern part of Hornsea; since this was close to an Anglian cemetery (HO30), the latter is more likely.

Other features in the area may be of Iron Age date, although few have been definitely dated. There is a considerable problem with dating cropmarks where these have not been investigated, and even where they have, reports (particularly early examples) often do not give clear dates. Some features can therefore only be assigned a general Iron Age date, whereas the majority are often referred to in records as Iron Age/Romano-British. The extent of features assigned to the later period demonstrates that the lack of precise dating serves to mask the density of occupation in the Iron Age proper. It must be remembered that areas of cropmarks represent a multi-phase palimpsest rather than a single phase of activity, and this is more apparent in complex monuments, where earlier elements are clearly cut through by later examples, or are on a different alignment. Even on excavated sites, the earliest phase is usually represented by a few features which are obscured by later recutting or extension.

Those assigned a possible Iron Age date include Buckden Dyke, Bempton (BE4). Settlement traces on Sewerby Golf Course (BR29, 34) and a ditch (BR35) are probably of the later Iron Age. A late Bronze Age/early Iron Age 'lake settlement' was investigated near the mouth of Barmston Main Drain (BA166). Ditches containing Iron Age pottery have been recorded to the north in the cliff face (BA153, 132), while Iron Age pottery has been found immediately north of Barmston Beach Caravan Park in association with a flint scatter (BA112), but in an area of Iron Age/Romano-British settlement. In Ulrome, a ditch of non-specific Iron Age date containing pottery and animal bone was located near Seaside Caravan Park (UL33), and an Iron Age or later double ditch or two pits in section, with a coin and pottery, was exposed in the cliff nearby (UL41). Near Withow Gap, Skipsea, there is possible Bronze Age/Iron Age settlement activity (SK20) on the edge of the former mere.

In Atwick, a number of structures have been identified; possibly all late: these include pits exposed in the cliff (AT20), and an Iron Age occupation site, with cremations, artefacts and iron slag, at Virginia Lodge in the village itself (AT36). A ditched enclosure near Low Skirlington (AT5) could be of Iron Age date. A 'pit dwelling' (possibly late) was discovered at Rolston, Mappleton parish (MA7), while a late Bronze Age or early Iron Age occupation site has been identified at Easington cliff (EA59).

Other than pottery from fieldwalking, casual findspots are few, but include Coreltauvian gold staters from Princess Street, Bridlington (BR166), Barmston (BA173), Ulrome cliff (UL34), Atwick (AT56, 69), Hornsea (HO3, 153), and a bronze coin of the Catuvellauni

(HL23) from Hollym. Two coins of unspecified denomination were also found on Easington beach (EA61). A carved chalk figurine has been recovered from Withernsea (WT66).

Late Iron Age/Romano-British

The arrival of the Romans north of the Humber c AD 71 added new elements to the East Riding landscape, with the construction of a series of roads linking planned centres, such as Brough and Hayton. In the rural hinterland, the Iron Age culture continued to develop, with existing settlements becoming larger, and more elaborate patterns of enclosures and droveways emerging, increasingly surrounded by boundary ditches. 'Ladder settlements' also appeared, often strung out along the new roads, taking advantage of improved communications to transport goods and materials. Villas were also constructed from the 2nd and 3rd centuries, in at least some cases replacing earlier farmsteads; examples include Rudston, Brantingham, Harpham and Welton Wold. Cereal production probably became more dominant, with the supply of the new towns, the Roman army and the villas driving an intensification of agriculture. Native industries such as pottery and ironworking continued, while new centres also started, for example in the vicinity of Holme upon Spalding Moor and North Cave.

The difficulties in dating rural cropmark sites has already been outlined, and the number of monuments assigned to the generic late Iron Age/Romano-British period is therefore disproportionately large in some areas. In others, however, the presence of medieval/post-medieval ridge-and-furrow masks any features of earlier date; there is no reason to assume that the pattern of small nucleated settlements with adjoining field systems is not evenly spread across the study area. The cropmarks identified normally consist of enclosures, droveways and boundary ditches, although possible house sites are occasionally indicated.

In Bempton, there are three areas of cropmark features (BE12, 22, 30). A considerable number have been identified in Flamborough parish, including FL6, 10, 25, 26, 29, 33, 104, 110, 114, 118, 130, 131, 133, 139, 153, with parchmarks in the village (FL99), possibly representing early features.

These are located inland, but on the cliff edge east of Dykes End are a group of enclosures and ditches (FL153). Excavations next to the cliff at Flamborough Quarry in 1979 identified ditches and possible Romano-British burials (FL138). Beacon Hill has been traditionally associated with the site of a 4th-century Roman signal station (FL150), and late Romano-British pottery has been found in the area, including Crambeck ware (FL148). A site identified as a promontory fort was located on the northern cliff edge at Briel Nook (FL21), with three small ramparted enclosures further west near Gull Nook (FL2–4).

The location of Bridlington at a sheltered haven at the east end of the road from Malton would have ensured that it was a focus for Romano-British settlement, although the location of any port is likely to lie 1–2 kilometres east of the present harbour. There are, however, traces of contemporary activity in the town and surrounding district, including a settlement outside the study area at Bessingby Hill, (MHU527), excavated in 1949. Between Sewerby Park and Danes Dyke, the evidence for occupation along the clifftop and its immediate hinterland continues from Flamborough parish in the form of a concentration of settlement features and artefacts (BR20, 29, 31, 34, 33, 35, 53).

Already lost are the final traces of a possible rectangular or square ditched camp (BR55), formerly located on the cliff edge south of the village, although the interpretation of this is uncertain; it may represent an Iron Age ramparted enclosure similar to the three examples on the north cliff at Gull Nook (FL2–4).

At Headlands Upper School as already mentioned, a field system and square barrow (BR87) are present in the grounds, while a possible enclosure has been identified immediately north of the Hull–Scarborough railway line (BR87). Traces of Roman occupation near Bridlington Quay (BR165), include an alleged coin hoard (BR151), an urn from Prince Street (BR143), and a female skeleton with a bronze armlet from St Olinda Road (BR140). Further west is a stretch of bank and ditch (BR115). In the Hilderthorpe area are two areas of cropmarks (BR181, 189), of which the latter extends southward into Carnaby (CA2). Two other concentrations in Carnaby include enclosures and trackways CA16, 25. There is a more complex and regular series of features near Cliff Farm (CA25), which extends over the cliff edge. A fragment of 4th-century 'signal station type' pottery found on the beach near this point (CA11) suggests this may be a late Roman monument.

Barmston also contains a number of cropmark complexes and isolated features, including BA1, 52, 70, 79, 85, 99, 101, 105, 128, 130. BA107 near Hamiltonhill Farm includes two possible rectangular huts, while BA113 near Barmston Beach Caravan Park is a possible settlement site, extending to the cliff edge, and consisting of several phases of ditched enclosures, boundary ditches and trackways.

In Ulrome, there is comparatively little activity in the study area: in the area of a possibly contemporary double ditch (UL41) at Seaside Caravan Park is a probable Romano-British pit broadly dated by pottery (UL36). A ditch and pottery were recorded on the cliff (UL11). An Iron Age/Romano-British enclosure was recorded just beyond the edge of the study area, but heading eastwards (UL51). The picture is the same at Skipsea, where a possible ring ditch east of Skipsea Grange (SK37) and a partly ploughed-out bank to the north, possibly flanked by ditches (SK35), and quite possibly much more recent, are the only monuments. In Atwick, the smelting site at Virginia Lodge (AT36) and enclosure at Low Skirlington (AT5) may be assigned to this or the preceding period. Hornsea, which could be expected from its later importance and the presence of the Mere to have been a centre of Romano-British activity, produces only undated ditches (HO20) and a ditch and enclosure (HO40) from the northern edges of the town. There is limited artefactual evidence for a Roman presence, including early–mid 4th-century coins of Magnentius (HO153) and Licinius (HO87), and pottery from a recent evaluation at The Levels (HO69).

The period is better represented at Mappleton, where a number of cropmarks have been recorded, including MA5 (possibly not archaeological features), 19, 21, 39, 45, 54, 60. These features have not been investigated, but a substantial ditch containing 4th-century pottery, a gully and two pits, just outside the study area boundary (MA22), suggest the presence of a late Romano-British settlement.

At Aldbrough three areas of cropmarks have been identified c 1km inland (AL12, 17, 35). Roman pottery and coins have also been found at different times in the cliff near the coastguard station (AL13), suggesting an unidentified settlement in the vicinity. The evidence from East Garton includes linear and curvilinear ditches of uncertain date (EG22) near Bracken Hill. There is no trace of a Romano-British 'signal station' and

enclosure said to have been located 250m inland in the north of the parish (EG3); it is in any case more likely that a structure of this type and date would have been located further east on a site now lost.

There are a considerable number of probable late prehistoric features in Roos, including a trapezoidal enclosure near the cliff edge at Hooks (RO3), a road or track near the cliff at Monkwith (RO41), and other ditches/ring ditches and enclosures (RO21, 31, 35, 40, 39, 67). The radiocarbon analysis of peat found on the foreshore at Sand le Mere (RO86) determined that it had formed c 2000BP, presumably within the former mere, although there was no indication of a settlement in the immediate area.

In Rimswell, the largest of a cluster of enclosures and associated boundary ditches to the north-west of Withernsea (RM44) contains a possible hut circle with a diameter of c. 20m. Further features in the parish include ditches and enclosures RM10, 13, 14, 42–5.

There is little cropmark evidence for the period from the built-up area of Withernsea, and it is chiefly represented by local finds, including, a large oval pit containing Romano-British pottery found during a watching brief in 1996 (WT52), fragments of possible cinerary urns (WT27), Roman pottery recovered from the cliff (WT73) and a quern stone (WT77) recovered prior to 1909. This seems to suggest a Romano-British presence in the parish. Roman occupation in Hollym is represented solely by an early 2nd-century Hadrianic denarius (HL22) from the beach, whereas undated cropmarks representing enclosures and field boundaries have been identified at Holmpton (HM58). The only dated artefact is a silver denarius of Faustus (HM36).

Late Iron Age/Romano-British occupation in the large parish of Easington is, curiously, represented by artefacts and features mainly recorded along the rapidly-eroding cliff, rather than by earthwork or cropmark features. These include a quern (EA32) from the shore at Out Newton, sherds of pottery, including Huntcliff Ware (EA57, 97, 102), a plate (EA83) found in the village of Easington itself. Roman antiquities from the Kilnsea area (EA311) include kitchen middens and a number of finds from the Humber shore, including a complete pottery vessel and headless skeleton found in peat deposits at Kilnsea Beacon. 'V'-shaped ditches containing artefacts have been seen in a number of locations on both the river and seaward side of Kilnsea, including a 1st-century ditch found on the Humber foreshore in 1962 (EA191).

To the north of Kilnsea, fieldwalking undertaken by HWP north of Long Bank recovered 95 sherds of 3rd- to 4th-century Romano-British pottery (EA144), suggesting an occupation site in the vicinity.

In Skeffling, two rectangular enclosures (SE8, 12) may represent agricultural activity of the period.

On the south bank, the Romano-British shoreline is located just inland of the study area, and the period is therefore represented by casual findspots, including coins (CL10, 16, 37, 40, 49, 116), pottery (CL28, 89), a quernstone (CL122) and a lamp (GG108). Some of these artefacts may have been eroded from the shore prior to the accumulation of post-Roman silts, into which they were incorporated and subsequently exposed; others may have been deposited along the coastline in marine sediments originating elsewhere through the process of longshore drift.

Anglo-Saxon/Early Medieval

The Anglo-Saxons arrived in the area as early as the 5th century, co-existing peacefully or otherwise with the remaining indigenous Romano-British population. The Vale of Pickering was certainly one route from the coast to the interior, with strings of early settlements along the carrs, and the Humber was almost certainly another gateway. Early burials have been found in the Sancton and Everthorpe areas, for example. The later part of the period saw the creation of most of the present settlements, although some have been lost, or are now represented only by farms. The present parish boundaries also began to come into being at some point in the period, perhaps quite late, although research elsewhere in England has demonstrated the probable survival of Roman villa or political boundaries in the parish system. Archaeological remains of the early and middle Saxon period, other than burial sites, are extremely sparse, but this is also the case for late sites, which largely lie beneath existing settlements, and have been destroyed or are otherwise inaccessible.

The creation of the open field system and the core layout of many villages are probably the most enduring monuments of the period, albeit much modified and extended in later periods. The villages of Holderness were often built along a single street, sometimes with one or two back lanes and cross streets, probably later additions, and with a green, sometimes one at either end or in the centre. The church, where there was one, generally stood at one end. Of the Danish presence from their initial raids at the end of the 8th century to their occupation and settlement of the area in the 9th and 10th, there are very few traces, other than placenames and an extremely small number of artefacts.

At the north end of Flamborough village are the remains of what appears to be a large ditched enclosure (FL47), which may pre-date the present road layout: it is not respected by the road leaving the village for North Landing, which bisects it at an angle, implying that it is earlier. Equidistant from the north and south cliffs, this could be interpreted as an early fort, either of Roman date (no evidence) or of earlier medieval origin, perhaps originating as a defensive work by or against Scandinavian intruders. Without further investigation, this cannot be confirmed, and there is no firm evidence currently that a single monument is represented by the apparent earthworks shown on a small number of wartime aerial photographs, or that the banks and ditches are necessarily of any great antiquity. Potentially, however, this is an extremely important site.

The Sewerby area is best known for its important early to middle Saxon inhumation cemetery (BR25), and a single burial of the period was also investigated at Barmston in 1982 (BA154). Further south, erosion has removed a number of important early settlements in Hornsea parish, but a further small early cemetery has been excavated at the Hydro site (HO30), suggesting the presence of a 6th-century settlement in the eastern part of the town, on a different site to the later village, which was located between the present church and mere.

At Tunstall, the latter part of the period is unusually represented by the recovery of the C14-dated partial skeleton of a cow from the foreshore (RO86), but which seems to have either fallen into the lake at Sand le Mere or been buried there. In Easington, there was reputed to be a monastic site, founded in the 7th century, although there are no further details of the site, and its location has never been identified.

The south bank evidence is even sparser, limited to a 'Danish' dagger found in Cleethorpes in 1937 (CL108).

Medieval

The medieval period represents a continuation of the pre-Conquest pattern of settlement and land division, albeit largely under new tenure at manorial level and above. A form of feudal system was already starting to develop in the late Anglo-Saxon period from traditional patterns of obligation and service, but with the destruction or ejection of a large proportion of the native land-owning class, this was to go much further with the imposition of a more rigorous continental system under what was effectively a military occupation. The most obvious physical manifestation of this on the landscape came in the form of the construction of fortified manors and castles, such as Skipsea Brough. A large number of moated sites, constructed in the century or so after the Conquest, are present in East Yorkshire, many of them located in Holderness. Where manors descended into the early modern period, some moated sites survived in the study area and elsewhere as farms or country houses, but most were simply abandoned and replacement manor houses built on new sites either in the villages, or just outside. From the 12th century, monastic communities and granges were also constructed in considerable numbers. These various classes of monument have often left clear, identifiable remains, and the period is therefore better represented than its immediate predecessor. There is also a considerable body of documentary evidence for monuments which are no longer extant, including former manor houses, almshouses, wind and watermills. The sites of some of these are identifiable; others are not, although they may be encountered as chance finds.

The open field system was retained and extended, sometimes with additional fields, pastures or commons added as surrounding waste or woodland was assarted. Traces of field systems, in the form of ridge-and-furrow, trackways, headlands and field boundaries, are still common, although declined considerably during and after World War 2, with the extension of arable cropping at the expense of old pasture, and the adoption of deeper ploughing techniques.

Flamborough parish contains several extant medieval monuments, other than its church, including the Castle (FL94), in reality a fortified tower surrounded by the fairly extensive earthworks of a hall and ancillary buildings. There is also the site of a possible hall at the south end of the village (FL129). At the north end is what appears to be a substantial ditched enclosure (FL47), discussed in the previous section, although possibly of medieval date. Another important monument, and the only one at risk from coastal erosion, is the site of a medieval pier at South Landing (FL161), apparently represented by an area of chalk blocks and large cobbles. This probably dates from at least the early 14th century, although the stonework may replace older timber structures. Burleigh's map of c 1560 shows a possible second pier to the west, and this site would clearly be worth re-investigating, following initial surveys in the 1980s, which plotted the extant areas of stone (ref).

Medieval Bridlington was located on two sites, the most significant being the present 'Old Town', located inland to the west of the Augustinian Priory precinct (MHU1626). The smaller settlement at Bridlington Quay did, however, include a harbour, granted to the Priory c 1135 (BR162); the north and south piers here seem to have been timber-framed with a rubble core, until as late as the 18th century, and may have been of similar

construction for much of the medieval period. Traces of the small settlement attached to the Quay have been excavated at Beck Hill (BR133), but there has been relatively little investigatory work in this part of the town, including the area around the harbour, where medieval waterfronts may by expected. There were probably few buildings of note, the area being mainly a fishing community, although warehousing and other structures associated with the commercial side of the port may be expected.

Sewerby village retains its medieval layout, with the present hall at one end (BR32) occupying the site of its predecessor; some of the masonry from the earlier building remains in the 18th-century Sewerby Hall. A chapel was also built here c 1414 (BR61). Traces of a medieval building outlying the village (BR25) have been found to the east on the site of the Anglo-Saxon cemetery. West of Sewerby near Marton DMV (MHU967) is a ditched and banked enclosure (BR5), possibly fishponds associated with the village manor. South of Bridlington, Hilderthorpe DMV has been scheduled, and a large area remains as an extant earthwork (BR180). The eastern section, however, now lies below modern housing on the seafront, and the site was undoubtedly damaged by erosion before the present sea defences were constructed. Stonework and a skeleton found in Kingsgate (BR184) may indicate a site for the village's medieval chapel (BR182). Similarly, Wilsthorpe DMV in Carnaby parish (CA15) consists of well-preserved earthworks, the eastern part under houses, with areas lost to the sea. In Barmston, a square ditched platform of medieval or later date (BA145) is one of the few monuments of the period, although a building was excavated south of the village in 1982 (BA154). Traces of Auburn (BA14) remain in the north of the parish, including a short section of street, several house plots, and the site of St Nicholas' Chapel (BA24), although most has been lost to erosion, as has the whole of Hartburn (BA67) further south. A ploughed-out moated site remains at Ulrome (UL63); the village itself contains earthworks representing former tofts, ponds and other features (UL57). In Skipsea, the former main settlement, Cleeton, survived into the post-medieval periods, but has been lost to erosion, while the main medieval monument, Skipsea Castle (MHU3403), and the village itself (MHU8944), lie outside the study area, as does the small planned settlement of Skipsea Brough (MHU8943) attached to the castle. Withow Mere, an important medieval fishery (SK28) had largely been lost to the sea by the 16th century, with the exception of part of the west end of the lakebed on the present beach.

In Atwick, principal features of the village are the earthworks of a number of house platforms and other habitation features (AT50), indicating substantial shrinkage, although this probably occurred in the post-medieval period, about the time High Skirlington (AT8) was also reduced to a single inhabited messuage. The village monuments include a large scheduled cross shaft (AT35).

As might be expected, Hornsea, with its church (HO67), moated rectory (HO60) and two medieval crosses (HO85, 110), includes more evidence for the period than the surrounding villages, although the parish itself lost several settlements, including the 'port', Hornsea Beck with its pier (HO155, 168), Hornsea Burton (HO156) and Northorpe (HO11), all falling to the sea by the end of the 17th century or a little later.

Mappleton has no medieval features other than the church (MA30), but the predecessor of the present Hall (MA27) was originally moated. An enclosure, field boundaries and a ditch have been identified north of the village (MA23), extending over the cliff. At the north end of the parish, Rolston (MA14) includes several areas of house platforms, plot boundaries, enclosures etc (MA11, 14, 16) and the moat of the original manor house

(MA17). On the cliff to the south-east, both Great Cowden (MA49) and Little Cowden (MA56) are now represented by eroding earthworks, including the possible remains of a manorial moat (MA42) at the former. Aldbrough parish included several townships, of which Thorpe Garth (AL31) and Ringbrough (AL51) remain as farmhouses. Ringbrough Farm includes a dubious moat (AL53), and there is a further possible moat near East Newton (AL45). Near the cliff at Low Farm/Hill Top Farm are the earthworks of a possible lost (or at least unrecognised) settlement (AL40).

In East Garton, Garton itself lies outside the study area, but Grimston is represented by earthworks of the main street and adjoining house plots (EG10), now largely ploughed out, but including the moats of a manor house and possibly its garden (EG11, 24) and fishponds (EG13). In Roos parish, Tunstall village, with its 'cranked' plan, includes two areas of earthworks, the first (RO44) with a possible moat (RO45), the second including two small enclosures (RO73). Hilston, in the same parish, is also a shrunken settlement (RO12), while Monkwith (RO34) and Sand le Mere (RO95) have been entirely lost to erosion. Two isolated enclosures of medieval or later date (RO2, 4) have been identified in the north of the parish at Hooks. In Rimswell, the period is represented by the site of a lost chapel (RM35) at Waxholme.

The medieval village of Withernsea (WT61) was an early casualty, being entirely lost in the 15th century; the present church (WT54) which replaced the original (WT20) is therefore also medieval, being completed in 1488. Neighbouring Owthorne (WT21) was also lost, although elements remained until the 19th century. A small medieval close or moated site (WT6) still remains on the cliff north of present Withernsea, although is presumably at risk of loss. There may have been a moat at Hollym (HL30) – one is shown on the 1st Edition OS – although nothing now remains. Further south at Holmpton, a moated site (HM45) may be the remains of a documented manor house (HM43).

Easington village included a number of documented monuments, including a manor house (EA309), rectory (EA81), hall (EA320) and almshouses (EA321), all now lost to subsequent demolition and redevelopment, with the principal exceptions of the church (EA76), cross base (EA82) and 'tithe barn' (EA85). Elsewhere in the northern part of the parish, Out Newton medieval settlement has been lost to the sea (EA12), together with a moated site and chapel there (EA9, 13). There may also have been a medieval hospital nearby (EA11). Further south, Dimlington (EA45) and Kilnsea (EA189) have also been lost, the latter replaced in the mid 19th century by a new village further west; its original church (EA188) was finally lost in 1831. Ravenser (EA319) and Ravenser Odd (EA314) undoubtedly lie too far east to concern the project; stonework found at Old Den in the early 19th century (EA308), and thought to relate to Ravenser, lies to the west of Spurn, and must represent some other feature, perhaps even one of the missing Humber villages. Other settlements, including Hutton (EA139), Sunthorpe (EA183), Turmarr (EA60) and Northorpe were also lost in the medieval period: too long ago to have any recognisable remains.

In the Humber estuary, Skeffling includes several sites of interest, including the lost sites of Burstall Priory (SE11), Burstall Garth (SE23) and the original St Mary's church (SE22): the 1466 replacement (SE4) stands in the present village. The fact that the area is currently subject to sediment accumulation may mean that these sites survive to some extent under the current intertidal mudflats, although their exact locations are unknown; a protective seabank had been built by 1350 (SE16), although its location is uncertain.

Still extant at Winsetts are the moated site of a scheduled monastic grange (SE17) and a smaller moated site (SE14), possibly originally the manor of Winsetts township. In neighbouring Welwick, the site of Pensthorpe village (WE4) has been lost, although may survive in part beneath the present mudflats.

Medieval and/or post-medieval ridge-and-furrow has been identified in most parishes, including Bempton (BE25, 31), Flamborough (FL34, 87, 128, 137), Carnaby (CA12), Barmston (BA131, 135), Ulrome (UL54), Skipsea (SK6, 38) Atwick (AT17), Hornsea (HO22, 31, 122), Mappleton (MA60), Roos (RO20), Rimswell (RM16, 21, 40), Withernsea (WT46), Holmpton (HM32), Easington (EA91), Skeffling (SE2) and Welwick (WE2).

On the south bank, there are few sites in the coastal 1km, an exception being the haven of Pyewipe, Grimsby parish (GG32). Earthworks associated with the former settlement of Thrunscoe (CL115) formerly existed, but now lie beneath modern housing and Cleethorpes Cricket Ground. The study area to the south of here probably lies mainly in front of a medieval sea bank, and was probably grazing marsh.

Post-medieval

Early post-medieval England was largely characterised by a continuation of the medieval way of life. Materially richer, the patterns of landholding remained much the same, although new families were taking over from those who had benefited from the conquest, whether by marriage, inheritance, purchase, or royal grant. At the start of the period, much of the East Riding remained in the hands of the great ecclesiastical landowners, including the Archbishop of York, the collegiate churches (York and Beverley Minsters), and the abbeys. Within a few years, following the Dissolution of the Monasteries (1536–40), large areas of new land entered the property market and was redistributed. Although this had profound impact on the sociological and economic affairs of the county, it had little initial archaeological impact in rural areas, beyond the actual demolition or partial demolition of monastic houses such as Meaux, Watton and Bridlington Priory. There was, however, an early movement towards the creation of houses with private parks on former monastic sites.

A much greater impact was that of enclosure. This had been taking place since the medieval period as landholdings were consolidated and internal boundaries moved to create new blocks, or ‘closes’. This process was, however, unevenly applied and slow. The last few decades of the 18th century, and early years of the 19th, however, saw a dramatic upsurge of enclosure by means of parliamentary act. The open field systems largely disappeared in a period of less than a century, although many new fields retained some of the old furlong boundaries, while areas of older closes were often fossilised in the new pattern, particularly around the margins of settlements. Late ridge-and-furrow survives in some areas, such as Hollym (HL14, 16, 29) and Easington (EA35, 52, 162).

A process of drainage, particularly of the lower-lying areas behind the coastal ridge, created new features from the 17th century onwards in the form of dykes and sluices (cloughs). Whereas the sites of those emptying into the North Sea, such as Tunstall Drain, have retreated with the flanking cliff, those emptying into the Humber may still lie on their original sites. These include the outfalls of Easington Clough (EA149, Ireland’s Clough (EA155), Firtholme Clough (EA158), Winsetts Clough (SE18), Skeffling Clough (SE15) and Weeton Clough (WE6). Seabanks, such as the Long Bank, Easington

(EA153), built 1771, and the Humber bank at Skeffling and Welwick (SE16), built in the 17th century, protected the inland areas from seasonal floods at extremes of high tide; the latter replaced a medieval structure mentioned as early as 1350. Seabanks were also constructed on the south bank at Cleethorpes (CL126), Tetney (TE11, 25), Marsh Chapel (MC11, 13), Grainsthorpe (GR3, 4), and North Somercoates (NS34–6); of these, TE11 and MC11 were in existence by 1824, although the date of construction is unknown, the others may be later.

Along with the new field systems came new roads, some of them created by turnpike acts, others rationalising existing roads or rerouting sections around the rectangular fields laid out by the enclosure commissions. New farms were created across the previously empty landscape, replacing many of the older buildings within the villages. A new class of gentleman farmers emerged, some of them descended from older families; most of the remaining medieval or earlier post-medieval manors were abandoned or rebuilt at this time, with the appearance of large residences such as Burton Constable and Sledmere House. Some settlements were removed in whole or part to make way for enlarged parks attached to the houses, as at Sewerby, where the Hall (BR32) replaced a 16th-century building and earlier manor house. Other substantial residences of the period include Marton Hall (BR8) of 1672, and the 18th-century Marton Manor (BR3). Flat Top Farm at Hilderthorpe (BR179) originated in 1776 as a summer holiday home for the Sykes family of Sledmere, with fine views in the family apartments overlooking the bay from the first floor, and the farmer's quarters at ground level.

The post-medieval period in the study area is mainly represented by buildings located within the many settlements, whether towns, such as Bridlington, Hornsea, Grimsby and Cleethorpes, or smaller villages. Hornsea includes some notable buildings, including Low Hall (HO108) and Old Hall (HO62) in Hornsea, both built in the late 17th century by the prominent Acklam family, whose Grade II listed funerary monuments lie behind the latter (HO102–5). The present Hornsea Museum in Newbegin occupies the 17th-century Burns Farm. Moat Farm, East Garton, occupies the site of an earlier moated manor (EG11) with a second moat perhaps containing a garden (EG24). The house was listed in the 1672 Hearth Tax, but it was replaced in 1781–6 by Grimston Garth (EG21), a Gothic-style building standing in its own park to the south. Glebe Farm, Hilston (RO13) is of late 17th-century date.

Bridlington was protected by a harbour and presumably sea defences during the medieval period, and the historic core (Bridlington Quay) has been at little risk from coastal erosion, beyond this, however, it was not until the construction of the promenades to the north and south that the cliffs were protected, although there was relatively little activity in these areas until the town became a destination for daytrippers and holidaymakers in the 19th century. Bridlington had substantial quay installations, including the stone-filled timber North and South Piers (BR162), and the harbour contained a 17th-century sluice (BR167) at the point where the Gypsey Race entered, these may survive as archaeological features; the site of the original North Pier could lie just outside the present harbour. Hornsea and Withernsea, by comparison, suffered considerable erosion. The satellite villages of Hornsea Burton, Hornsea Beck and Northorpe were all largely destroyed. Hornsea Beck was particularly important as the 'port' of Hornsea, with its own pier (HO155), apparently lost by c 1609. Aldbrough and Mappleton, both listed as ports in 1565, have been badly affected by erosion, and the satellites of Great and Little Cowden have largely been eroded; Little Cowden had lost its church by 1690 (MA56). Kilnsea had a timber jetty in 1691 somewhere on the

Humber shore (EA203), and its site may still remain beneath the estuary mud, perhaps near the point where the elbow of Easington Road touches the coast.

There is little of significance from the south bank at this period, partly owing to the fact that much of the area was being reclaimed and remained as grazing marshes (this is reflected in the 1824 map of North Cotes, for example), with agriculture, represented, for example, by late ridge-and-furrow in Humberston (HU4) and Tetney (TE18), apparently confined to the landward side of the old sea walls; the village centres principally lie outside the study area. At the beginning of the period, Grimsby was in decline, partly due to the silting of the Haven, and although there were attempts to restore its fortunes, including the diversion of the Freshney into the Haven to assist in scouring it, only the opening of a floating dock at the very end of the period in 1800 began the process of renewal; elements of the dock survived later developments, including the entrance lock of 1798–1800 (GG50). Cleethorpes, too, was to expand in the 19th century. To the south in Tetney, the construction of the Louth Navigation (TE36) from Tetney Haven to Louth allowed the development of the village as a small port. Grainthorpe and Somercoates Havens were also important to the local economy, providing small-scale loading and transhipment areas for local shipping and industries.

In Roos, the seaward end of the mere which gave Sand le Mere its name was under constant attack from coastal erosion, and had been protected by a bank by 1622, although it is not shown on Burleigh's map of c 1560, which instead depicts a small bay. This implies that the lake was breached several times, but as it still appears on 17th- and early 18th-century maps, it is assumed that the protective bank was effective until the cliff at either side had retreated so far as to make its maintenance untenable. Erosion in Withernsea parish, where the original settlements of Owthorne and Withernsea had been substantially destroyed by the end of the medieval period, continued, with the church of St Peter, Owthorne (WT21) virtually unusable by the end of the period. Withernsea mere seems to have survived as a large bay in the 16th century, but at some point in the period was filled, either by marine sediment or sand bars, much of which may survive behind the present seafront.

Surviving farmhouses and other rural buildings survive in smaller numbers, and include Carr Farm (FL107) in Flamborough village, which retained part of its original cross-passage form and Beacon Farm (FL123, 127), occupying the site of an earlier structure. Manor Farm, Barmston (BA138) is of late 17th- or early 18th-century date, and may incorporate elements of an earlier moated hall. High Skirlington Farm, Atwick (AT7) was built on the site of a DMV. Manor House Farm, Holmpton (HM48) is apparently of 17th-century date, although rebuilt rather later.

There are a few other notable classes of buildings, such as mills and lighthouses, the latter including the Old Lighthouse at Flamborough (FL138) Angell's 1674 High and Low Lights, Spurn (EA241), and Smeaton's 1776 replacements (EA 271, 272). Most pre-19th-century windmills in the study area have been demolished; a few of these had been constructed on traditional sites, occupied by medieval or earlier post-medieval predecessors, such as an example on Mill Hill, Skipsea (SK4), where the medieval mill was replaced by c 1550, and there was still a working example in 1895, another in Mill Lane, Hornsea; the first postmill was recorded in 1584, and examples are shown on maps of 1663 and 1864. No former watermills now remain in the study area (eg BA61), have also gone; the limited number of suitable locations meant that these were often located on the sites of medieval mills. No horsemills survive (eg FL80, BA61, HO167). A

17th-century windmill in South Field, Mappleton (MA47) remains to this day in an unrestored condition, having been used until 1905. A medieval mill at North Field, Aldbrough, was rebuilt in 1685. Other examples of post-medieval industry have also largely disappeared, including 17th-century evidence for malting (HO162) and tanning (HO160, 169).

Almshouses survive here and there, include examples in Barmston (BA142), now converted into two cottages; those constructed in Waxholme (RM34) and at Out Newton (EA20) have not survived. A small number of early schools were built, of which the example at Atwick (AT44) was built in 1715, and remained in use until 1877.

Military structures feature during this period, which is unsurprising, considering the periodic threat from Spanish, Dutch and French sources. Some, such as the beacons erected as part of a coastal invasion warning system in the late 16th century, would have consisted largely of fire baskets set on poles, and have entirely disappeared, as have their late 18th- to early 19th-century counterparts, which were often built on the same traditional sites. Some of the 1588 beacons probably occupied sites used during earlier periods when invasion threatened, for example in 1539, but also at various times in the medieval period; these earlier beacons are likely to have been piles of firewood, assembled at short notice. A letter to Elizabeth I dated 1558 listed three beacons each at Kilnsea, Dimlington, Withernsea, Waxholme, Waxholme, Grimston, Aldbrough, Mappleton, Hornsea, Skipsea, Barmston, Bridlington, Flamborough, as well as Welwick in the Humber. An example of a later beacon survived on Standard Hill, Bempton in 1829 (BE18), and one was replaced at Beacon Hill, Flamborough (FL150) in the early 19th century, on a site used since the 16th century (and traditionally the site of a Roman signal station). Most of the coastal parishes to the south of Flamborough Head up to three beacons in 1588, but many of these sites have now been lost to erosion, including those at Skipsea (SK46) and Kilnsea (EA131, 137, 154): the peculiar topography of the Holderness coast included a chain of low gravel mounds along the cliff edge, several of which were still named 'Beacon Hill' on the first edition Ordnance Survey (eg in East Garton, EG25 and Easington, EA154). Of the three beacons in Barmston (BA170) in 1588, one was reconstructed c 1800 on Hamilton Hill, and remained as late as c 1850. In Hornsea, two were erected as late as 1794. In Withernsea, one was replaced in the 1780s, remaining until c 1830, and in Easington, a beacon remained until 1850 on Dimlington Highland (EA38).

Other military structures of the period are rare. An artillery fort and battery had been constructed at Bridlington Quay to protect the harbour in the 17th century (BR102, 175). Semaphore stations were constructed near Flamborough lighthouse in 1796 (FL84) and on Spurn (EA281), where an artillery battery and barracks were added in 1798.

Modern

The joint agricultural and industrial revolutions combined to create the modern landscape from existing and new elements. The coming of the railways in the mid 19th century caused major alterations to the landscape, not just in terms of new infrastructure, but in the development of new residential estates and industrial or commercial enterprises. Mass tourism, particularly to the seaside, was another side-effect, leading to the development of towns such as Bridlington, Hornsea, Withernsea and Cleethorpes, and the later 20th-century growth of holiday camps and caravan parks. This reached a plateau in the mid 20th century, and a period of post-war decline was reflected in the

closure of the Hornsea and Withernsea rail links and the subsequent economic decline of the area. This has not yet been reversed, although the tourism and leisure/retail sectors are likely to hold the key.

World War 2 (and to a lesser extent World War 1) resulted in the creation of a large number of military installations, from simple earthwork trenches and weapons pits to pillboxes, gun emplacements and airfields. Post-war, weapons ranges, radar sites, and nuclear fall-out monitoring posts remained, although these have now shut, ending a long tradition of military interest in the area, including the siting of beacons in the 16th and 18th/19th centuries as part of an early warning system.

Erosion continued at a rapid pace in Holderness, with a number of medieval settlements finally disappearing in the first few years of the 19th century; only a single farm remained at Little Cowden by 1854, rebuilt further inland subsequently (MA62). The entire eastern half of Great Cowden was also lost, and the village was effectively rebuilt inland, as was Owthorne, which had largely disappeared by 1844. A new St Peter's church (WT24) was built inland in 1802, together with a vicarage (WT48) and school (WT47) in 1847–8.

Conversely, the period was characterised south of the Humber by substantial reclamation of former salt marsh, particularly the Fitties, south of Cleethorpes. The existing system of sea banks (eg HU11) was replaced by sea walls, allowing the drainage of areas to the rear. The new land was used for agricultural purposes, with a few buildings appearing by the late 19th century (NC17, 29). The salt marsh had previously been used extensively for the production of salt by evaporation in the post-medieval and early modern periods, leaving a series of saltern mounds along the original later post-medieval shoreline, as represented by the sea banks. The Humberston/Tetney complex (eg HU15, TE5, 23, 28, 32–5) now lies c 1km inland on the edge of the study area. There are traces of some buildings related to the industry. The salt was transported to the nearby Louth Canal (TE36) for transhipment.

At the beginning of the period, the range of monuments represented is similar in many ways to that of the preceding period, but there was a change in emphasis through the 19th century. Many medieval churches were rebuilt, with original detailing altered, and new structures constructed, quite often to what was considered a more pure 'Early English Gothic' style, although St John the Evangelist, Sewerby House, was neo-Norman BR30). A large number of non-conformist chapels were also constructed. The majority of village houses which survive today were built during the period, often in a continuation of the vernacular style until the later 19th century, but thereafter increasingly as copies of alien urban architecture, including suburban Gothic or 'Queen Anne' style villas, terraced housing, and from the beginning of the 20th century, semi-detached houses.

Tourism led to the construction of buildings and often highly-decorative structures purely connected with the leisure industry, at first catering for 'polite society'. In the final years of the 19th century and into the Edwardian and interwar periods, the seaside became an increasingly popular destination for working class day trippers taking advantage of bank holidays, days off, and cheap third class tickets on the extensive rail network. In Bridlington, where the railway station (BR109) was built in 1846, the North Promenade (Sea Wall Parade) and South Promenade allowed the expansion of the new town, together with a string of hotels and boarding houses, although there were few places of entertainment until the arrival of mass tourism at the end of the century, with the Victoria

Rooms (BR158) of 1848 being a notable exception. The first Spa was built in 1896 (BR173) and replaced twice before the present structure was constructed in 1932. The harbour itself was substantially rebuilt between 1816–48. The railway arrived later in Hornsea, in 1864, allowing the area between the market town, which was a little inland, and the sea to be developed, although the Marine Hotel on the Promenade (HO25) had already been built, in 1837. A pier was constructed between 1878–80 (HO51) but proved short-lived: it was demolished in 1897. The Hull–Withernsea line was built in 1854 and is shown on the 1st Edition Ordnance Survey at a period when redevelopment of the area was yet to happen: the landscape looks very empty, with much of the area between the station and the sea being built in the years following. A concrete sea wall and 60m pier were constructed in the 1870s to bring some gentility to the seafront; the latter was demolished c 1900, leaving just the castellated brick entrance (WT44).

South of the Humber, dock construction began in Grimsby in 1800–01 with the Old Dock followed by the Royal Dock (GG24) in 1852, at the same time as the first Dock Tower (GG8), No.1 Fish Dock (GG14) in 1856, No.2 Fish Dock in 1877–8 (GG40), and Alexandra and Union Docks (GG61, 51) in 1879. A second Dock Tower (GG7) was built in 1892. other than the docks, Grimsby contains a large number of related buildings, including boatyards, sheds, railways, fish smoking houses, ropewalks, and industrial premises, such as sawmills and foundries. Houses, places of entertainment, churches and chapels were built for the growing workforce in Grimsby and neighbouring Cleethorpes, which developed as a residential and leisure partner.

Evidence for rural industry is widespread during this period, much of it shown on the first edition Ordnance Survey maps covering the area. In the villages and surrounding countryside, a large number of windmills continued to be built, often on traditional sites, as at Mill Hill, Flamborough (FL109), or restored to keep them working more efficiently. A number were built in and around Bridlington town, some for corn, others for bonemeal (BR129) or sawn timber (BR139), feeding demands led by the needs of an increasing population. Hornsea also had its quota of mills for the same reason.

Limekilns are a particularly common class of monument, appearing in most parishes north of the Humber, perhaps as early as the later 18th century, and they reflect contemporary improvements in agricultural practice. Quicklime was used to break up and ‘sweeten’ clay soil. It would also have been used locally in building mortar and for lime-washing chalk house and shed walls to make them waterproof; as well as to brighten and disinfect the interiors. Examples are known from Flamborough (FL17, 19, 27, 132, 135, 140), but also occur around the fringes of towns like Bridlington (BR86, 70), as well as in open country (AT26, 29, 30, 48, 51, HO6, 44, 111, MA3, AL6, 11, 28). Gasworks appeared in Bridlington as early as 1833 (BR97), with others built in Hornsea and Withernsea. Brick and tileworks using local clays are also found (eg FL41, SK32, HO146, 138, WT68, 70, HL1).

The appearance of coastguard stations began in the early years of the period with the construction of bases for the Preventive Water Guard, which was raised in 1809 from Royal Navy personnel. The successors of earlier Riding Officers, tasked with preventing smuggling, the Guard were trained in lifesaving techniques and to protect wrecks from looters from the 1820s. Renamed the Coast Guard in 1822, new stations were built at intervals along the coast, sometimes replacing earlier structures. In Flamborough, a station was built near the Iron Age promontory fort at Briel Nook (FL18) to monitor Filey Bay and the dangerous Bempton Cliffs. Preventive (coastguard) Stations were also built

at Sand Lane, Ulrome (UL50) in 1829, replaced c 1890 by another further west as the original site was lost, and a station built in Hornsea (HO159) c 1830 was also lost, and subsequently replaced (HO47); coastguards and life-saving apparatus were located at Great Cowden and Aldbrough in the 19th and early 20th century. There was a watch house for the Preventive Water Guard at Waxholme in the early 19th century (RM33), replaced by a coastguard station c 1826 (RM7). The station in Holmpton (HM59) and its cottages has been lost. The 1872 station near Kilnsea (EA204) has been converted into housing. The location of a Watch House built at Spurn in 1822 (EA283) is unknown, but it was presumably at the south end near the lifeboat station and lighthouse. A coastguard station was built near Donna Nook in 1844 (NS32), with a later rocket house (NS33); there was already a warning beacon for shipping here from 1835 (NS30), and the danger of the area is reflected in the number of documented shipwrecks (NC1–3, 19, NS26).

Similarly, the National Institution for the Preservation of Life from Shipwreck was created in 1824, and stations were built at intervals. The organisation became the RNLI in 1854. Flamborough was a key location, with lifeboat stations constructed on North and South Landings in 1871 (FL15, 147). Lifeboat stations were also constructed in Barmston (BA161), Withernsea (WT39), and on Spurn, on the site of a former barracks as early as 1810 (EA281: see below). This was replaced in 1913 by a boathouse sited on a short pier with a slipway (EA291); the present lifeboat is moored. A lifeboat with a slipway was also established at Donna Nook in 1829 (NS28).

The present lighthouse at Flamborough (FL66) was built as early as 1806, although the tower was raised in 1925, another was built in Withernsea in 1892–3 (WT41). On Spurn, Smeaton's Low Light (EA272) was badly damaged in 1849, and it was rebuilt to the west in 1852 (EA268); although the new lighthouse was disused after 1895, the tower remains. The High Light (EA271) was demolished in that year, leaving the circular compound wall which surrounded the base. The single replacement building (EA266) was closed in 1985, but still remains intact.

At the beginning of the period, the military connection continued with the construction of a signal station at Salph Hill, Aldbrough (AL8) in 1805. To the signal station and battery built at Spurn in 1795 and 1798 (EA281), a barracks was added in 1804. The battery was dismantled in 1809, and the barracks converted into a lifeboat station (EA282) and inn (EA284). Cottages for the boat crew were built in 1819 (EA254), replaced in 1857–8 on a new site south of the lighthouse, with a later school (EA275).

From Cleethorpes came evidence from the lower foreshore for the presence of a fish weir (CL5) and at least three to four fish weirs (CL129). The date of these is uncertain, and they may be post-medieval. Oyster beds are also shown on the 1889 OS (CL121, GG25).

There are a number of monuments related to World War 1 or the interwar period, although these are not common and can often only be distinguished from their World War 2 counterparts when apparent on pre-1939 aerial photographs. They include a camp on Flamborough Head (FL89), and a rare airfield in Atwick (AT22), used between 1914–18; no trace of this now remains, partly because the small wooden buildings of the period lent themselves to being dismantled and moved elsewhere, while the runways and taxiways would have been grass. There may also be a World War 1 defensive system in the Carnaby, Ulrome and Barmston area (R. Thomas pers comm.). There are,

however, the remains of a RNAS seaplane base on Hornsea Mere (HO114) on the fringe of the study area. Several of the buildings were of brick, and these remain in use by the present boatyard. South of the Humber, the airfield at RAF North Cotes was first used as an intermittent grass landing ground in 1916–18 (NC19), becoming operational in 1918–19 before being abandoned. It reopened in the inter-war period, largely in a variety of training roles, becoming an RAF Coastal Command and RN Fleet Air Arm base during the war (NC14, 18). From 1957, part of the site became a Bloodhound AA missile base, which it remained until 1990. A pre-war hangar survives among the remaining later buildings.

Four buildings on the cliff south of Mappleton (now lost) may have been of World War 1 vintage (MA38). Here also was the extensive interwar Rolston Camp, begun in 1921 (MA4) and enlarged in the following decades to include a rifle range set up in 1907 (MA2) and another further south (MA6). In Withernsea, the Black Mill (WT4) was used as an observation post during World War 1; this was an important task as German naval raids occurred on the East Coast in the first two years, prior to Jutland, and there was a constant threat of Zeppelin raids until June 1917.

The most prominent military structures of the period were concentrated near the Humber. Here, Godwin Battery, Kilnsea (EA184) and the Spurn Fort (EA301), incorporating the Green Battery (EA294), the Light Permanent and Light Temporary Batteries (EA292, 302) were built between 1915 and 1916. The former was built at the end of Spurn, and remains in reasonable condition, but the latter was constructed on the cliff at Kilnsea, and much has now either collapsed or been deliberately dismantled to make it safe: substantial displaced structures now lie on the beach. All of the batteries included barracks, searchlight emplacements, observation posts and other installations, most of which only survive in part as concrete floor platforms. A Port War Signal Station (EA259) constructed near the lighthouse identified friendly shipping by visual and sound signals; the perimeter wall remains (EA266) although the signal tower no longer survives. Other World War 1 structures include a number of blockhouses providing covering fire (eg EA 279, 286, 295).

The Spurn and Kilnsea Railway (EA239) was also constructed along the length of the peninsula, connecting Godwin Battery in the north to Spurn Fort, and although the lines were taken up after World War 2, traces of buildings connected with the railway still survive. An important feature in the Kilnsea area is a concrete sound mirror (EA164), now an SAM, which was designed late in the war to provide advanced warning of oncoming Zeppelins. The parabolic shape reflected sound waves into a microphone.

The hexagonal Bull Sands Fort (EA306), with Haile Sands Fort on the Lincolnshire side, formed a major defensive asset in the Humber. These two concrete forts were built on steel platforms in the mouth of the estuary in 1915, and contained gun platforms, magazines, searchlights and garrison quarters. Large concrete blocks were dropped around the platforms to prevent tidal scour. Refurbished during World War 2, they remained in military use until 1956. South of the Humber, Royal Naval Reserve batteries had been constructed in Cleethorpes in the late 19th century, and remained in use until at least 1906–8 (CL69, 127), although it is unclear whether they were still manned at the time of World War 1.

Monuments associated with World War 2 are very numerous, and the gazetteers and parish discussion sections should be studied for individual details. Their distribution

serves to show how carefully considered the defence of the coastline was, with access points and areas of low cliff blocked or controlled by barbed wire fences, minefields, areas of anti-tank defences (concrete traps and ditches) and beach lights (intended to light the assault area in case of night attacks). These were intended to delay and break up assaults from the sea, while under fire from pillboxes and gun emplacements, and a small number of large coastal batteries. These were supported by earthwork infantry trenches and weapons pits.

Behind these first-row defences were further lines of pillboxes, trenches, gun emplacements etc, separated by areas of anti-glider defences and barbed wire to disrupt airborne troop landings. Concrete road and rail blocks would have caused further delays. Anti-aircraft batteries, supported by radar stations and searchlight installations, protected important targets, augmented later in the war by Operation Diver sites, designed particularly to counter the threat from German V1 rockets (doodlebugs). Visual observation posts for the Royal Observer Corps provided an additional early warning system. Alongside these installations were command posts, camps, shooting-, gunnery- and bombing-ranges, and decoys, representing poorly blacked-out towns and airfields. As already mentioned, there was a genuine airfield on the south bank at RAF North Cotes (NC14, 18, 19), which was constructed in 1916 and continued in use, with intervals until 1990; another airfield was sited just outside the study area near Donna Nook. Important installations such as these and towns like Bridlington, Hornsea and Cleethorpes, were of strategic importance and were well protected; also, on the landward side of Hornsea for example, was a ring of defences aimed at containing assaults from the town itself, should it fall to the Germans.

Many fortifications were temporary, although important at the time, including a rail-mounted target range at Bempton (BE6) and a live-firing range at Low Skirlington (AT2) for aircraft flying from RAF Catfoss. RAF Bempton consisted of two radar sites, BE10 and BE23, of which the former lies close to the cliff edge. Other radar stations (CHL or Chain Home Low) existed in Atwick (AT13–14) and Kilnsea (EA30). At Hollym, a High Frequency Direction Finding ('Huff Duff') radio station (HL20) would have been used from 1942 to locate enemy surface and submarine naval units by triangulation in combination with other shore- or sea-based HFDF equipment, and may have assisted in sea rescues by pinpointing vessels in distress.

'Operation Diver' AA batteries were located at several locations along the coast, including Flamborough Head (FL86), Ulrome (UL47), Skipsea (SK15), Atwick (AT41), Hornsea (HO10, 125), Mappleton (MA15, 31), Aldbrough (AL20, 41, 54), East Garton (EH9), Roos (RO26), Rimswell (RO20), Hollym (HL4), Holmpton (HM40), and Kilnsea (EA21, 171), although the majority of these sites have now been lost. An AA battery at Warren Head, Kilnsea (EA230) was converted into a Diver battery later in the war. Constructed around 1944, these Diver sites differed from standard AA batteries in that they consisted of four gun positions laid in a line rather than a semi-circle, to put up a wall of flak in the path of the fast-moving 'doodlebugs', aided by a 'predictor' computer. AA defence continued up the Humber towards Hull, with a battery sited, for example, in Welwick (WE3) and a searchlight installation in Skeffling (SE7).

Substantial coastal batteries included examples at Ringbrough (AL52), which had three emplacements, and Grimsby (GG43), while the Green and Light Temporary Batteries, Spurn, and Godwin Batteries were refurbished and rearmed, with additional AA defences.

There was an elaborate and extensive, but short-lived, decoy airfield at Out Leys, Skipsea (SK42), intended to confuse bombers heading for RAF Catfoss, a little further inland. There are bomb craters in the area, and it is recorded as having being attacked five times by April 1941. A 'Starfish' (SF) decoy at Mill Hill, Aldbrough (AL56) was intended to mimic a poorly blacked-out Hull and Hull Docks at night. These sites were also able to represent the effects of incendiary bombing attacks through the use of burning fuel and explosives. There may also have been a decoy near Cleethorpes (CL136) and there was a 'Starfish' decoy located in Humberston (HU7), both sited to divert bombers from Grimsby.

There are several post-war military sites in the study area, including RAF Bempton, which continued as a radar site until the late 20th century, and post-war ROC nuclear monitoring bunkers, some of them converted from existing observation posts or pillboxes with the addition of a pre-cast 'Orlit' post. These include examples from Flamborough (FL91), Skipsea (SK14), Aldbrough (AL38), Roos (RO46, 55), Holmpton (HM10, 11/16), Easington (EA43, 180), Cleethorpes (CL138), Humberston (HU4, 9); the underground command bunker at Skipsea is a SAM. RAF Holmpton (HM57) was used as an integrated command and control system for the direction of fighter interceptors as part of the 1950s ROTOR air defence scheme; this has public access and is being fully restored. The wartime AA battery at Warren Head, Kilnsea appears to have been reused as a ROTOR site post-war (EA228), and some ROC bunkers, including Cleethorpes, were also integrated into the ROTOR network. There was also an RAF practice range at Great and Little Cowden (MA53), which mainly survives, being only recently disused, and replacing a wartime tank gunnery range. RAF North Cotes was recommissioned in 1957 as a Bloodhound AA missile defence base, remaining in use until 1990.

Archaological potential

1 East Riding of Yorkshire

The coastal margin of the East Riding has clearly been exploited since the Palaeolithic period, and with increasing frequency and impact. The earliest hunter-gatherers left very little evidence for their activities, with the exception of occasional artefacts, but traces of Palaeolithic and Mesolithic hunting camps may well exist in the area. These are likely to manifest themselves in scatters of flintworking debris (flakes, cores and other debitage), but shell middens, hearths and the remains of temporary structures may also be present. Anthropogenic organic remains from both periods may be preserved in early deposits associated with the numerous former meres and marsh areas spread along the Holderness coast.

There is better and more widespread evidence for Neolithic occupation. Occupation sites, flint artefacts and evidence for a flint industry are present in the Bempton/Flamborough/Sewerby area, but there also many artefacts as far south as Easington, where an excavated occupation site also survived beneath a Bronze Age barrow on the eroding beach. There is also a large ditched enclosure of Neolithic or Bronze Age date in Barmston. Once again, significant preserved organic remains may survive in the vicinity of sites such as Sand le Mere and Withow Mere, but also, perhaps at Withernsea, where remains of the former mere may be present beneath part of the town. The presence of sites on or near the beach, some of them actively eroding, suggests that certain areas should be targeted for monitoring, particularly following

storms. Further occupation sites associated with the flint industry, but also subsisting on fishing, are likely to remain undiscovered in the Flamborough/Sewerby area. The cliff edge between South Landing and Sewerby appears to have been particularly popular, probably because it was more sheltered than the northern part of the headland, and had better access to the beach, with its exposed flint deposits.

The presence of a number of Bronze Age barrows from Bempton to Easington indicates the importance of the area, and there are a small number of known occupation sites, some of them early, representing a transition from the previous period, others later, such as sites at Barmston and Skipsea Withow, again indicating a transitional period. The exploitation of the local meres was still clearly important, and there is potential for the discovery of further structures and deposits related to these areas. These may include logboats, such as the pair found near Withernsea in the 18th century, or planked boats, like the example found in 1996 near Kilnsea, (athough the assignation of the logboats to the Bronze Age could be incorrect, any new finds of similar type would be of considerable significance).

The three possible barrows identified near the cliff edge on Watermill Grounds, Barmston, other barrows and a henge on the beach at Easington, reflect the fragility of the archaeological resource. Those features at Easington were exposed following a storm, and it is encouraging that sites can survive on the eroding foreshore in areas where the modern cliff is low and has been largely buried by beach sand and shingle, as so much has between Easington and Kilnsea. Areas like these should clearly be monitored on a regular basis. The barrows at Barmston, however, stand on a higher part of the coast and are unlikely to survive to be recorded in plan unless dealt with quickly; at least one may already have been lost since it was photographed.

Evidence for the Iron Age is generally in the form of features identified by aerial photography, and these are difficult to identify and date without excavation. Structures are hard to date from form alone, and there must be a suspicion that many features assigned to the later Iron Age/Romano-British period, or which are simply described as ‘prehistoric’, are actually of the early and middle Iron Age periods. Square barrows are, of course, distinctive and broadly datable to the 6th to 1st century BC, perhaps with larger examples in the earlier period generally giving way to smaller barrows. A least sixteen monuments of this class have been identified across the study area, principally by aerial photography, although these are not at imminent risk from coastal erosion. The discovery of a number of Corieltauvian staters and other late Iron Age coins indicates trade, particularly with Lincolnshire, and this must have continued into the Roman period before the actual crossing of the Humber. Settlements in the south of the study area can be expected to have had the earliest contact with the Romans both pre- and post-invasion, although the distinction between ‘contact’ settlements and post AD 71 sites would be difficult to identify archaeologically, unless distinctive early Roman artefact forms (such as coins and brooches) were identified. The ‘crossover’ period is also relatively short, and not apparently reflected in great and immediate changes to rural settlements, although of course the imposition of a new pattern of roads, military sites, and Romanised sites such as Hayton and Brough do consititute significant developments. Too few occupation sites have been identified to constitute a large enough sample to be specific; an apparent ironworking site in Atwick village reflects local industry, perhaps using bog iron from a nearby marsh.

The Anglo-Saxon/early medieval period is not well represented, although this is not unusual. The early part of the period relies heavily on the discovery of burial sites, including individual burials, and the area does have two significant cemeteries, at Sewerby and Hornsea Hydro. The settlements associated with these have not been found; the Hornsea site may have been lost to erosion, although there is a possibility that structural evidence will emerge in the future. There is no indication that there are any monuments of this period at risk from coastal erosion, and the project has been able to add little to the existing knowledge of the period. However, the incidental discovery of a large enclosure in the northern part of Flamborough village by the aerial photography team has added a potentially significant monument to the database. This enigmatic structure could belong to almost any period of human activity from the Roman invasion onwards, and would certainly repay investigation before the last stretches of possible ditch are covered by housing developments. If it proved to be a defensive site belonging to the Anglian or Anglo-Scandinavian period, the earthworks would be of national significance.

For the medieval and post-medieval periods, the principal classes of monument represented cover a broadly similar range: churches, village sites, moated sites, large houses. Of these, the loss of documented villages between the 14th and early 19th centuries has been severe. The remains of sites which still cling to the clifftop such as the Cowdens and Auburn are likely to be lost completely within the next half century, while a small number of populated villages such as Mappleton are now at risk. There is also the chance that undocumented settlements (or settlements where documented names have not been attached because of problems with identification) and small moated sites may be lost: there are possible moats at Ringbrough and north of Withernsea, for example, and what appears to be a small settlement near the cliff at Low Farm, Aldbrough. The historic sites of Wilsthorpe and Hilderthorpe are protected to a degree by sea defences, although both are 'frozen' in a form where parts are variously preserved in the form of earthworks, or as ploughed-out cropmarks/archaeological features, covered by housing developments, or lost to erosion prior to stabilisation.

Whilst there is little chance that any of the villages or monuments already lost on the North Sea coast have left any traces, other than displaced brick or stonework, those on the Humber shore, such as Pensthorpe, the sites of Burstall Priory and Burstall Garth, may survive in some form beneath the present mudflats. This will depend on how rapidly they were eroded by shifts in the navigable channel, or whether they were covered in estuarine mud or shingle by rising tides. The survival of Bronze Age and Neolithic features on the shore near Kilnsea show that this can happen, even in such an aggressive environment.

The period is significant in that for the first time maritime monuments potentially survive, including the remains of a pier at South Landing, Flamborough, and any remains of the medieval harbour of Bridlington, particularly where they have been encased in later structures. Bridlington harbour is likely to be the subject of further alterations, although the most recent major change involved the reclamation of part of the inner harbour near Clough Hole, which would have had the effect of preserving any remains of (for example) the medieval South Pier. Most of the medieval harbour installations fall within the remit of the planning system, but potentially there are significant surviving structures and deposits in and around the harbour basin. In the case of Flamborough, the former pier – if correctly identified – lies within the interidal zone. Although Johnson investigated the site in the 1980s (Johnson 1988), Burleigh's chart of c 1560 suggests that there may

be a western pier as well. Timber piles may remain beneath the stonework, and would potentially be datable, although the rock-cut wave platform is likely to have provided a sufficiently stable base for timber supports to be unnecessary.

South of Bridlington, it is unlikely that any of the piers formerly sited near places like Hornsea Beck, and possiblty Aldbrough and Mappleton, have left any traces, at least in the intertidal zone. Even structures constructed in the first half of the 19th century, such as coastguard and lifeboat stations, have a poor survival rate in Holderness.

The modern period, as has been stressed previously, is dominated by World War 2 monuments, with a few also surviving from the Great War and post-war periods. Although many have already been lost, demolished or are at imminent risk, the area still reflects the coastal defensive strategy for the region as developed by the War Office. There is, however, a need to monitor constantly the condition of monuments, and also perhaps to carry out ground survey of sites identified as part of the NMP project which were previously unrecognised, or did not otherwise form part of recent surveys of the area by the Fortress Studies Group.

Surveys of some monuments have already been published, including the batteries at Ringbrough, Godwin and Spurn Point (Dorman 1990), and the Spurn railway (Hartley & Frost 1988), and there has been much recent work, now available on the internet, on such sites as RAF Holmpton (www.rafholmpton.co.uk/1.html) and RAF Bempton www.subbrit.org.uk/rsg/sites/b/bempton/tour/index.html) but there is as yet (to the author's knowledge) no synthetic work covering the defences as a whole. This survey has shown the potential for such work, and has provided considerable new information in the form of accurate plots made directly from photographs taken when many of the monuments were still new.

2 North-East Lincolnshire

From the evidence outlined above it can be seen that many parts of the coastal margin along the North East Lincolnshire coast has seen a low level of exploitation, certainly in comparison with the East Riding, although this is largely due to the differeing nature of the two areas: one eroding, one accreting. In prehistory activity probably focussed on the coastal fringe with the use of the salt marshes for hunter gathering and/or grazing coupled with the possible use of the foreshore for fishing whilst the settlements were located a short distance inland either to avoid flooding or because the shoreline was further inland than it is today.

Later in the historic periods this pattern of use seems to have continue but on a gradually escalating scale with the continuation of settlements on the slightly higher inland locations (eg Grimsby and Old Clee) and the establishment of new ones along the coast (eg.Oole and Itterby) at some stage during the medieval period. This basic use of the coastal fringe can be seen to continue into the post-medieval period in both documentary sources (eg maps) and as the remains of the field systems, windmills, watermills etc. around the various settlements. This slow development with occasional peaks seems to be linked to a combination of poor, clayey soils and the general remoteness of the area from available markets.

The main development of the area occurs in the 19th century with the rapid and massive expansion of Grimsby and Cleethorpes in relation to the fishing industry and improved

rail links to inland markets. This development leads not only to large-scale reclamation of some areas of foreshore but to the covering of and probably loss of earlier archaeological evidence. One area where this may not have happen so comprehensively is along the foreshore and in areas of reclamation by dumping over existing landscape. Here the potential for survival of coastal fringe activities is good with the remains of fish weirs and salterns attested to it in the terms of physical remains. In addition to this the nature of the location of the study area at the mouth of the River Humber with the numerous and extensive sand banks means that even before the large increase in traffic associated with 19th-century Grimsby there will have been a steady number of losses of vessels using the river as a trade route to the hinterland of the rivers Ouse and Trent as well as to Kingston upon Hull and the many small inlets serving the scattered communities of the banks of the Humber further inland. The potential for this to stretch back to at least the Bronze Age can be seen with the recovery of the remains of five vessels from North Ferriby further upstream (Wright 1990).

The area which seems currently to be the least attested to is the potential for drowned prehistoric landscapes relating to the periodic inundations of the southern North Sea since the end of the last Ice Age. The presence of pre Bronze Age peat beds exposed on the beach at Cleethorpes points to a potential for further, more extensive landscapes to be preserved along this coastline.

With a potentially low-lying, eroding coastline there is a potential for continued erosion of earlier inter tidal features which may include prehistoric drowned landscapes, fish weirs (any date), remains of ship wrecks (any date), a beach launched fishing industry (probably medieval onwards) and salt extraction (any date) all of which will probably have a high level of organic preservation. In addition to this the erosion would also expose and remove terrestrial sites unrelated to the coastal activity such as farmsteads.

North East Lincolnshire Council is a Maritime Authority and as such has responsibility for Coastal Protection under the Coast protection Act 1949 to provide and maintain coastal defences to prevent erosion of the shoreline. In exercise of those powers the Council maintains some 4km of coastal defence between the Leisure centre and the Terminal Groyne at the end of the North Promenade at Cleethorpes, and the earth bank and revetment that fronts the Humberston Fitties Chalet Park. The defences include timber and rock groynes as well as the sea walls. These structures are inspected twice a year to monitor their condition and the results are reported back to the Environment Agency and the results are used to update the National Flood and Coastal Defence Database (www.nelincs.gov.uk/environment/coastaldefence.htm).

Information on the age and condition of the coastal defences are summarised on the councils web site (www.nelincs.gov.uk/environment/coastaldefence.htm) and show that where the date of construction is known most of the features date from 1900 to 1904. There have been later additions in the 1960s, 1980s and most recently 2000–2. The majority of the structures are groynes along with a number of sea walls, slipways, aprons and gabions. The age of these structures means that there is a potential for the need for repair and possibly re-alignment which could have an impact on buried archaeological features relating to the earlier peat beds and salt marshes.

Currently the protection for larger parts of the coastline within the study area is high in the areas around Grimsby and Cleethorpes and there is little threat to the erosion of large parts of the land mass, however, the continued maintenance and realignment of

defence structures may threaten buried remains, as could foreshore and commercial development.

3 Lincolnshire

As can be seen from the descriptions and discussion above much of the study area of the various parishes has been largely reclaimed since the end of the medieval period which means that there is a relatively low potential for archaeological remains for before that period. However, this said there is the possibility of the survival of material relating to the various land surfaces which have been recorded and reported upon along several parts of this coastline, most notably the submerged forest at Mablethorpe and Sutton on Sea to the south. Though historically (1796) its presence has been recorded as running for about 19km between Grimsby and Skegness (Tann 2004, 17). Any material relating to this would be more deeply buried but potentially well preserved by the covering of fine sediments and not eroded and dissected as the peat beds are seen in other areas (eg Cleethorpes beach and Hartlepool Bay).

In terms of more recent history and archaeology the form and nature of the process of reclamation from the late medieval onwards can be seen from several strands of evidence. In terms of the documentary sources it can be seen in both the cartographic records from OS and other maps along with the first recording of various place names. The physical evidence in support of this can be seen in the remains of various sea banks and drainage systems. In addition to the visible remains work at other locations has shown that a wide range of information, particularly environmental, can be obtained from the buried features associated with the relic banks.

Although the coastal margin has primarily been used for agricultural purposes the widespread and important development of the salt industry from the medieval period onwards in Lincolnshire can be seen in the extensive remains of saltern mounds which occur across several parishes. The location of the various salterns not only locates the industry but potentially adds much information to the development of the coastline through time as salterns tend to be located just above the high water mark. Therefore if it were possible to date the various salterns then the shape of the coastline at that time could also be inferred (see Grady 1998, 81-95 for details).

An important aspect of the salt production industry would be the transportation of the finished product to a suitable market. With the remote nature of the Lincolnshire coastline in relation to land routes makes the use of the various drainage dikes and inshore waters an obvious choice for transportation. The remains of this system can be seen both in the various place names such as the Havens at Tetney, Grainthorpe and Somercoates along with the physical remains of canalised channels across the sand flats, establishing of locks and sluices and even the development of a canal. This system of communication would not only have served the salt industry but also allowed the movement of agricultural produce as well.

Further evidence for inshore and offshore coastal trade can be seen both in the number of recorded wrecks of small vessels along the coast but in the large numbers of documentary records of losses as well. Although the documentary accounts all refer to post-medieval losses there is a potential for earlier wrecks relating to earlier coastlines and the activities along them.

The predominant use of the landscape within the study area has been for agricultural production and as such this leaves a relatively subtle range of archaeological sites beyond the establishment of field systems. Possibly the commonest agricultural use of the land was for different types of grazing on the various marshes and pastures. The evolution and extent of this activity can potentially be seen across the whole of the Lincolnshire and North East Lincolnshire study areas though it has perhaps been best recorded in the part of Lincolnshire to the south of this study (see Tann, 2004 for details).

Lastly parts of the coastline were important during the various conflicts of the 20th century with the establishing of RAF bases along with their defensive infrastructure, much of which still survives in the modern landscape.

The brief site reconnaissance confirmed what is intuitively known in that sites will cover and uncover depending upon the patterns of the weather, coastal currents etc. What it also demonstrated was that although there are many different types of site recorded even a brief visit to the foreshore can reveal both new sites and possible site types but also can quickly establish the condition of existing ones in order to provide site management information.

5.2 Recommendations

Although the nature of development within the study area means that archaeological work undertaken through the normal planning process will necessarily be piecemeal, the local SMR/HER provides a continually-updated area-wide deposit model based on the results of the evaluations as they are completed. This would potentially allow the identification of key sites as part of the impact assessment process by providing a predictive tool using MapInfo GIS-based system.

In addition to the additional information gained through standard channels, however, the rate of erosion and coastal change means that it is imperative that investigative work is undertaken outside the planning process. Any impact of coastal erosion (or coastal development) upon buried features can only be mitigated if the full potential for the range of different site types is known and an idea of their current status is ascertained. To this end it is recommended that the following steps are considered in order to establish a base line of information from which to proceed. The recommendations form a hierarchy of investigation as it is recognised that it would be impractical to investigate every potential site to its full extent; also, preservation *in situ* will hardly ever be an option, unless a site is considered to be of such importance as to outweigh the expense of protection.

Level 1 Investigations

- Detailed fieldwalking and recording along the whole coastal margin of the study areas.

These investigations would allow for the simple written description of the sites encountered along with sketch plans and photographs. Due to the remote nature of some parts of the study area site locations would be recorded by the use of hand-held GPS.

Based on the fieldwalking study above those areas of highest potential and/or threat would be selected for more detailed study. To this end the methods outlined below are suggested.

Level 2 Investigations

- Topographic survey of earthworks;
- Borehole transects to establish levels of buried soils;
- Trial trenching or test pit excavation;
- Documentary research.

The particular methodology employed would be determined by the nature and significance of the identified site. Once the work was completed and the results considered in relation to any threats posed then a full investigation could be considered.

Level 3 Investigations

- Full excavation;
- Publication of results of excavation and documentary research.

The following sections provide suggestions for targeted fieldwork; this is not exhaustive at this stage, and more detail will be provided in an updated project design, which will follow on from thie assessment.

East Riding of Yorkshire

Summary of general issues

While Flamborough Head is relatively resistant to erosion, chemical and mechanical erosion are slowly attacking the cliffs, and period falls also occur where the rock face is weakened by undermining and cracking. Holderness between Barmston and Spurn is being aggressively eroded at a currently-accelerating rate, and is unlikely to reach stasis. The Humber coastline is mainly subject to accretion, although changes in the direction of the navigable channel occur frequently (a current move is destroying Read's Island, further upstream, for example). The final breaching of Spurn may also have an impact on the mudflats to the rear. Organic remains survive on the Holderness foreshore, particularly around the sites of former meres, and there is a potential for recovering evidence for past landscapes and early occupation, although this is fast being lost to desiccation and erosion.

Specific site investigations

The following more specific areas should be targeted in addition to the general approaches outlined above.

Bempton parish

- Site visit to check the condition of the north end of Buckden Dyke (BE4);
- Site visit to check the state of the clifftop (ROTOR) site at RAF Bempton (BE23).

Flamborough parish

- Site visit to check the beach and clifftop between Danes Dyke and South Landing for artefacts related to the early flint industry and signs of eroding settlement features;
- Site visit to examine and record the remains of the possible medieval harbour at South Landing (FL161), in particular to locate a second, western, pier;
- Site visit to Briel Nook (FL21) to determine the condition of the excavated promontory fort;
- Site visit to Gull Nook to search for evidence relating to three enclosures near the cliff edge (FL2–4);
- Site and fieldwork investigation of the large enclosure at the north end of Flamborough village (FL47).

Bridlington parish

- Site visit to foreshore and clifftop between Danes Dyke and Sewerby to check for artefacts related to the flint industry and later settlement sites.

Carnaby parish

- Site visit to beach and clifftop in the vicinity of an eroding area of Romano-British features (CA6);
- Site visit to examine whether there are traces of eroding elements of Wilsthorpe DMV (CA15).

Barmston parish

- Site visit to examine the area of three possible Bronze Age burial mounds (BA80) at least one of which may be actively eroding, or has already been lost;
- Examination of the area around the mouth or Earl's Dike for signs of a possible Bronze Age/Iron Age settlement (BA166) and organic deposits/?former mere;
- Examination of the cliff for signs of eroding late Iron Age/Romano-British cropmark complexes (BA70, 79, 85, 113);
- Site visit to examine the eroding area of Auburn DMV (BA17) for exposed features.

Ulrome parish

- Site visit to cliff to examine further evidence for eroding Iron Age/Romano-British features, or further exposures of twin ditches/pits UL41 and ditches UL33, UL10.

Skipsea parish

- Site visit to area of Withow Mere (SK19), which is actively eroding. Collection of organic material for possible radiocarbon dating, and the identification and collection of artefacts/ecofacts, recording of possible structural features.

Atwick parish

- Site visit to examine cliff in vicinity of previous finds (AT20)

Hornsea parish

- A site visit to the beach would only be helpful at times when the sand is absent, to determine whether any traces of a mere and related deposits remain;
- Site visit to the cliff north of the town for traces of a settlement related to Anglian bone comb find HO17.

Mappleton parish

- Site visit to Rolston Cliff to examine area near possible Romano-British cropmarks (MA5);
- Site visit to areas of Great and Little Cowden DMVs to establish condition and examine any features revealed.

Aldbrough parish

- Site visit to the cliff in the area of the coastguard station where Roman coins and pottery have been found (AL13);
- Site visits to the medieval earthwork sites on the cliff at Thorpe Garth (AL51), Grange Farm (AL44) and Low Farm (AL40);
- Site visit to Ringbrough to ascertain the survival of the former battery site (AL52), one of several important World War 2 sites probably lost in the parish.

East Garton

- Site visit to ascertain the current condition of the medieval/early post-medieval fishponds (EG13).

Roos parish

- Site visit to foreshore and cliff around the Tunstall Drain outfall at Sand le Mere to check for exposures of organic deposits and/or structures related to the mere (RO93). Samples should be collected for potential radiocarbon dating.

Rimswell parish

- Site visit to the foreshore in the north near Sand le Mere (see above);
- Site visit to the area of Waxholme for sings of eroding medieval settlement (RM31).

Withernsea parish

- Site visit to foreshore in Owthorne/North Withernsea area to identify traces related to a former mere (WT36) or Noah's Wood (WT30), which may include evidence for occupation as early as the Palaeolithic, to at least the Bronze Age;
- Examination of the area of a possible small moat or close on the cliff edge near Owthorne (WT6).

Hollym parish

- Site visit to examine the cliff for signs of possible Romano-British settlement in the Neville's Farm area.

Holmpton parish

- Site visit to establish the current condition of post-war ROC post HM11 at Out Newton, formerly proposed for scheduling.

Easington parish

- Site visit to the area of the Neolithic occupation site (EA119), Late Neolithic/Early Bronze Age henge (EA104) and barrows (EA105/117) to determine any signs of further monuments;
- Site visit to the area of the probable Late Bronze Age/Early Iron Age settlement on Easington Cliff (EA59);

- Site visit to the possible Bronze Age barrow site (EA49) north of Easington Gas Terminal to determine the threat to the area from erosion;
- Site visit to the area of possible Bronze Age barrows (EA218) and cremation cemetery (EA236) which lie in an eroding landscape;
- Site visit to a Romano-British settlement site at Easington Cliff (EA96);
- Site visit to a possibly lost medieval enclosure north of Easington (EA46);
- Site visit to Godwin Battery area to monitor the current condition of the monument and related structures;
- Site visit to 'Spurn Fort' area to monitor the current condition of the various monuments.

Skeffling parish

- Site visit to the foreshore, particularly the area of enclosure SE12 and the 17th-century flood defences (SE16) to determine whether there is any current erosion, which may threaten the scheduled grange at Winsetts (SE17);
- Site visit to determine whether earlier features may survive beneath foreshore deposits, such as Burstall Priory (SE11).

Welwick parish

- Site visit to determine whether there is any active erosion, and the potential for the survival of earlier features beneath the foreshore, such as Pensthorpe DMV (WE4).

If possible, geophysical survey and trial trenching should be undertaken where sites are demonstrably at imminent risk, or where their future management may be affected by development or coastal protection considerations. Regular monitoring of the cliff and foreshore should also be carried out to maintain an updated conditions record.

North East Lincolnshire & Lincolnshire

Summary of general issues

Although the coastal margin along this section of coastline is generally currently accreting there is always a potential for cycles of erosion to re-commence at some point in the future. In addition to the potential for erosion there is also a range of issues relating to the preservation of buried organic archaeological remains which would be threatened by any lowering of the water table as a result of improved drainage. Conversely the re-wetting of areas, particularly with salt water, as part of managed retreat or wetland creation schemes will also impact on the buried archaeological resource.

Specific site investigations

In tandem with the above generic investigations the following specific areas should be considered as the first part of any field validation prior to any generic investigations in order to better inform those investigations.

Grimsby Parish

- Site visits to assess the potential for the remains of the 19th-century boatyards;
- Site visits to assess the age and significance of the wrecks around the port.

Cleethorpes Parish

- Site visits to assess the potential of the remains of the various fish weirs;
- Site visits to assess the age and significance of the wrecks along the foreshore;
- Sampling of the peat beds along the foreshore along with their analysis: carbon dating should be undertaken;

Humberston Parish

- Site visits to assess the potential of the foreshore for unrecorded features (potentially further fish weirs and peat beds);

Tetney Parish

- Site visits to assess the potential of the foreshore for unrecorded features (potentially ship wrecks, fish weirs and peat beds);
- Site visits to assess the age and significance of the wrecks along the foreshore;
- Soil core transects should be taken to determine the presence or otherwise of palaeo-environmental material;
- Topographic/field survey of the remains of the saltern mounds;
- Trial excavation of selected features of the saltern industry;
- Geophysical survey of the area of the potential medieval haven, now inland;
- Trial excavation of any significant features identified by the geophysical survey;
- Trial excavation across the sea banks to determine age and manner of construction;

North Cotes Parish

- Site visits to assess the potential of the foreshore for unrecorded features (potentially ship wrecks, fish weirs and peat beds);
- Site visits to assess the age and significance of the wrecks along the foreshore;
- Soil core transects should be taken to determine the presence or otherwise of palaeo-environmental material;
- Site visits to assess the potential for unique military features within and around RAF North Cotes;
- Recording of any unique military features within and around RAF North Cotes;

Marshchapel/Grainthorpe Parishes

- Site visits to assess the potential of the foreshore for unrecorded features (potentially ship wrecks, fish weirs and peat beds);
- Site visits to assess the age and significance of the wrecks along the foreshore;
- Soil core transects should be taken to determine the presence or otherwise of palaeo-environmental material;
- Trial excavation across the sea banks to determine age and manner of construction;
- Geophysical survey of the area of the potential medieval haven, now inland;
- Trial excavation of any significant features identified by the geophysical survey;

North Somercoates Parish

- Site visits to assess the potential of the foreshore for unrecorded features (potentially ship wrecks, fish weirs and peat beds);
- Site visits to assess the age and significance of the wrecks along the foreshore;

- Soil core transects should be taken to determine the presence or otherwise of palaeo-environmental material;
- Trial excavation across the sea banks to determine age and manner of construction;
- Geophysical survey of the area of the potential medieval haven, now inland;
- Trial excavation of any significant features identified by the geophysical survey;

For all of the parishes regular monitoring of the foreshore for material exposed by tidal/storm action should be undertaken.

ACKNOWLEDGEMENTS

The parish maps and data plotting for this project were the work of David Atkinson, with other illustrations and cover by Mike Frankland. Dave also did an enormous amount of work arranging data transfer and reformatting, particularly with relation to production of the gazetteers. The photographs used in the report were taken by Dave Atkinson, John Buglass, Dave Rawson and Ken Steedman. The aerial photographic analysis was carried out under the able supervision of Alison Deegan, who also greatly assisted with problems of data transfer far beyond her initial remit. The API team consisted of Cinzia Bacilieri and Heather Adams: this volume represents only a fraction of the amount of work they produced between them. The bulk of the text is the work of Trevor Brigham and Richard George (East Riding) and John Buglass (Lincolnshire and North East Lincolnshire).

The authors wish to express thanks to the staff of the National Monuments Record office, Swindon, for providing copies of records, in particular Graham Deacon. A debt is also owed to the staff of the principal local authority record offices: Elizabeth Chamberlin and Ruth Atkinson (Humber Sites & Monuments Record), Sarah Grundy & Mark Bennett (Lincolnshire HER), Hugh Winfield (North East Lincolnshire HER). The provision of digital mapbases for the project was kindly arranged by Katherine Shier (English Heritage).

Encouragement and advice was provided by Peter Murphy and Dave Hooley (English Heritage) and Phil Catherall (Environment Agency). Much useful information and advice on the Withernsea–Gibraltar Point Seascapes Pilot project was also freely given by Dick Malt and Jo Lyon (MoLAS). The aerial photographic team and authors benefited from the advice and assistance of Roger Thomas (English Heritage).

Lastly, a considerable debt is owed to the English Heritage Project Officer, Marcus Jecock for his advice and patience throughout the course of the project.

The authors apologise unreservedly to anyone missed from this list; any mistakes or omissions remain the principal responsibility of Trevor Brigham (Project Manager), who undertook the final edits and collation.

BIBLIOGRAPHY

Allen, A. (ed.), 1995
Museums and maritime archaeology: dealing with maritime finds, North of England Museum Service.

Allison, K.J., 1998
The East Riding of Yorkshire Landscape, Howden.

Ambler, R.W., 1990
The Historical Development of Grimsby in Ellis S and Crowther DR (eds).

Anson, P.F., 1944
British Sea Fishermen, William Collins, London.

Ashmore, P., & Dawson, T., 2002
A Strategy for Scotland's Coasts and Inshore Waters, Scottish Coastal Forum Cultural Heritage and Archaeology Task Group (September 2002).

Bannerman, N., & Jones, C. 1999
Fish-Traps Types: A Component of the Maritime Cultural Landscape. International Journal of Nautical Archaeology 28, No 1, Nautical Archaeology Society, London.

Bewley, R.H. (ed), 1998
Lincolnshire's Archaeology from the Air, Occasional Papers in Lincs Hist and Archaeol 11, The Society for Lincolnshire History and Archaeology, Lincoln.

de Boer, G., 1988
History of the Humber Coastline, in Jones NV ed. 1988.

Boyes, J., & Russell, R., 1977
The Canals of Eastern England.

Boyle, J.R., 1889
The lost towns of the Humber, Hull.

Boylan, P.J. 1967
'The Pleistocene Mammalia of the Sewerby-Hessle buried cliff, East Yorkshire', *Proc Yorks Geol Soc* 36, 115–25.

Brigham, T., 2001
Archaeological Desk-Based Assessment on Land at Amtree Park, Filey, North Yorkshire, Humber Archaeol Rep 76.

British Geological Survey, 1985
Flamborough and Bridlington Map Sheet 55/65, Solid and Drift Edition, 1:50,000 series, Ordnance Survey.

Buglass, J., 1994
Lost at Sea: Maritime Archaeology of the North-East of England, unpublished rep to the Cleveland County Archaeology Section.

Buglass, J., 1997
The remains of six sailing ships and other archaeological features in the intertidal zone between Sutton-on-Sea and Mablethorpe, Lincolnshire, level III rep for Lincolnshire County Council.

Buglass, J., 1999
Ships' Timbers from Church Street Car Park, Whitby, North Yorkshire (CSW98), contractors report to Northern Archaeological Associates.

Buglass, J., 2002
Cleethorpes Shipwreck, unpublished client report.

Buglass, J., 2005
The Archaeological and Historical Background to Filey Bay and its Environs, Filey, North Yorkshire, Desk-based assessment for The Filey Bay Initiative.

Bulmer, T. & Co.,1892
Bulmer's Topography, History, and Directory (Private & Commercial) of East Yorkshire, Ashton on Ribble.

Butlin, R.A. (ed), 2004
Historical Atlas of North Yorkshire, Otley.

Catt, J.A., 1990
'Geology and Relief', in Ellis S & Crowther D.R. (eds).

Catt, J.A., & Penny, L.F., 1966
'The Pleistocene Deposits of Holderness', *ProcYorks Geol Soc* 35, 377–420.

Chamberlin, E., & Evans, D.H., 2000
The Yorkshire Marina, Bridlington: Assessment of Archaeological Potential, Humber SMR Rep DB2000/02.

Coles, B.J., 1998
Doggerland: a speculative survey. *Proceedings of the Prehistoric Society* 64, 45-81.

Coles, B.J., 1999
'Doggerland's loss and the Neolithic', in B. Coles, J. Coles & M. Schon Jorgensen (eds) *Bog Bodies, Sacred Sites and Wetland Archaeology*, 51–7, WARP Occasional Paper 12, Exeter.

Coles, B.J., 2000
'Doggerland: the cultural dynamics of a shifting coastline',. in K. Pye & S.R.L. Allen (eds) *Coastal and Estuarine Environments: Sedimentology, Geomorphology and Geoarchaeology*, 393–401, Geological Soc Special Pub 175, The Geological Society, London.

Crofts, W.H., 1906
'Notes on the indication of a Raised Beach at Hessle', *Trans Hull Geol Soc* 5, 58–64.

David Tyldesley & Associates, 2003
The rollback of caravan and holiday home parks from the eroding East Yorkshire coastline, DTA Rep 1455 for East Riding of Yorkshire Council

Department for Culture, Media and Sport, 2004
Protecting our Marine Historic Environment: Making the System Work Better (March 2004).

Dinnin, M., & Lillie, M., 1995a
'The palaeoenvironmental survey of the meres of Holderness', in van de Noort & Ellis (eds), 49–85.

Dinnin, M., & Lillie, M., 1995b
'The palaeoenvironmental survey of southern Holderness and evidence for sea-level change', in van de Noort & Ellis (eds), 87–120.

Dorman, J.E., 1990
Guardians of the Humber. The Humber Defences 1856–1956, Humberside Heritage Publication 16, Hull.

East Riding of Yorkshire Council, 2002
Towards a Sustainable Coast. The East Riding Integrated Coastal Management Plan (June 2002).

East Riding of Yorkshire Council, 2004
Cliff Erosion Monitoring from Sewerby to Kilnsea: Data Tables, ERYC.

Ellis, S., 1990
'Soils', in Ellis, S., & Crowther, D.R. (eds).

Ellis, S., & Crowther, D.R. (eds), 1990
Humber Perspectives. A Region Through the Ages, Hull University Press, Hull.

English Heritage, 1991
Management of Archaeological Projects, London.

English Heritage, 1999
Towards a policy for Marine Archaeology: an English Heritage and RCHME discussion paper, consultation draft (March 1999), London.

English Heritage, 2001
Commissioned Archaeology Programme Guidance for Applicants, Release 1.1 (December 2001), London.

English Heritage, 2005a
England's Historic Seascapes, Scarborough to Hartlepool Pilot Area: A brief to extend the application of Historic Landscape Characterisation to England's inter-tidal and marine zones and adjacent UK continental shelf.

English Heritage, 2005b
England's Historic Seascapes, Withernsea to Skegness & Adjacent Marine Zone Pilot Area: A brief to extend the application of Historic Landscape Characterisation to England's inter-tidal and marine zones and adjacent UK continental shelf.

English Heritage, 2006a
A Brief for English Heritage: Rapid Coastal Zone Assessment Surveys, ver 8 (April 2006).

English Heritage, 2006b
Guidance Note: Participating in the Shoreline Management Planning Process.

English Heritage & RCHME, 1996
England's coastal heritage: a statement on the management of coastal archaeology (March 1996), London.

English Heritage & RCHME, 1999
A Brief for Rapid Coastal Zone Assessment Surveys, Release 2 (February 1999), London.

English Nature, 2005
Identification of biodiversity and geological conservation opportunities in three coastal Natural Areas: Tyne to Tees, Saltburn to Bridlington and Bridlington to Skegness, English Nature Res Rep 639.

Environment Agency, 2000
Planning For The Rising Tides. The Humber Estuary Shoreline Management Plan (September 2000).

Evans, D.H., 2000
Proposal for a Maritime Archaeology Record for the Yorkshire Coast and Humber Estuary, draft proposal, Humber Archaeology Partnership.

Faull, M.L., & Stinson, M., 1986
Domesday Book. Yorkshire (Part One), Chichester.

Faull, M.L., & Stinson, M., 1986
Domesday Book. Yorkshire (Part Two), Chichester.

Flamborough Headland Heritage Coast Project, 1996
Flamborough Headland Heritage Coast: Management Strategy, March 1996. [Draft replacement management strategy issued October 2002].

Fleming, N.C., 2004 *Submarine Prehistoric Archaeology of the North Sea. Research Priorities in Collaboration with Industry*, CBA Res Rep 141, CBA & EH.

Fulford, M., Champion, T. & Long, A., 1997
England's Coastal Heritage: a survey for English Heritage and the RCHME, English Heritage Archaeol Rep 15, London.

Gilbertson, D.D., 1984
Late Quaternary Environments and Man in Holderness, BAR Brit Ser 134.

Godbold, S., & Turner, R.C., 1993 *Second Severn Crossing. Phase 1 – The Intertial Zone in Wales*, CADW.

Good, G.L., Jones, R.H., & Ponsford, M.W., 1991
Waterfront Archaeology. CBA Res Rep 74, CBA, London.

Grady, D.M., 1998
Medieval and Post-Medieval Salt Extraction in North-East Lincolnshire, in Bewley, R.H. (ed).

Green, G., 1999
'Plain Sailing': a review of the Maritime Archaeology of the Cleveland Coast, Tees Archaeology, Hartlepool.

Halcrow, 2003
Futurecoast, Defra, London.

Hall, N., 2002
Spurn Peninsula, Easington: Assessment of Archaeological Potential, Humber Archaeology Rep 110.

Harrison, S., 2000
Flamborough Headland Heritage Coast: A desk-based archaeological and historical assessment.

Hartley, K.E., & Frost, H.M., 1988 edn *The Spurn Head Railway*, South Holderness Countryside Society, Patrington.

HEMS, 1997
Humber Estuary Management Strategy, Wakefield.

HMSO, 2002a
National Heritage Act 2002.

HMSO, 2002b
The Protection of Wrecks (Designation) Order 2002, Statutory Instrument 2002 No, 1858.

H R Wallingford, 2002
Southern North Sea Sediment Transport Study. Phase 2, Sediment Transport Rep EX 4526 (August 2002).

Hoskins, W.G., 1981
The Making of the English Landscape, Hodder & Stoughton Ltd, London.

House of Commons, 1998
Select Committee on Agriculture Sixth Report. Appendix 35: Memorandum submitted by the Crown Estate (F56), The United Kingdom Parliament, London.

Jelgersma, S. (1979)
'Sea-level changes in the North Sea basin', in Oele, E., Schuttenhelm, R.T.E., & Wiggers, A.J. (eds) *The Quaternary History of the North Sea*, Acta Universitatis Upsaliensis: Symposium Universitatis Upsaliensis Annum Quingentesimum Celebrantis 2, 233–48.

Johns, C., Herring, P., & Tapper, B.P., 2005
English Historic Seascapes. Scarborough to Hartlepool Pilot Area, Cornwall County Council Historic Environment Service, Project Design.

Johnson, M., 1988
'A medieval harbour at Flamborough', *YAJ* 60, 105–11.

Jones, N.V., (ed), 1988 *A Dynamic Estuary: Man, Nature and the Humber*. Hull University Press, Hull.

King, P., & Pulfrey, S., 1991 *Grimsby Trawlers. The Final Years of the Side Trawler*. Hutton Press Ltd, Beverley.

Knowles, G.C., 1990 *The Humber and its People during the Medieval Period*, in Ellis, S., & Crowther, D.R, (eds).

Jackson, G., 1983
The History and Archaeology of Ports, London.

Lamplugh. G.W. 1898
'Report on the Buried Cliff at Sewerby near Bridlington', *Proc Yorks Geol Soc* 9, *381–92.*

Lee, M., & Pethick, J., 2003
'The Coast', in Butlin (ed), 17–20.

Loughlin, N., & Miller, K.R., 1979 *A Survey of Archaeological Sites in Humberside*, Humberside Libraries and Amenities, Hull.

Malt, R., 2006
England's Historic Seascapes. Withernsea to Skegness & adjacent marine zone pilot area, Updated Project Design version 2.

Mannering, J., 1997 *Inshore Craft. Traditional Working Vessels of the British Isles*, Chatham, London.

March, E.J., 2005 *Inshore Craft of Britain in the days of sail and oar*, Chatham, London.

McAvoy, F., 1993
'Excavation at the Withow Gap, Skipsea (Holderness)', in 1st Annual Rep Humber Wetlands Survey, Hull.

Mckee, E., 1983 *Working Boats of Britain*, Conway, London.

Mills, A.D., 1998 *Dictionary of English Place-names*, Oxford University Press, Oxford.

Miller, I (ed), 2002
Steeped in History. The Alum Industry of North-East Yorkshire, North York Moors National Park Authority.

Murphy, P., & Trow, S., 2002
'Coastal Defence. Caring for our coastal heritage, *EH Conservation Bulletin* 42, 46–7 (March 2002).

Neal, J.W., 1988
'The Geology of the Humber Area', in Jones, N.V. (ed).

Neave, D., 2000
Port, Resort and Market Town. A History of Bridlington, Otley.

Neave, D., & Neave, S., 2000
Bridlington. An Introduction to its History and Buildings, Otley.

Paynton, C., Roskams, S., & Whyman, M., forthcoming, Yorkshire Archaeological Research Framework, English Heritage/YARF.

Posford Duvivier, 1998
Humber Estuary Coastal Authorities Group, Shoreline Management Plan (SMP): Sub Cell 2a/2b (April 1998), Peterborough.

Poulson, G. 1840
History and Antiquities of the Seigniory of Holderness.

Pringle, A.W., 2003
Classic Landforms of the Coast of the East Riding of Yorkshire, Geographical Association, Sheffield.

RCHME, 1996
The National Maritime Inventory of Maritime Archaeology for England, Swindon.

Room, A., 2003
The Penguin Dictionary of British Place Names, London.

Salisbury, C.R., 1991
'Primitive British Fishweirs', in Good, G.L., Jones, R.H. & Ponsford, M.W.

Scarborough Borough Council, 1997
Shoreline Management Plan Historic Environment Baseline Study.

Selkirk, A., 2006
'A tale in three parts concerning a barrow, a long-house, and a henge', *Current Archaeol* 202, 526–31.

Sheppard, T., 1912
The lost towns of the Yorkshire coast, Hull.

Soil Survey of England & Wales, 1983
Soils of England and Wales. Sheet 1 Northern England, Harpenden.

Spurn Heritage Coast Project, 1996
Spurn Heritage Coast: Management Strategy, March 1996. [Draft replacement Management Strategy issued October 2002].

Starkey, D.J., Reid, C., & Ashcroft, N., (eds), 2000
England's Sea Fisheries, The Commercial Sea Fisheries of England and Wales since 1300, Chatham, London.

Stoertz, C., 1997
Ancient Landscapes of the Yorkshire Wolds, RCHME, Swindon.

Tann, G., 2004
Lincolnshire Coastal Grazing Marsh. Archaeological and Historical Data Collection, Lindsey Archaeol Services Rep 770.

Thomas, J.C.R., 2003
'Monitoring military sites on the Yorkshire coast', in English Heritage, *Conservation Bulletin* 44, 12–14.

Trow, S., 1996
'Conserving England's fragile coastal heritage', *English Heritage Conservation Bulletin* 30, 8–9 (November 1996).

Tunstall, J., 1962
The Fishermen, MacGibbon & Kee, London.

Van de Noort, R., & Davies, P., 1993
Wetland Heritage: an archaeological assessment of the Humber Wetlands, Humber Wetlands Project, University of Hull.

Van de Noort, R., & Ellis, S. (eds), 1995
Wetland Heritage of Holderness: an archaeological survey, Humber Wetlands Project, University of Hull.

WAERC, 2001
Humber Estuary Shoreline Management Plan Historic Environment Baseline Study.

Wenban-Smith, F.F. 2002
Palaeolithic and Mesolithic Archaeology on the Sea-bed: Marine Aggregate dredging and the Historic Environment, Wessex Archaeology, Salisbury.

Wessex Archaeology, 2005
England's Historic Seascapes Method Statement: Marine GIS-Based Methodology (Working Draft).

Wise, P.J., 1990
'The Archaeology of the Grimsby-Cleethorpes Area', in Ellis, S., & Crowther, D.R. (eds).

Wright, E., 1990
The Ferriby Boats. Seacraft of the Bronze Age, Routledge, London.

Young, R., 2001a
The Comprehensive Guide to Shipwrecks of the North East Coast, Volume One: 1740–1917, Stroud.

Young, R., 2001b
The Comprehensive Guide to Shipwrecks of the North East Coast, Volume Two: 1918–2000, Stroud.

Young, R., 2003a
The Comprehensive Guide to Shipwrecks of the East Coast, Volume One: 1766–1917, Stroud.

Young, R., 2003b
The Comprehensive Guide to Shipwrecks of the East Coast, Volume Two: 1918–2000, Stroud.

Principal Maps and Charts

c. 1560 A Plotte made for the description of the River of Humber and of the Sea and Seacoast from Hull to Scarborough in the Reigne of Queene Elizabeth (the 'Burleigh Chart').

1577 Map of Yorkshire, Christopher Saxton.

1610 Map of Yorkshire, John Speed.

1610 Map of North and East Ridings of Yorkshire, John Speed.

1638 Map of Yorkshire, Jan Jansson (Valk & Schenk edn, 1683)

1644 'The Quartermaster's Map', Wenceslaus Hollar.

1664 Map of the East Riding, Joan Blaeu.

1673 A Map of Ye East Rideing of Yorkshire with its Wapontacks, Richard Blome.

1685 The East Riding of Yorkshire, Robert Morden.

1767 An Accurate Map of the County of York, Emanuel Bowen.

1775 Map of Tetney and North Cotes Havens, April 1775 for Charles Anderson Deham Esq, Ed. Johnson.

1787 Yorkshire, East Riding, John Cary.

1836 Map of the Sea Bank and Part of the Out Marsh in the Parish of North Sumercotes, FC Talbot surveyor.

1860 Part of the Tithe Map of Grainthorpe 1845.

1899 Plan of Tetney and North Cotes land held by Clare College (coloured in OS map)

1824 Ordnance Survey (1:10560)

1855 Ordnance Survey (1:10560)

1889/91 Ordnance Survey (1:10560)

Web Sites

www.hull.ac.uk/coastalobs/index.html

www.rafholmpton.co.uk/9.html

www.homepage.ntlworld.com/david.enefer/lincs/lclr.htm

www.lincsbap.org/habitates/actionplan

www.raf-lincolnshire.info/northcoates/northcoates.htm

www.eastriding.gov.uk/environment/sustainability/pdf/integrated_coast_zone_management.pdf

www.lincolnshire.gov.uk

www.nelincs.gov.uk

www.nelincs.gov.uk/environment/coastaldefence.htm

www.english-heritage.org.uk/server/show/conWebDoc.4177

www.english-heritage.org.uk/server/show/nav.001002005007004