

The North West Rapid Coastal Zone Assessment (NWRCA) Phase 2

Executive Summary Document



Piel Castle, Piel Island, Cumbria

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1. Summary statement

1.1 Between April 2011 and August 2012 Archaeological Research Services Ltd carried out Phase 2 of the Rapid Coastal Zone Assessment for North West England. The project was undertaken for English Heritage with the project data fed back into the Historic Environment Records (HERs) of the various local authority partners. These included Cheshire West and Chester Borough Council; National Museums Liverpool, Merseyside HER (now closed); Lancashire County Council; Cumbria County Council and The Lake District National Park Authority. The primary aim of the NWRCZA project was to identify heritage assets along the coast and assess the level of threat that they currently face with a view to identifying priority sites and proposing strategies for their future management. This field survey element of the project follows a desk-based assessment and aerial photography transcription survey undertaken as Phase 1 of the project (Bacilieri 2009; Johnson 2011).

1.2 The project area encompassed a strip of land between the lowest astronomical tide level (LAT) to 1km in-land from the Mean High Water Springs (MHWS). The study area ran from the Anglo-Welsh border in the south to the Anglo-Scottish border in the north, a length of approximately 700km that falls within the SMP2 for North Wales and North West England (Halcrow 2011). The aerial photograph coverage for 1601km² (125 part OS 1:10,000 quarter sheets) was examined as part of Phase 1 of the project and this exercise added 1163 new records to the National Monuments Record (NMR) while 203 existing records were enhanced. This data was supplemented by reference to the Historic Environment Records maintained by the local authorities of Cheshire, Merseyside, Lancashire, Cumbria and the Lake District National Park.

1.3 The project brief specifically required that the assessment be undertaken with reference to Defra's Shoreline Management Plans (SMPs). As a result, the assessment of threats along this coastline has been undertaken in relation to SMP2 criteria. The SMPs make policy recommendations for the following 100 years under three main categories; 'Hold the Line', 'Managed Realignment' or 'No Active Intervention'. The former case involves various mitigation strategies, such as the construction of sea defences, whilst in the latter case nature is allowed to take its course. Under a Managed Realignment scenario, nature is generally allowed to take its course up to a certain point when active management will be instigated, such as the construction of sea defences. Heritage assets may be considered to be under threat from both the mitigation strategies and from coastal erosion where no action is to be taken.

1.4 Phase 2 of the NWRCZA project focused on a rapid survey of all extant archaeological features visible at fifty targeted sites and areas identified as being under threat by the Phase 1 assessment and through consultation with local authority archaeologists and other project partners. The project also aimed to survey and sample inter-tidal peat deposits at an additional ten locations. During the course of the project, further at risk sites and inter-tidal peat deposits were added to the survey as new threatened areas were identified, or when information on threatened sites was provided by project partners and local people. The results of the survey and sampling can now be utilised to enhance the existing HER and NMR record and provide a useful tool to feed back into the Shoreline Management Plans, better informing the management of the archaeology of the coastal margin in the future. The results and outputs of the NWRCZA project can be used to support new actions and projects that help local

communities better engage with their coastal heritage and conserve and record heritage assets at risk.

1.5 A summary of the locations targeted in the Phase 2 survey is shown in Table 1.1 which also provides the assessment of risk from the Phase 1 project. The inter-tidal peat deposits targeted for survey and sampling are shown in Table 1.2.

County	Site name	SMP 2 policy at this site	Significance	Risk
CH	Neston Old Quay	NAI	Medium	High
CH	Bombing Decoy-Burton Marsh	NAI	Medium	High
CH	Wireless Telegraphy Station/Control Building-Burton Marsh	NAI	Medium	Medium
ME	Hilbre Island lithic sites and midden	HTL	High	High
ME	St Hildeburgh's Chapel, Hilbre Island	HTL	High	High
ME	Dungeon Lane Saltworks	NAI	High	High
ME	Formby Point Mesolithic and Neolithic footprints	MR	High	High
LA	Target Ribble Estuary for shoreline walkover	HTL with NAI at Warton and MR at Hesketh	Medium	Medium
LA	Target Pilling shoreline for evidence of saltworking	HTL	Medium	Medium
LA	Sambo's Grave, Sunderland Point	MR	Medium	Medium
LA	Cockersand Abbey (rapid field visit only)	HTL then MR	High	High
LA	Heysham Head early medieval graves and chapel and Mesolithic lithic scatters	NAI and HTL	High	Medium
LA	Warton – area between railway line and Crag Foot for walkover	NAI	Medium	High
LA	Jenny Browns Point, Silverdale. Copper smelting site to also include WWII target to south to Walduck's Bank to west. Look at coastal stretch from Arnside Moss to Jenny Browns Point	NAI	Medium	High
LA	Post-Medieval fish weirs	Intertidal	Medium	High
CU	Aldingham Motte-and-Bailey	NAI	High	High
CU	Aldingham Medieval Fish traps	Intertidal	Medium	High
CU	Greenodd, Ulverston and Baycliff quays	NAI	Medium	Unknown
CU	Piel Castle	NAI	High	High
CU	WWI and WWII Hilpsford battery, Walney	NAI	Medium	High
CU	WWI Practice trenches, Walney	NAI	Medium	Medium
CU	WWI and WWII Battery H3, Walney	NAI	Medium	High
CU	Trough Head lithic scatter	NAI	Medium	High
CU	Cow Leys Lane lithic scatter	NAI	Medium	High
CU	North End Midden Mesolithic flint scatters	NAI	Medium	High
CU	North End Haws Neolithic flint scatter	NAI	Medium	Medium
CU	Sandscale Haws medieval bloomery	NAI	Medium	High
CU	Roanhead Neolithic structure	NAI	Medium	Medium
CU	Millom – known to be salt mounds but not currently mapped	NAI	Medium	High
LDNPA	Eskmeals Neolithic flint scatter	NAI	Medium	High

LDNPA	Bronze Age lithic scatter at Eskmeals	NAI	Medium	High
LDNPA	St John's Church, River Esk	NAI	Medium /High	High
LDNPA	Ravenglass Roman Fort (Only rapid site visit necessary and incorporation of existing survey data – assess west side of fort against existing plan for evidence of erosion). Consult also aerial survey.	NAI	High	High
LDNPA	Burnt Mound, Drigg	NAI	Low	High
LDNPA	Drigg Roman bloomeries	NAI	Medium	High
CU	Post-Medieval saltworks, River Irt	NAI	Medium	High
CU	St Bee's medieval fish traps	Intertidal	Medium	High
CU	Fish traps at Mawbray		Medium	High
CU	Saltom Bay colliery	HTL to NAI in 50 years	High	High
CU	Barrowmouth alabaster and gypsum mine (<i>Saltom?</i>)	NAI	High	High
CU	Swarthy Hill hillfort	MR	High	High
CU	Roman milefortlet 20B (<i>Swarthy Hill</i>)	MR	High	High
CU	Roman milefortlet 15 (<i>Beckfoot</i>)	MR	High	High
CU	Beckfoot Roman cemetery	MR	High	High
CU	Roman Roads at Bowness, Beckfoot and Maryport	MR	Medium	Medium/High
CU	Salt sites on Solway Coast and Crosscannonby	MR	Medium	Medium/High
CU	Medieval Port, Skinburness	NAI	Medium	High
CU	Roman temporary camp at Knockcross (<i>Bowness</i>)	MR	Medium	High
CU	Rockcliffe Castle	MR	Medium /High	Medium
-	Opportunistic recording of any shipwreck sites – particularly off Sefton and south Lancs coast. Areas could include: Glasson, Lune Estuary, Wyre Estuary		Medium	Medium

Table 1.1 List of archaeological sites or areas targeted as part of the Phase 2 survey

Coastal Peat Database ID	Grid reference	Location	Description in database
-	-	Wallasey, Merseyside	Sue Stalibrass pers comm.
Not entered	SD 305 744	Bardsea, Cumbria	Foreshore peat deposit
225	SD 414 620	Heysham, Lancashire	Peat deposit - though not visible at surface
252	SD 430 645	Morecambe, Lancashire	Peat horizon - though not visible at surface
496	SD 321 483	Fleetwood, Lancashire	Submerged forest - though not visible at surface
-	SD 3102 4331	Cleveleys, Lancashire	Peter Isles pers. comm.
-	SD 07944 90922	Bootle / Eskmeals, Cumbria	Submerged Forest - Andy Howard pers comm.
611	NY 244 613	Glasson, Cumbria	Submerged forest
646	NY 08521 49769	Beckfoot, Cumbria	Forest soil, peat and organic fragments
-	SD 18456 69476	Walney Island, Cumbria	Sue Stalibrass pers comm.

Table 1.2 List of inter-tidal peat and 'submerged forest' sites targeted as part of the Phase 2 Survey.

1.6 All the above locations were identified as being in urgent need of a field visit and rapid survey to assess the condition of the surviving remains, and the extent to which these remains are exposed to on-going erosion (Johnson 2011). Any surviving remains that were then identified and recorded by the field survey were assessed in terms of significance and threat and this assessment has been used to put forward a register, or 'priority list', of threatened sites together with options for the future management of the most vulnerable sites (Eadie 2012). This prioritisation has been arrived at based on an objective methodology, although the judgement involved in scoring each site is inevitably, to some extent, subjective. However, it provides a sound basis for informing future discussion and priorities that will lead to the necessary actions being taken to manage and record these eroding heritage assets.

1.7 The main project report contains the results of the field survey and palaeo-environmental sampling at each of the targeted locations (Eadie 2012). The project has delivered the following outputs:

- Updated Phase 1 report and Executive Summary document in light of the SMP2
- Enhancement of five local authority HERs
- A project GIS that contains surveys and records of threatened sites and inter-tidal peats
- Phase 2 project report
- A standalone Phase 2 Executive Summary (this document)
- Recovery of eroded artefacts from the Scheduled Monuments of Cockersand Abbey and Ravenglass Roman Fort.
- Talks to local societies (e.g. Morecambe Bay Partnership; ArtGene Design Café)
- An A4 fold-out leaflet
- Dedicated webpages at <http://www.archaeologicalresearchservices.com/projects/nwrcza>
- Assisted ArtGene in the development of a funding application for a Heritage Lottery Fund 'Your Heritage' grant for First and Second World War archaeology on the North of Walney Island.
- Built relationships and awareness of archaeological heritage at risk of erosion with the Morecambe Bay Partnership and the Solway Area of Outstanding Natural Beauty (AONB).

1.8 The Phase 2 project identified and surveyed 248 features and added 164 new records to the HERs of Cheshire West and Chester, Merseyside, Lancashire, Cumbria and the Lake District National Park. Any repetition of existing or known sites within the HER provided enhancement to the current record due to the current condition statement provided as part of the survey. A total of seven inter-tidal and coastal peat beds were mapped and sampled for palynological analysis and radiocarbon dating as part of the Phase 2 survey and the radiocarbon dating programme has identified peat sites that are significantly earlier than previously dated sites. This has provided a record spanning from the Windermere Interstitial, through the Mesolithic Period and into the Neolithic. The results of this analysis will be fed into English Heritage's national Inter-tidal and Coastal Peat Database.

1.9 Each site was investigated and surveyed to Level 2 standard (Ainsworth *et al* 2007) utilising mapping grade Global Positioning System (GPS) equipment, with

extensive digital and paper records maintained, along with extensive site photography. A digital photograph archive of 1614 jpg images was amassed during the project, giving detailed information on the current condition of the site and features recorded as part of the survey.

1.10 Around one third of sites recorded at these locations dated to the post-medieval period providing evidence for the industrialisation of the North West coast and its use for the production and transport of raw materials and products, both within the region and nationally/internationally. A further third of the sites recorded related to the defence of the coastline during the First and Second World Wars. Pillboxes, gun emplacements, bombing decoys, anti-tank defences, and bombing range markers were all observed and recorded. A great number of these sites had been known previously and recognised on wartime aerial photography; however some sites were new discoveries, such as the military camp behind the dunes at Drigg identified by local archaeologist Clifford Jones. The level of survival of earthwork military remains, such as trenches and weapons pits, as well as remains of minefields, was particularly notable. The temporary nature of these structures make the large number identified during the fieldwork surprising and potentially important, particularly where they are found in notable concentrations, such as on Walney Island, in the Drigg dunes and on Grune Point, Skinburness. These remains, although common, are some of the most at risk of erosion under current shoreline management policies.

1.11 The remaining sites recorded were perhaps more significant due to their fewer numbers, age and level of preservation. They included prehistoric settlement sites, prehistoric human footprints, Iron Age hillforts, Roman roads and milefortlets, a Roman cemetery and medieval castles, churches and fish traps. The majority of these sites were already included in the various local authority HERs, however many records have been significantly enhanced during Phase 2 as this has provided accurate location data and up-to-date condition statements which were lacking at many sites. All sites now have accurate positional information to within 0.5m. Results from the Phase 2 survey also suggest that sites that had been previously identified and thought to have disappeared are still extant in some form. The most significant example of this is the Roman Milefortlet 15 at Beckfoot where earthwork remains mapped as part of Phase 2 may be the remnants of this site thought to have been lost to erosion in the 1980s (Bellhouse 1989, 47-8).

1.12 All recorded sites now have an assessment of the level of threat that they face from coastal erosion, coastal erosion mitigation strategies and any other natural or man made threats to the site as observed during the Phase 2 survey. This includes metal detecting, land slips, footpath erosion, vegetative growth, lichen growth and the damaging effects of freeze/thaw. This information will form a useful tool for land management and planners, as well as informing future Shoreline Management Plans so that they take into account the management of high risk archaeological assets. Specific site by site recommendations on heritage asset management can now be made using the NWRCZA survey in association with the SMP2 (Halcrow 2011) and the National Coastal Erosion Risk Mapping data (NCERM 2012). However, the Phase 2 survey has revealed that some of the predicted levels of coastal erosion contained in the NCERM data are inadequate considering the levels of erosion seen in recent years, together with observed changes during the course of the Phase 2 project. For example, at Ravenglass NCERM predict a loss of only 3.4m-6.6m in the following 100 years when local knowledge testifies to a loss of c.10m in the past 30 years and where eroding Roman pottery sherds and building materials were collected during the Phase 2 survey. Similarly the NCERM

predictions state a uniform rate of 0m of erosion within areas that are under a 'Hold the Line' policy for the following 100years (NCERM 2012). This relies on shoreline defences being 100% effective and efficient over a 100 year period and this is considered unrealistic by the project team. In some cases the loss of even 1m of archaeologically sensitive ground would be a significant loss of information and potential. The current predictions of shoreline evolution can only be used as a rough guide as to what will happen in the future.

1.13 The Phase 2 survey has prioritised the sites recorded based on 5 key criteria; threat, condition, significance, potential and rarity. This produced a ranked list, or register, of sites. The threatened sites considered to be at 'imminent risk' were then further assessed and potential management strategies proposed for each, and these are discussed further in Section 2 (see below). This assessment does not provide definitive answers for management, but clear proposals have been made in order to provide a basis for future discussion of the management of coastal heritage assets.

1.14 The NWRCZA study has established that many heritage assets in the coastal zone are under threat from rising sea level and/or the mitigation strategies proposed. The threat is particularly acute in the cases of those sites currently situated between LAT and within 200m inland of MHWS. Many of these sites specifically relate to the Coastal/Maritime Landscape, such as port and harbour facilities, fish traps, shipwrecks and the military defence of the coast, but also includes features of the terrestrial landscape which happen to be close to the coast and span all periods from the prehistoric to the Second World War. This includes such sites as the prehistoric lithic scatters and possible settlement sites on Walney Island and Drigg, the Roman cemetery and Milefortlet 15 at Beckfoot, the Roman fort at Ravenglass, the medieval motte and bailey castle at Aldingham, Piel Castle on Piel Island, the post-medieval Alabaster and Gypsum Mine at Barrowmouth, England's first undersea mine at Saltom Pit and the Second World War coastal batteries on Walney Island. It is also the case that important inter-tidal peat deposits and old ground surfaces below coastal dunes are particularly vulnerable, such as the eroding silts and muds on the South of Walney Island containing hoofprints and faunal remains and at Formby and Crosby that contain preserved prehistoric human footprints.

1.15 In carrying out the assessment it has been noted that a number of categories of asset are as yet poorly understood making an evaluation of the threat difficult. Examples include the development of small harbours/jetties and wharfs, the fishing industry, early land reclamation (Jecock 2011b) and the recreational use of the 'sea side'. It has also been noted that while at a national level over 3% of sites recorded in HERs have a measure of statutory protection this falls below 2% in the coastal zone, a discrepancy borne out by the fact that it is difficult to protect these remains from erosion and so their designation becomes futile. This does not, however, mean that they are not worthy of protection and this discrepancy needs to be addressed.

2 Assessment of threat to heritage assets

2.1 This section deals with coastal heritage management issues, in light of the results of the NWRCZA Phase 1 and Phase 2 projects, and the significance of the sites identified. The assessment of site significance and prioritisation is inevitably partly subjective and is based on the professional judgement of ARS Ltd staff in consultation with other stakeholders, although it is based on the results of consistent and objective survey. The prioritisation of sites for archaeological intervention and recording, as outlined below is intended to provide a starting point for discussion and consideration of how best to manage sites and target resources. Given that the coastline is such a dynamic environment the condition of sites will change, as will knowledge of certain types of sites, and as a consequence the list of prioritised sites should also be revised in the light of such changes. Consequently, the priority list should be considered a 'live' document that will change subject to further discussion across the curatorial sector and in the light of physical changes on the coastline. It is, therefore, not intended as a definitive statement but rather an aid to discussion and subsequent decision making and actions.

2.2 Prioritised list of archaeological sites and palaeoenvironmental sites have been produced and is displayed in Tables 2.1 and 2.2. The top quartile of each table showing the most significant sites under threat are discussed in further detail in Sections 7.2 and 7.4 of the main project report (Eadie 2012).

2.3 The assessment of each of the prioritised sites was based on five criteria. These are: threat from erosion, condition, significance, potential for further investigation and rarity. These terms are discussed in more detail below. The threat from erosion has been scored out of 20 to ensure that it carries necessary weight in the assessment, whilst each of the remaining criteria has been scored out of ten. This provides a balanced view where 30 points out of the total 60 are available for threat and condition and a further 30 points are available for significance, potential and rarity. The assessment used principles set out in DCMS guidance for Scheduled Monuments (formerly Annexe 4 of PPG 16) <http://www.culture.gov.uk/images/publications/ScheduledMonuments.pdf> and reflects the professional opinion of the ARS Ltd project team. The scoring is based upon data collected during the NWRCZA project including that from the desk-based assessment, aerial photograph transcription, field survey and consideration of current and future sea level models and predictions of coastal erosion. In the majority of cases the archaeological features recorded have been assessed individually, however, where appropriate, features have been assessed as a group. For example, the remains of medieval saltworking sites in Skinburness Marsh have been assessed as a group, but were considered separately to the remains of post-medieval saltworking sites at the same location.

The potential for some of the recorded sites to be proposed for consideration for designation has also been reviewed. This is not scored but stated as 'Yes/No/Already designated/Investigation required' within the table. The attribution given for these sites remains the opinion of the NWRCZA project team and not the current position of English Heritage.

The scoring of the various criteria gives a total out of 60. The table lists sites in their rank order with the site considered to be at most threat and of greatest significance ranked number 1. All sites listed in the table are of significance and face some risk from erosion, and a low ranking does not mean that the site is of low significance. The Phase 2 survey

was targeted on sites of significance and potentially at risk of erosion, and many hundreds of known features, assessed during NWRCZA Phase 1, were excluded from the Phase 2 survey as they were not considered to be at risk in the short or medium term. Therefore, all sites included within the listing have some form of future threat potential and are considered to have notable significance.

The criteria for assessing each site are detailed below.

2.3.1 Threat

This comprises the perceived level of threat to the site from coastal erosion or other ongoing erosion. It includes consideration of land use and the potential for the site to be removed artificially. A highly threatened site undergoing erosion would score 18-20 while a site located in a stable location with little threat from erosion over the next 100 years would score 2-4. This assessment made use of Halcrow's predictions of future shoreline evolution contained within the SMP2 (Halcrow 2011), as well as the National Coastal Erosion Risk Mapping predictions of coastal erosion under current management (NCERM 2012). NCERM mapping was used in conjunction with the project GIS to assess the possible long term threat to each site. If the archaeological site was to be significantly damaged within 20 years using these predictions the site would score highly in the threat category, whereas if the shoreline projection indicated that it could survive for a further 100 years the score in the threat category would be lower.

2.3.2 Condition

This score is based on the current condition of the site in question; a site which is an exceptional example of its type which survives mostly intact would score highly, while a site that survives in fragmentary form, or is mostly destroyed, will have a low score. The context of a site was also considered in this assessment. An archaeological site removed from its original context by later development would score lower than a site which has survived in its original context. This means that a well-preserved military site surviving *in situ* would score higher than a ploughed out Second World War crop mark site.

2.3.3 Significance

Assessment of significance has been based on the professional judgement of the project team with reference to the known information value, status, or historical significance of a site. This has been guided with reference to the criteria set out in the DCMS guidance for Scheduled Monuments (formerly Annexe 4 of PPG 16)

<http://www.culture.gov.uk/images/publications/ScheduledMonuments.pdf>. A highly significant site will have rare archaeological features with considerable information potential and may contain components from multiple periods. A less significant site will typically comprise a single, more common archaeological feature.

2.3.4 Potential

This is the potential for the site to yield further knowledge or evidence which will make a significant contribution to our understanding. A site which survives intact, and is rare, may contribute more than a site that is already well known and has been extensively excavated. The score is an overall assessment of how beneficial further archaeological work would be to furthering understanding and contributing to place-making and public enjoyment/wellbeing.

2.3.5 Rarity

This is the assessment of how common the site type is, whilst also considering its degree of preservation and integrity. Here a standard pillbox which survives intact will score slightly lower as there are numerous examples surviving along the North West coast, however a Roman fort or a prehistoric monument, such as the footprint sites at Formby and Crosby, will score more highly as there are fewer examples.

2.3.6 Potential for Designation

Sites in highly threatened locations may be less likely to be considered, however significant they are. Very significant sites in stable locations are more likely to be put forward for consideration. Sites that are already designated are also highlighted. This assessment is not a direct proposal for designation but an indicator of what sites could usefully be considered for putting forward for designation, based on the opinion of the NWRCZA project team. It is important to note that even sites in extremely threatened positions may still be considered for proposal for future designation and this has been taken into consideration when putting forward the opinion of the project team.

2.4 Table 2.1 sets out the key heritage assets of significance within the study area displayed in ranked order of priority as evaluated by the project team. The sites have been divided into a hierarchy of colour-coded quartiles with red being those sites considered under 'imminent risk', orange being those considered to be under 'high risk', yellow being those considered at 'intermediate risk' and green being those sites at 'low risk'. Sites at 'imminent risk' are discussed individually in more detail within Section 7.2 of the main project report (Eadie 2012) with specific reference to the threats faced.

Sites considered to be at 'imminent risk' are those scoring 50 or higher in the assessment. Those sites that scored between 40 and 50 are considered to be at 'high risk'. Those scored between 30 and 40 are considered to be at 'intermediate risk' and those lower than 30 are considered to be at 'low risk'. Imminent risk is considered to be where there is an immediate or on-going threat to the surviving remains recorded on site and where there is also a clear need for further work. High risk is where the archaeological resource is threatened, but the threat may not be as immediate, the site only being threatened within the next 20 years under SMP2 and NCERM coastline predictions. Intermediate risk sites are threatened in the long term and will only be directly threatened within the 20 – 50 year SMP2 and NCERM coastline predictions. Low risk sites are those which will become threatened in the long term, the 50 – 100 year SMP2 and NCERM coastline predictions, or possibly not at all using current data. Within these quartiles, however, weight has been given to the significance of the site at risk, meaning that a site of very low significance at a high risk of erosion may actually be placed within the low risk quartile. For example the unidentified, poorly preserved, post-medieval shipwreck at Skinburness is undergoing active erosion, but is assessed as being of low significance and is therefore located in the 'low risk' quartile.

Position	Site Name	Site Type	NWRCA UID	Policy Unit	Policy	Threat	Condition	Significance	Potential	Rarity	Potential to Designate	Total
											Yes/No/Already Designated	/60
1	Crosby and Formby	Prehistoric footprints	149-150, 239	11a8.1 11a 9.1	HTL & MR	20	9	10	9	10	No	58
2	Beckfoot	Roman cemetery	100, 241	11e5.1	MR	20	9	9	8	9	Yes	56
3	Walney Island	Possible prehistoric faunal remains & palaeosol	-	11c14.3	NAI	20	9	8	9	10	No	56
4	Ravenglass	Roman fort	75	11d3.1	NAI	20	9	10	8	9	Already designated	56
5	Aldingham	Medieval motte and bailey	41	11c13.1	NAI	20	8	9	9	9	Already designated	55
6	Beckfoot	Roman Milefortlet 15	99, 103, 125	11e5.1	MR	20	7	9	9	8	Already designated, Investigation required	53
7	Jenny Brown's Point	Post-medieval copper smelting site, jetty and buildings	22, 158	11c7.5	NAI	20	6	8	8	9	Already designated / expand designation to include newly identified features?	51
8	Walney Island	Prehistoric flint scatters & poss. settlements	204, 60	11c14.8	NAI	20	6	8	9	8	Investigation required	51
9	Drigg	Possible Prehistoric burnt mounds	211, 213	11d4.1	NAI	20	7	8	8	7	No	50
10	Nethertown and St Bees	Medieval fish traps	138, 139	11d5.5 11d5.7	NAI & HTL	18	8	9	7	8	Yes	50
11	Duddon Estuary	Prehistoric occupation site	71	11c16.1	NAI	14	7	9	8	10	No	48

12	Hesketh Out Marsh	Prehistoric hoofprints	25	11b1.5	MR 0-20 years HTL 20-100 year	14	9	8	8	8	No	47
13	Barrowmouth	Post-medieval alabaster and gypsum mine	132-136	11e1.1	NAI	14	8	8	8	9	Already designated	47
14	Swarthy Hill	Iron Age hillfort	107	11e4.3	MR	15	5	9	8	10	Already designated	47
15	Stanlow	Stanlow medieval abbey	-	11a7.3	HTL	14	4	10	8	10	Already designated	46
16	Crosscanonby	Post-medieval saltworks	86	11e4.3	MR	16	8	8	7	7	Already designated	46
17	Cockersand	Cockersand medieval abbey	18	11c2.4	HTL 0-20 years HTL or MR 20-100 years	16	6	9	6	9	Already designated	46
18	Allonby	Post-medieval saltworks	142	11e4.3	MR	20	5	7	7	6	No	45
19	Skinburness	Medieval port and village	98	11e6.3	NAI	10	9	9	8	8	No	44
20	Mawbray	Medieval fish trap	120	11e5.1	MR	16	8	6	6	8	No	44
21	Sunderland Point	Post-medieval Sambo's grave	29	11c4.3	NAI	12	8	10	4	10	Yes	44
22	Glasson	Undated trackway	240	11e8.3	MR	20	4	6	7	6	Investigation required	43
23	Burgh Marsh	Possible Hadrian's Wall vallum	217	11e8.4	MR	6	9	10	9	8	Investigation required	42
24	Crosscanonby	Roman Road Maryport to Crosscanonby	-	11e4.3	MR	12	5	10	8	7	No	42

25	St Bees	Possible medieval fish trap	137	11d5.6	NAI	14	4	9	7	8	No	42
26	Morecambe	Post-medieval fish traps	160-163	11c6.2	HTL	16	5	7	9	5	No	42
27	Beckermest	Medieval St Bridget's Churches and cross shafts	233	11d5.5	NAI	6	7	10	9	10	Already designated	42
28	Maryport	Roman Milefortlet 23	188	11e4.2	HTL 0-20 years NAI 20-100 years	6	8	10	9	8	Already designated	41
29	Birkkrigg	Bronze Age stone circle	215	11c13.1	NAI	6	8	10	7	10	Already designated	41
30	Piel Island	Medieval Piel Castle	72	11c13.5	NAI	8	6	10	7	10	Already designated	41
31	Knockcross	Roman temporary camp	111	11e8.3	MR	8	5	10	9	9	Already designated	41
32	Drigg	Prehistoric flint scatters	210	11d4.1	NAI	12	6	8	8	7	No	41
33	Crosscanonby	Post-medieval saltworks	89, 143	11e4.3	MR	20	2	7	6	6	No	41
34	Warton Crag	Iron Age hillfort	164	11c7.4	NAI	6	7	9	9	9	Already designated	40
35	Saltom Bay	Post-medieval Saltom pit colliery	187	11e1.2	HTL 0-50 years NAI 50-100 years	10	8	9	6	7	Already designated	40
36	Walney Island	WW2 Hilpsford battery	65	11c14.3	NAI	18	7	5	5	5	No	40

37	Walney Island	WW2 H5 battery and camp	67-68	11c14.3		20	5	5	5	5	No	40
38	Knockcross	Possible Roman road	141	11e8.3		8	6	9	9	7	Investigation required	39
39	Heysham	Medieval St. Patrick's Chapel	21	11c6.1		8	7	10	4	10	Already designated	39
40	Bromborough	Medieval moated site	218	11a7.1		10	7	8	7	7	Already designated	39
41	Ravenglass	Possible cist	228	11d3.1		18	4	7	4	6	No	39
42	Ravenglass	Roman bath house	73	11d3.1		2	10	10	6	10	Already designated	38
43	Drigg	WW2 quadrant towers	79, 81	11d4.1		14	8	4	7	5	No	38
44	Port Carlisle	Post-medieval quayside	114	11e8.3		18	6	5	6	3	No	38
45	Skinburness	Post medieval jetty / fish trap	92	11e6.2		20	3	3	8	4	No	38
46	Skinburness	Roman Milefortlet 9	96	11e6.3		6	6	9	9	8	Already designated	38
47	Beckfoot	Possible Roman road	104	11e5.1		6	6	9	8	8	Investigation required	37
48	Newtown Arlosh	Post-medieval saltworks	168-173	11e7.4		6	8	7	8	7	No	36
49	Anthorn Marsh	Stone alignment	176	11e7.5		6	9	4	9	8	No	36
50	Dungeon Lane	Post-medieval saltworks	198	11a7.8		10	6	7	6	7	No	36

51	Cockersand	Post-medieval fish trap	166	11c2.4	HTL 0-20 years HTL or MR 20-100 years	14	3	5	9	5	No	36
52	Heysham	Post-medieval fish trap	221	11c6.1	NAI	14	3	5	9	5	No	36
53	Maryport	Roman road	186	11e4.2	HTL 0-20 years NAI 20-100 years	2	8	10	8	7	Already designated	35
54	Burgh Marsh	Possible medieval boundary bank	183	11e8.4	MR	6	9	7	6	7	Investigation required	35
55	Ravenglass	Post-medieval fish trap	78	11d3.1	NAI	18	5	4	5	3	No	35
56	Formby	Post-medieval shipwrecks	151-152	11a9.1	MR	20	6	3	3	3	No	35
57	Walney Island	Prehistoric hearth	203	11c14.8	NAI	2	7	7	10	8	No	34
58	Skinburness Marsh	Medieval saltworks	129, 184	11e7.2	HTL 0-20 years MR 20-50 years HTL 50-100 year	6	7	7	7	7	No	34
59	Anthorn Marsh	Medieval saltworks	174-175	11e7.5	MR	6	7	7	7	7	No	34
60	Skinburness Marsh	Post-medieval saltworks	130	11e7.2	HTL 0-20 years MR 20-50 years HTL 50-100 year	6	7	7	7	7	No	34

61	Border	Post-medieval saltworks	128	11e7.3	MR	6	7	7	7	7	No	34
62	Salt Coates	Post-medieval saltworks	167	11e7.4	MR	6	7	7	7	7	No	34
63	Heysham	Anglo-Saxon cross-shaft base and grave slabs	192	11c6.2	HTL	8	5	8	3	9	Already designated	33
64	Hest Bank	Post-medieval wharf	189	11c7.1	HTL 0-20 years HTL or MR 20-50 years HTL 50-100 year	16	5	4	5	3	No	33
65	Bardsea	Post-medieval jetties and breakwater	42-44	11c11.6	NAI	16	6	4	5	2	No	33
66	Braystones	Medieval motte	234	11d5.5	NAI	6	5	5	10	6	No	32
67	Swarthy Hill	Roman Milefortlet 21	87	11e4.3	MR	6	8	9	1	8	Already designated	32
68	Drigg	WW2 pillbox	83	11d4.1	NAI	14	8	3	6	1	No	32
69	Beckfoot	Roman Tower 15A	105	11e5.1	MR	6	5	9	4	7	Already designated	31
70	Formby	Lifeboat station	199	11a9.1	MR	20	1	5	1	4	No	31
71	Ribble Estuary	Medieval moated site	2	11b1.13	NAI	2	7	6	8	7	No	30
72	Bowness	Roman road	118	11e8.2	MR	2	5	9	7	7	Already designated	30
73	Grune Point	WW2 air gunners range	109	11e6.3	NAI	6	8	4	7	5	No	30
74	Dungeon Lane	Post-medieval Hale Cliff Wharf	148	11a7.8	NAI	14	6	4	4	2	No	30

75	Aldingham	Post-medieval Sea Wood copper mine	214	11c13.1	NAI	14	5	4	4	3	No	30
76	Waberthwaite	Medieval St. John's Church	77	11d3.1	NAI	2	4	7	9	7	Already designated	29
77	Waberthwaite	Anglo-Saxon cross-shaft	230	11d3.1	NAI	2	4	8	7	8	Already designated	29
78	Brighthouse	Possible prehistoric enclosure	223	11d3.1	NAI	2	3	6	10	8	Investigation required	29
79	Saltcoats	Possible Roman fortlet	232	11d3.3	NAI	2	2	5	10	10	Investigation required	29
80	Saltom Bay	Post-medieval Haig colliery	140	11e1.3	NAI	2	9	8	5	5	Already designated	29
81	Cleveleys	Abana post-medieval shipwreck	16	11b2.4	HTL	12	4	6	4	3	No	29
82	Drigg	20th century shipwreck	80	11d4.1	NAI	18	6	2	2	1	No	29
83	Brighthouse	Possible Roman harbour	225	11d3.1	NAI	2	2	6	10	8	Investigation required	28
84	Ribble Estuary	Post-medieval shipwrecks	7, 8	11b1.13	HTL 0-50 years MR 50-100 year	8	7	4	4	5	No	28
85	Burgh Marsh	Post-medieval saltworks	185	11e8.4	MR	6	5	6	5	6	No	28
86	Skinburness	Post-medieval shipwreck	106	11e6.2	HTL	20	3	1	2	2	No	28
87	Arnside	Medieval enclosure	33	11c8.1	NAI	4	4	6	7	6	No	27

88	Walney Island	WW2 firing range	52	11c14.8	NAI	4	8	3	6	6	No	27
89	Port Carlisle	Post-medieval canal	110	11e8.3	MR	6	7	5	6	3	No	27
90	Port Carlisle	Post-medieval saltworks	113	11e8.3	MR	6	4	6	6	5	No	27
91	Hilbre Island	Post-medieval lifeboat station	145	11a5.11	HTL	8	8	3	4	4	No	27
92	Ulverston	Post-medieval quayside	37	11c11.6	NAI	14	3	4	4	2	No	27
93	Walney Island	WW1 trenches	54-59	11c14.8	NAI	4	5	4	6	7	No	26
94	Hilbre Island	Prehistoric lithic sites and midden	-	11a5.11	HTL	6	2	6	6	6	No	26
95	Port Carlisle	Post-medieval railway platform	126	11e8.3	MR	6	6	5	6	3	No	26
96	Sunderland Point	WW2 pillboxes	26, 27	11c4.3	NAI	16	7	1	1	1	No	26
97	Drigg	Post-medieval enclosure	227	11d4.1	NAI	2	9	5	6	3	No	25
98	Burgh Marsh	WW2 anti-aircraft obstructions	179, 181	11e8.4	MR	6	7	3	2	7	No	25
99	Jenny Brown's Point	Post-medieval jetty / bridge	24	11c7.5	NAI	18	2	2	2	1	No	25
100	Millom	Medieval saltworks	85	11c16.9	HTL	2	6	5	7	4	No	24
101	Brownrigg	Roman tower 21B	90	11e4.3	MR	2	3	9	2	8	Already designated	24
102	Arnside	Medieval lynchets	32	11c8.1	NAI	4	7	5	4	4	No	24

103	Silverdale	Jack Scout post-medieval limekiln	30	11c7.5	NAI	2	9	5	4	3	No	23
104	Eskmeals	Prehistoric occupation site	216	11d2.2	MR	2	3	6	6	6	No	23
105	Beckfoot	WW2 bombing range markers	115-117	11e5.1	MR	6	8	5	2	2	No	23
106	Jenny Brown's Point	20th century slipway	23	11c7.5	NAI	18	2	1	1	1	No	23
107	Crosscanonby	Post-medieval bank	91	11e4.3	MR	18	2	1	1	1	No	23
108	Cockersand	WW2 observation post	17	11c2.4	HTL 0-20 years HTL or MR 20-100 years	8	8	2	2	2	No	22
109	Arnside	Post-medieval jetty	40	11c8.4	HTL	14	2	3	1	2	No	22
110	Brighthouse	Possible medieval pit	231	11d3.1	NAI	14	2	3	1	2	No	22
111	Drigg	WW2 gun emplacement	84	11d4.1	NAI	18	1	1	1	1	No	22
112	Walney Island	WW2 air gunners range	49-51	11c14.8	NAI	6	3	2	5	5	No	21
113	Grune Point	WW2 trenches and slit trenches	94, 121-124	11e6.3	NAI	6	6	3	3	3	No	21
114	Burgh Marsh	Medieval ridge and furrow	182	11e8.5	MR	6	6	3	3	3	No	21
115	Burgh Marsh	WW2 bombing range marker	180	11e8.4	MR	6	6	3	2	4	No	21
116	Wyre Estuary	Post-medieval shipwrecks	196	11c1.4 11c1.8	HTL & NAI	8	4	4	2	3	No	21

117	Walney Island	WW2 wire fence	70	11c14.5	NAI 0-20 years MR 20-100 years	16	1	1	1	2	No	21
118	Arnside	Post-medieval limekiln	34	11c8.1	NAI	6	5	3	4	2	No	20
119	Heysham	Post-medieval wall	190	11c6.1	NAI	8	2	3	4	3	No	20
120	Grune Point	WW2 pillbox	93	11e6.3	NAI	8	7	2	2	1	No	20
121	Baycliff	Post-medieval quayside	39	11c13.1	NAI	14	1	2	1	2	No	20
122	Duddon Estuary	Post-medieval jetty	205	11c16.1	NAI	14	2	2	1	1	No	20
123	Ulverston	Post-medieval iron fragment	38	11c11.6	NAI	16	1	1	1	1	No	20
124	Pilling	Post-medieval peat cutting	196	11c2.3	HTL 0-20 years HTL or MR 20-50 years HTL 50-100 year	4	5	3	4	3	No	19
125	Arnside	Post-medieval structural fragment	35	11c8.1	NAI	14	2	1	1	1	No	19
126	Duddon Estuary	Post-medieval shipwreck	207	11c16.1	NAI	14	2	1	1	1	No	19
127	Drigg	WW2 minefield	209	11d4.1	NAI	14	2	1	1	1	No	19
128	Drigg	WW2 trench	208	11d4.1	NAI	14	2	1	1	1	No	19
129	Pilling	Medieval saltworks	14	11c2.3	HTL 0-20 years HTL or MR 20-50 years HTL 50-	2	2	5	4	5	No	18

					100 year							
130	Walney Island	WW1/WW2 underground chambers	63	11c14.1	NAI	2	5	3	5	3	No	18
131	Drigg	WW2 military camps	82, 226	11d4.1	NAI	2	7	3	4	2	No	18
132	Dungeon Lane	WW2 anti-tank blocks	197	11a7.8	NAI	12	3	1	1	1	No	18
133	Aldingham	WW2 ruined building	235	11c13.1	NAI	14	1	1	1	1	No	18
134	Knockcross	Post-medieval saltworks	178	11e8.3	MR	2	3	5	2	5	No	17
135	Heysham	WW2 anti-tank block	157	11c6.1	NAI	6	8	1	1	1	No	17
136	Hilbre Island	Medieval St. Hildeburgh's Chapel	146	11a5.11	HTL	2	1	4	4	5	No	16
137	Ribble Estuary	Victorian firing range	11	11b1.15	HTL	2	4	4	2	4	No	16
138	Ribble Estuary	WW2 airfield	9	11b1.14	NAI	2	6	3	3	2	No	16
139	Brighthouse	Post-medieval copper working	224	11d3.1	NAI	2	2	3	6	3	No	16
140	Waberthwaite	Prehistoric occupation site	222	11d3.1	NAI	2	1	4	1	7	No	15
141	Grune Point	WW2 weapons pit	95	11e6.3	NAI	6	6	1	1	1	No	15
142	Burton Marsh	WW2 bombing decoy control	155	11c5.5	NAI	2	7	3	1	1	No	14

143	Walney Island	Post-medieval saltworks	64	11c14.1	NAI	2	2	3	3	4	No	14
144	Walney Island	WW2 decoy control building	202	11c14.1	NAI	2	5	2	2	3	No	14
145	Neston	Post-medieval quayside	154	11c5.5	NAI	4	6	1	2	1	No	14
146	Hilbre Island	WW2 air raid shelter	147	11a5.11	HTL	2	8	1	1	1	No	13
147	Burton Marsh	WW2 bombing decoy site	201	11c5.5	NAI	2	5	3	1	2	No	13
148	Walney Island	WW2 bunker	69	11c14.1	NAI	2	5	2	2	2	No	13
149	Walney Island	WW2 air-raid shelter	62	11c14.1	NAI	2	5	2	2	2	No	13
150	Heysham	WW2 trenches	19, 20, 191	11c6.1	NAI	6	3	1	2	1	No	13
151	Bromborough	WW2 pillboxes	219	11a7.1	HTL	2	7	1	1	1	No	12
152	Ribble Estuary	WW2 sewage works	4	11b1.15	HTL	2	4	2	1	3	No	12
153	Grennodd	Post-medieval railway platform	36	11c12.2	HTL	2	4	3	2	1	No	12
154	Barrowmouth	Post-medieval Airbank Quarry	131	11e1.1	NAI	2	3	3	2	2	No	12
155	Cardunock	Post-medieval peat cutting	177	11e7.7	MR	2	4	2	2	2	No	12
156	Ribble Estuary	Post-medieval ridge and furrow	12	11b1.15	HTL	2	6	1	1	1	No	11
157	Grune Point	WW2 demolition debris	97	11e6.3	NAI	6	1	1	1	1	No	10

158	Jenny Brown's Point	Post-medieval sluice gate	159	11c7.5	NAI	2	4	1	1	1	No	9
159	Ribble Estuary	Post-medieval wall	3	11b1.14	NAI	2	3	1	1	1	No	8
160	Ribble Estuary	WW2 military camp	10	11b1.15	HTL	2	2	2	1	1	No	8
161	Heysham	20th century quarry	193	11c6.1	NAI	2	3	1	1	1	No	8
162	Walney Island	WW2 weapons pits	46-47	11c14.8	NAI	2	2	1	1	2	No	8
163	Walney Island	WW2 airfield platform	53	11c14.8	NAI	2	2	1	1	1	No	7
164	Walney Island	WW2 trench	48	11c14.8	NAI	2	1	1	1	2	No	7
165	Ribble Estuary	WW2 structures	5, 13	11b1.15	HTL	2	1	1	1	1	No	6
166	Ribble Estuary	WW2 gun emplacement	1	11b1.14	NAI	2	1	1	1	1	No	6
167	Ribble Estuary	WW2 pillbox	6	11b1.14	NAI	2	1	1	1	1	No	6
168	Walney Island	WW2 gun emplacement	45	11c14.8	NAI	2	1	1	1	1	No	6

Table 2.1 Prioritised list of threatened heritage assets on the North West coast of England based on the results of the NWRCZA Project.

Position		Site Type	NWRCZA UID	Policy Unit	Policy	Threat	Condition	Significance	Potential	Rarity	Potential to Designate	Total
											Yes/No/Already Designated	/60
1		Inter-tidal peat	244	11b 2.5	HTL	20	9	10	9	10	No	58
2		Inter-tidal peat	245	11c 14.5	NAI 0-20 years MR 20-100 years	18	8	10	10	10	No	56
3		Inter-tidal peat	248	11d 2.1	NAI	20	7	9	10	9	No	55
4		Inter-tidal peat	246	11d 7.1	NAI	20	7	10	7	10	SSSI	54
5		Peat in dune face	212	11d 4.1	NAI	16	7	10	10	8	SSSI	51
6		Inter-tidal peat	242	11e 5.1	MR	20	5	9	6	9	SSSI	49
7		Inter-tidal peat	243	11c 6.2	HTL	20	2	8	4	6	SSSI	40
8		Inter-tidal peat	-	11d 2.2	MR	6	8	8	9	8	No	39

Table 2.2 Prioritised list of peat sites sampled and dated during NWRCZA Phase 2.

3 Conclusions and future proposals

3.1 The NWRCZA project has identified priority sites at risk from coastal erosion and has suggested various management options for those sites at ‘imminent risk’. The assessment of interest and threat set out in Table 2.1 allows for the formation of management options for each of the sites on this priority register. This means that the raw data collected by the NWRCZA project can be used as a management tool for forming positive archaeological strategies and actions. It can also be used for assessing condition, protection, recording, and where possible, preservation of archaeological sites.

3.2 This was one of the key overarching aims of the project and the value of the new data added to Historic Environment Records by both phases of the project has meant there is now a sound evidence base for future decision-making and actions. This exercise has produced a useful methodology to guide future monitoring of coastal assets that could be repeated at a local scale, at regular intervals, and at relatively low cost, particularly if volunteer groups were included under the supervision of a professional archaeologist. This could be achieved through a series of schemes designed to monitor and investigate the archaeology of the coast. This would allow local communities to further engage with their coastal heritage while contributing to the understanding, investigation and monitoring of heritage assets. Crucially, such projects would provide the necessary sustainability, particularly for monitoring work, into the future. Projects following this format would facilitate partnerships between professional archaeologists and volunteers through community inclusion, outreach and training. Such projects would not only help rescue remains from destruction without record, but they would also generate public interest, enjoyment and knowledge gain. Funding could be sought from a variety of organisations and could include the Heritage Lottery Fund, English Heritage, Defra, Natural England, Environment Agency and Leader Plus.



Figure 3.1 Rapid recording of the ‘Abana’ shipwreck at Cleveleys in Lancashire.

3.3 The whole of the North West coastline could be broken down into sections, perhaps based on the SMP policy unit areas, with an archaeological project set up to cover each area. Alternatively projects could be set up on a site by site basis according to need. Such projects would enable community engagement with coastal heritage, combined with ongoing monitoring of heritage assets. There is great potential for extensive community involvement in such projects, including local groups, schools, as well as visitors to the coast. Widespread involvement would aid in raising awareness amongst the public, capacity building within the heritage sector, as well as locking in the volunteer sector. If such projects could be delivered, then not only would the ongoing recording and monitoring of eroding assets continue into the future, but it would help maximise the benefit of such work to society, whilst also reducing its cost.

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