



PASCOE ARCHAEOLOGY

NORTHUMBERLAND (1703) GOODWIN SANDS, OFF KENT

CONSERVATION STATEMENT & MANAGEMENT PLAN

Authors

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NORTHUMBERLAND (1703) CONSERVATION STATEMENT & MANAGEMENT PLAN

EXECUTIVE SUMMARY

Northumberland is a 70 gun, third-rate, ship-of-the-line launched by the Royal Navy in 1679. The ship was built under the first phase of construction of the '1677 shipbuilding programme', overseen by Charles II and Secretary of the Admiralty, Samuel Pepys. In 1703 the ship was wrecked during the Great Storm on the Goodwin Sands, off Ramsgate in Kent.

The wreck site was discovered in 1980 as a result of the systematic investigation of fishermen's net fastenings by The Goodwin Sands Marine Archaeological Trust, a newly formed sub-trust of the Isle of Thanet Archaeological Unit. It was subsequently designated in 1981 under the Protection of Wrecks Act 1973.

In 2017, the *Northumberland* was added to Historic England's Heritage at Risk register as 'High' due to a reduction in sediment levels resulting in the continued exposure of structure and artefacts. Potentially extensive remains of the wreck are preserved beneath the seabed, although it is not clear as to what extent and depth these are buried.

This Conservation Statement and Management Plan has been produced to enable local, regional and national stakeholder involvement in Historic England's aspirations for the conservation management of *Northumberland* to balance conservation with economic and social needs. The principal aim of the Plan is to identify a shared vision of how the values and features of *Northumberland* can be conserved, maintained and enhanced.

The following management policies have therefore been developed:

Management Policy 1 We will continue to support and develop authorised access to the site as a mechanism to develop the instrumental value of the Northumberland.
 Management Policy 2 Stakeholders will develop appropriate methods of dissemination, including web-based initiatives, to increase

public understanding and enjoyment of the Northumberland.

- Management Policy 3 Mechanisms will continue to be identified and implemented to as to continue to develop shared ownership and partnership working.
- Management Policy 4 Key gaps in understanding the significance of the component parts of the site are now being identified, prioritised and addressed so that these significances can contribute to informing the future conservation management of the site.
- Management Policy 5 We will seek to undertake a programme of environmental monitoring to better understand the seabed dynamics and sediment levels on the site.
- Management Policy 6 We will seek to undertake a programme of targeted recording of exposed archaeological remains.
- Management Policy 7 Disturbance of the seabed will be avoided in order to minimise the risk of damage to buried archaeological remains.
- Management Policy 8 If site monitoring indicates that the site is destabilising, due to loss of seabed sediments, resulting in significant archaeological remains being lost, then a programme of staged archaeological work should be considered subject to the submission of a suitable project design.

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1 INTRODUCTION

1.1 Background

- 1.1.1 England's historic environment is particularly rich and varied; it is our legacy to the future, and we owe it to future generations to make sure it is protected and enhanced.
- 1.1.2 Wreck sites may contain the remains of vessels, their fittings, armaments, cargo and other associated objects or deposits and they may merit legal protection if they contribute significantly to our understanding of our maritime past. The Protection of Wrecks Act 1973 (PWA) allows the UK Government to designate, in territorial waters, an important wreck site to prevent uncontrolled disturbance. Although the National Heritage Act 2002 enabled Historic England to assist with costs relating to works under the PWA, this opportunity must be balanced against strategic research priorities.¹
- 1.1.3 In addition, the UK Government has adopted the Annex to the UNESCO Convention on the Protection of the Underwater Cultural Heritage 2001 as best practice for archaeology. This Annex comprises a series of ethical *rules concerning activities directed at underwater cultural heritage* which provide objective standards by which to judge the appropriateness of actions in respect of archaeology underwater.²
- 1.1.4 The UK Marine Policy Statement, published in 2011, is the framework for preparing Marine Plans and taking decisions affecting the marine environment. It contributes to the achievement of sustainable development in the UK marine area. A high-level marine objective for the promotion of good governance is that use of the marine environment recognises the protection and management needs of underwater cultural heritage. Accordingly, the view shared by the UK Administrations is that underwater cultural heritage should be enjoyed for the

¹ See <u>https://historicengland.org.uk/about/what-we-do/corporate-strategy/</u>

² See:<u>http://portal.unesco.org/culture/en/ev.php-URL_ID=33966&URL_DO=DO_TOPIC&URL_SECTION=201.html</u>.

quality of life it brings to this and future generations, and it should be conserved through marine planning in a manner appropriate and proportionate to its significance.³

1.2 Purpose

- 1.2.1 This document seeks to set out a Conservation Statement and Management Plan for the Northumberland, an archaeological site designated under the Protection of Wrecks Act 1973 lying 9.5km southeast of Ramsgate on the Goodwin Sands between North Sands and South Sands Head.
- 1.2.2 The Northumberland is attributed the National Record of the Historic Environment monument number 1082118 (PastScape 2019) and National Heritage List for England (NHLE) number 1000058 (NHLE 2019).
- 1.2.3 Historic England published a set of *Draft Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment* designed to strengthen our credibility and consistency of decisions taken and advice given (Historic England 2017a). These *Conservation Principles* are intended to support the quality of our decision-making, with the ultimate objective of creating a management regime for all aspects of the historic environment that is clear and transparent in its purpose and sustainable in its application. As such, *Conservation* is taken to be the process of managing change in ways that will best sustain the values of a place in its contexts, and which recognises opportunities to reveal and reinforce those values.
- 1.2.4 This Conservation Statement and Management Plan has therefore been produced to enable local, regional and national stakeholder involvement in identifying aspirations for the conservation management of the *Northumberland*.

³ <u>https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69322/pb3654-marine-policy-statement-110316.pdf</u>

1.3 Aims and Objectives

- 1.3.1 The principal aim of this Conservation Statement and Management Plan is to identify a shared vision of how the values and features of the *Northumberland* can be conserved, maintained and enhanced.
- 1.3.2 This will be achieved through the following objectives:
 - Understanding the Northumberland
 - Assessing the significance of the Northumberland
 - Identifying where the significance of the Northumberland is vulnerable
 - Identifying policies for conserving the significance of the Northumberland
 - Realising the public value of conservation of the *Northumberland*

1.4 Scope and Liaison

- 1.4.1 Historic England (when English Heritage) sought to develop assessment methods to characterise the state of all designated historic assets and to understand their current management patterns, their likely future trajectory and how that can be influenced to ensure their significance is maintained for both present and future generations. For historic wreck sites, methodologies were developed to allow for the systematic quantification of the resource and to set benchmarks for the monitoring of future change. A major component of this process comprises the identification of risks to historic wreck sites so as to provide a measure of how a site is likely to fare in the future (see Historic England, 2017b).
- 1.4.2 Practical measures that can conserve, maintain and enhance the values and features of the *Northumberland* identified as being at risk will be delivered through this Conservation Statement and Management Plan.
- 1.4.3 There are currently 54 wrecks designated in England under the Protection of Wrecks Act 1973, of which the *Northumberland* is one. Access to these sites is managed through a licensing scheme and is subject to authorisation by the Secretary of State for Digital, Culture, Media and Sport (DCMS).

1.5 Authorship

- 1.5.1 This document was originally drafted by Rebecca Ferreira, sub-contracted by Pascoe Archaeology (PA) with assistance from Daniel Pascoe of PA, for Historic England. Contributions to this draft Conservation Statement and Management Plan are currently being sought through stakeholder involvement. Full acknowledgements of those who contributed to, or were consulted on, its preparation will be presented in the final version.
- 1.5.2 This document is based on the *Draft Conservation Principles for the Sustainable Management of the Historic Environment* (Historic England 2017a) and draws on generic management plans for shipwreck sites (e.g. Cousins 2018).

1.6 Status

1.6.1 The final version of this report was adopted in February 2020. Notes on its status (in terms of revision) will be maintained.

2 UNDERSTANDING HMS NORTHUMBERLAND (1703)

2.1 Historical Development of the Designated Site

- 2.1.1 The known information and particulars of the *Northumberland* may be presented as a summary ship biography which draws together the main attributes of the site and provides a statement of the site's archaeological interest:
 - **Build** Third rate, ship-of-the-line built in 1679 by Francis Baylie in Bristol for Pepys' Restoration Navy. Rebuilt at Chatham and relaunched in 1702. Owned by the British Royal Navy.
 - Use Naval vessel employed in key naval campaigns at the turn of the 18th century.
 - Loss The Northumberland was lost on the Goodwin Sands in the Great Storm of 1703, along with two other third rates, the *Stirling Castle* and the *Restoration*, and a fourth rate, the *Mary*.
 - Survival Northumberland lies at a charted depth of 14m, 9.5km southeast of Ramsgate on the Goodwin Sands, between the North Sands and South Sands Head. The remains appear to be extensive and stands c.2-3m proud of the seabed. Large sections of the hull are preserved; however, the overall extent is not currently known. The southeast of the site has been interpreted as the bow of the ship and the northwest as the stern. The 2018 survey measured the wreck mound as c.37m in length and 20m in width. The site lies in a larger debris field with some scattered features to the west and northwest of the mound. However, the appearance of the site frequently changes with the highly mobile nature of the sands. The current evidence and quality of survival of the exposed structure suggests high potential of survival for areas of the site that are currently unexposed, however portable artefacts and areas exposed for longer periods of time are more vulnerable to the environmental processes that are characteristic of the Goodwin Sands. The site is of interest at both national and international levels and is considered a local landmark.
 - **Investigation** Since 1989 the site has been surveyed and monitored by the ADU and Wessex Archaeology on behalf of Historic England. Licensees Robert Peacock (1993-2014) and Daniel Pascoe (since 2015) have been essential in monitoring and surveying the wreck. The recovery and conservation of the chain pump and site investigations up to 2011 were published in 2015.
- 2.1.2 Following the end of the Third Dutch War in 1674, the British Navy was battle damaged and in a state of disrepair, with many ships soon to become obsolete. There was an urgent need to build new ships to strengthen the Navy against other maritime powers, such as France and Holland. The response to this threat was the undertaking of one of the largest and most ambitious building programmes of its time, known as the '1677 shipbuilding programme' (Pascoe and Peacock, 2015:132). Overseen by King Charles II and the Secretary of

Admiralty, Samuel Pepys, the programme saw the construction of thirty ships, comprising twenty third rates, nine second rates and one first-rate (Fox, 1980: 154).

- 2.1.3 During this period, a series of reforming measures were imposed on Naval shipbuilding by both Pepys and Charles II with a view to create standardisation and professionalism in the Navy (Knighton 2003). Pepys focused on providing permanent gun establishment and reforming the Officers Corps (Knighton 2003: 113), whilst Charles II focused on the standardisation of masts, spars, rigging and fittings on all Naval ships.
- 2.1.4 The size of the programme led to a great strain on the resources of the Royal Dockyards resulting in the new ships being constructed in two phases (McElvogue, 2008: 35). The *Northumberland* was laid down as one of 12 third-rates in the first instalment of ships in 1677 and was built in 1679 at Francis Baylie's Yard in Bristol.
- 2.1.5 After her launch in 1679, the *Northumberland*, like the majority of the other new ships from this phase of construction, spent much of the next decade laid up in ordinary due to a period of little to no action. This meant that many of the thirty ships began to decay and rot at their moorings (Lavery 1983: 52). In an original document, 'A Survey of the defects Appearing on His Majesty's Ships and Vessels Now Lying up in Harbour', dated from the 1st of June 1684, the Northumberland is listed as being moored at Portsmouth after only five years since her launch; the ship had numerous defects at the cost of £1,000 to repair (The National Archives (TNA) ADM106/3566).
- 2.1.6 Despite this period of inaction, the last decade of the 17th century saw normal services resumed for the Royal Navy and the fleet was called to action. The *Northumberland* was instrumental in some of the most prominent and infamous battles of the century, including: the embarrassing defeat by the French at Beachy Head in 1690; victory at Barfleur/ La Hogue in 1692; the Trafalgar of the Restoration Navy; and leading the second bombardment on St Malo in 1695, under the command of Captain Benbow (Willis 2010: 339).

- 2.1.7 Following this period of high activity and action the *Northumberland* was in a poor state. A survey at Chatham in October 1696, by Master Shipwright Robert Lee, found the ship very weak all over, especially at the bow. Lee proposed the repairs would take at least two months but probably more (TNA ADM106/488/196). By April 1697 the condition of *Northumberland* was described as unserviceable and waiting for the opportunity of a rebuild (TNA ADM95/14).
- 2.1.8 In fact, the Northumberland would spend the next four years in desperate need of a rebuild, as it wasn't until November 1699 that plans to rebuild the ship were finally approved (TNA ADM 95/15). The cost to rebuild the ship in January 1700 was estimated at £10,155 (TNA ADM 95/15). To put that in perspective, it was more than the cost to build the original ship in 1677. Francis Baylie agreed a cost of building the ship at £9 per ton (excluding the masts) (Pool 1966: 14). The Northumberland's burthen weight in 1679 was 10,041 tons, and thus, the price to build the ship would have been over £9,000.
- 2.1.9 Rebuilding by this time was increasingly thorough, leading to the dismantling of the old ship to rebuild (Winfield 2009, 76). This certainly would appear to be the case for the *Northumberland* as the reported defects were so severe (TNA ADM106/488/196, TNA ADM 95/14, TNA ADM 95/15) and the cost so high (TNA ADM 95/15). The rebuild took place at Chatham Dockyard by shipwright Robert Shortiss and the ship returned to sea by June 1702 (TNA ADM 95/15).
- 2.1.10 Following the rebuild there were only minor differences to the overall dimensions of the ship (Winfield 2009, 64 and 79) (see table below), which suggest the overall design of the vessel didn't change significantly. However, in terms of materials used and constructional techniques deployed, the *Northumberland* was probably a very different ship to the one that was built and launched at Baylie's yard in Bristol. This must, therefore, be taken into consideration during future investigations of the surviving hull structure on the seabed.

	1679 Dimensions	1702 Dimensions
Length of gundeck	151ft 11 ¾ in	152ft
Length of keel	121ft 4in	126ft 8in
Beam	40ft 2in	40ft 4in
Burthen in tons	1041	1096

- 2.1.11 After the rebuild, the Northumberland saw action with a combined Anglo-Dutch force at the Battle of Vigo Bay, securing an overwhelming success over the French and Spanish forces in the taking of Redondela Harbour in October 1702 (Rodger 2004: 166).
- 2.1.12 The ship's last call to service was to block the French Fleet at Toulon in the Mediterranean before returning home with the Mediterranean Fleet under the command of Sir Cloudesley Shovell (Martin-Leake 1919: 124).
- 2.1.13 Upon returning to English Waters, the Northumberland took shelter in the Downs on the 17th of November 1703, along with the rest of the Mediterranean Fleet. The fleet, consisting of both the White and Blue Squadron, were extremely weakened after the loss of 1500 men during the voyage and three quarters of the rest of the fleets company were ill and weak. Such a loss meant that there were barely enough men to manage the ships (Martin-Leake 1919: 126). Within a few days of the fleet taking shelter, a devastating storm hit the shores of England during the 26th and 27th of November 1703.
- 2.1.14 Two days previous, Sir Cloudesley Shovell departed the Downs with the White Squadron after orders to return to London, leaving behind both the Blue Squadron of the Mediterranean fleet and the Channel Squadron, commanded by Rear Admiral Basil Beaumont. After the departure of Shovel, the weather worsened and it was reported that the storm caused many of the ships to drag their anchors or part from their cables, including the *Northumberland*.
- 2.1.15 Multiple eye-witness accounts of that night provide some details of the last moments of the *Northumberland* and two other third rates, the *Restoration* and *Stirling Castle*, and one fourth rate, the *Mary*. The account of Miles Norcliffe, who was on the neighbouring *Shrewsbury*, stated:

'these ships were all close by us, which I saw [...] fired their guns all night and day long, poor souls, for help, but the storm being so fierce and raging, could have none to save them.' (Harvey 1779: 135).

2.1.16 In another account by James Adams, he described a close call with the *Mary* and the *Northumberland*:

'By four o'clock we missed the Mary and the Northumberland, who rid not far from us, and they were found driven from their anchors.' (Harvey 1779: 176).

2.1.17 Adams' account also cited the story of the only man who was saved from the *Mary*. It was stated that:

'by help of a piece of broken ship, [he] got aboard the Northumberland; but the violence of the storm continuing, the Northumberland ran the same fate with the Mary, and coming on shore on the same sand, was split to pieces by the violence of the sea.' (Harvey 1779: 173)

2.1.18 The Northumberland was lost with all hands along with the Restoration, Stirling Castle and the Mary, with Rear Admiral Basil Beaumont of the Channel Squadron, who was on board the Mary.

2.2 Historical Development of the Designated Site

- 2.2.1 The wreck site was discovered in 1980 as the result of the systematic investigation of the fishermen's' net fastenings by the Underwater Research Group of the Isle of Thanet (Perkins 1980:3). The same group had also discovered the wreck of the *Stirling Castle* in the previous year. The *Northumberland* was identified through the recovery of pewter plates that bore the inscription J.G, presumed to represent the Captain of the *Northumberland*, James Greenway (Peacock 2008: 35). Other items were raised including the ship's bell with the date 1701 and a large copper kettle. All of these items are now held in the Ramsgate Maritime Museum.
- 2.2.2 The site was first designated on 08 June 1981 under the Protection of Wrecks Act 1973 (PWA). This designation came into force 07 July 1981 (SI 1981/827) and protected a 50m radius centred on 51° 15.759 N 001° 30.081E. However,

this recorded location was proven inaccurate in 1989, and the site was redesignated to a 50m radius centred on 51° 15.45 N 001° 30.12 E (SI 1989/2089). The current designation was made in 2004 after illegal diving activity was seen on site during surveys and the radius was increased to 300m centred on 51° 15.4802 N 001° 30. 0161 E (SI 2004/2395).

- 2.2.3 As a result of the erroneously designated area for the *Northumberland* in 1989, artefacts were removed from the wreck site by divers and no archaeological investigation had yet been conducted on the site. It was not until 1993, when Robert Peacock was made the Licensee of the *Northumberland*, that archaeological survey took place on site and the first site plan was produced (ADU 1993). It was reported that the structure was being exposed and undercut by the shifting sands, with areas scoured down to the chalk seabed.
- 2.2.4 A second licence was issued in 1994, with Peacock and his dive team carrying out the survey on site. The extant remains were located with an echo-sounder and the diver investigation revealed both disarticulated and coherent structure and several guns of two different calibres with at least three associated with remains of their wooden carriages. Most of the exposed timbers observed were covered in juvenile mussel growth.
- 2.2.5 During investigations in 1996, three guns were identified with one associated gun carriage, as well as one complete onion bottle (and remains of others) found together with a lead box. Peacock reported that areas of seabed were still scoured down to the chalk bedrock (ADU 1996).
- 2.2.6 Peacock and his dive team founded the Seadive Organisation in 1998 and took on the responsibility of recording and managing the Great Storm wrecks (Pascoe and Peacock 2013: 3). However, no archaeological investigations were carried out by the Licensee's dive team in 1999 as attention was focused on the nearby *Stirling Castle*. The ADU conducted diving investigations and remote survey consisting of magnetometry and bathymetry; the site appeared to be stable, but the exposure of portable items suggested that the seabed levels had lowered in areas of the site. Larger features identified in the 1993

site plan were visible, including large sections of ship structure and coils of anchor cable and ordnance. Smaller, more vulnerable artefacts, that were not recorded in the site plan, were observed, such as glass onion bottles, pewter containers, two copper cauldrons, lead sheeting and ceramics (ADU 1999). However, no juvenile mussels were evident on site, suggesting that the site had been only relatively recently exposed.

- 2.2.7 The ADU carried out a second magnetometer survey in 2002, whilst RDF Media conducted a sidescan sonar survey (SSS).
- 2.2.8 Wessex Archaeology took over diving operations in 2003 and reported that scouring was observed around the edge of the wreck mound, then deemed to measure *c*. 70m long by 30m width and 3-4m high, but no significant deposition or erosion. The Licensee reported that significant scouring occurred around larger objects such as one of the guns. Mussels were noted on several features. Features identified included: six heavily concreted iron guns; ship's timbers (frames and planking); a large upstanding, composite and structural component; and two lead patches with fastenings. The two copper cauldrons identified previously were shown to be in a deteriorating state. Other non-structural artefacts included a rope (3-4cm in diameter) and a belt buckle (Wessex Archaeology 2003).
- 2.2.9 In 2005, the Northumberland was one of several sites on the Goodwin Sands chosen for investigation as part of a three-year project led by the University of St Andrews. This was known as the Rapid Archaeological Site Surveying and Evaluation (RASSE) project, administered by English Heritage and funded through the Aggregates Levy Sustainability Fund (ALSF) (Bates *et al.* 2005, 2007, 2011). The RASSE project trialled the use of a dual-head Reason 8125 Ultra High Reason Multi-Beam Echo-sounder to survey the site. The 2008 diving operations led by Wessex Archaeology were focused on ground-truthing the 2005 ADU geophysical data. The mound, measuring 40m length by 20m width and 3m height, lay in a larger debris field with some scattered features occurring to the west and north-west of the mound. A dense turf of juvenile mussels was observed on almost all exposed features. The large section of coherent ship structure was largely free of mussels, except for the tips of the

timbers. Such a density of marine life masked the features and made groundtruthing difficult (Wessex Archaeology 2009a). A site plan was created using a partial plan by Wessex Archaeology, the 1993 site plan, diver observations and imagery from SSS data (Wessex Archaeology 2009a)

- 2.2.10 Following this, Wessex Archaeology were funded by English Heritage in 2008 to carry out SSS and magnetometer surveys as part of the South East of England Designated Wrecks project (Wessex Archaeology 2009b).
- 2.2.11 Also, in 2008, under a surface recovery license, the licensee recovered the bottom end of one of the ship's chain pumps. Subsequently, English Heritage funded Seadive to conduct a project to research, record and conserve the pump. The subsequent research on the chain pump (Pascoe *et al.* 2015) was published along with an interim report of the site's investigations (Pascoe and Peacock 2015).
- 2.2.12 Due to the site's prolonged exposure the Licensee submitted a Project Design to conduct a strategic excavation of a vulnerable area of structure. This Project Design was accepted and an Excavation license was granted by the DCMS through English Heritage in 2011. Excavation was thwarted, however, by the encroachment of a large bank of sand. This completely reburied the site up until 2016.
- 2.2.13 In 2015, Daniel Pascoe took over as the Licensee of the wreck and since then has implemented a new scheme of monitoring on site that was funded by Historic England. Recent geophysical and archaeological surveys of the designated site, undertaken consecutively in 2017 and 2018, by Pascoe Archaeology, MSDS Marine and Swathe revealed metre to decametre changes in the sediment transportation (PA 2017, 2018a, 2018b). During the 2018 field season, much of the exposed features were recorded photogrammetrically and the results were scaled and georeferenced with the MBES data collected in early 2018. New features were identified such as a large assemblage of concreted swords at the north-western end of the site (PA 2018c).

2.2.14 During the 2018 season, biological trials were conducted, with three sets of wooden sample panels placed on site. The first is to be retrieved after 12 months, the second after 18 months and the third after 24 months (PA 2018c).

2.3 Description of Surviving Features

- 2.3.1 The wreck of the Northumberland is a complex site and its appearance has changed frequently since its discovery in 1980 as a result of the highly mobile sand banks of the Goodwin Sands. Therefore, description of the surviving features will include the description of the most current exposures of the site in 2018, and refer, where necessary, to previously uncovered areas that might be covered over now.
- 2.3.2 The current 2018 multi-beam bathymetry identified exposed features within a main wreck mound 37m long by 20m wide. The mound is orientated northwest-southeast, and it lies directly on bedforms that are migrating in a northeast direction (PA 2018c).
- 2.3.3 The highest point of the wreck mound is located at the southeast end of the site, interpreted to be the bow. Previous investigations had identified this as a concretion of iron shot (Pascoe and Peacock 2015: 134), however, the current inspections have revealed a more complex feature. The feature is a large conglomerate of concreted objects, some of which are clearly identifiable, including: a lead scupper; a staved bucket or barrel; a small pot, possibly ceramic; and pulley sheaves. However, further investigation is needed to identify the other objects or features that the mass is comprised of and to determine whether the feature is related to the structure of the ship or ballast, as the *Northumberland* has a higher amount of ferrous material than observed on other Restoration warships.
- 2.3.4 Within one metre of the group of sheaves there are several large iron shots and some possible bar shot scattered around the adjacent seabed. From the size of the shot they are likely to be for the larger calibre guns.
- 2.3.5 Lying to the west of this concretion there is a large riveted copper vessel lying on its side. It is in poor condition with part separation between the sides and

base of the vessel. The diameter of the vessel measured from its base is 600mm. This has been exposed previously and recorded on past site plans and reports (Pascoe and Peacock 2014: 135; Wessex Archaeology 2010: 8). These previous site plans and reports have described it as a twin copper cauldron. This suggests there has been significant deterioration or even loss of one of the vessels previously seen (PA 2018c).

- 2.3.6 Beneath the concretion are framing timbers with the side dimensions of the timbers measuring 340mm (13 ½ inches). This is consistent with the side dimensions of the lower hull structure that was identified in the 2011 excavations (Pascoe and Peacock 2015: 136). These timbers are only exposed for approximately 0.5m before they become buried in the sand, but they demonstrate the survival of wooden structures beneath the concretion and the surrounding seabed. Based on the 2011 investigations of the lower hull structure, the extant remains included: the keel (and possible false keel), floor timbers, first futtocks and ceiling planking (Pascoe and Peacock 2015).
- 2.3.7 Moving north-west, towards the centre of the wreck mound, is another area of concretions. There was nothing visibly obvious to help with its identification. Although, on the western side, impressions of planking were visible in the surface of the concretion. From the impression left behind the planking was 450mm wide and 150mm thick.
- 2.3.8 Moving 15m to the northwest, towards what has been interpreted as the stern is an area consisting of three iron guns, possible demi-cannons and a culverin, and a section of structure. These three guns were previously recorded on the 1993 site plan and are labelled R15, R24 and R23 (Wessex Archaeology 2003: Figure 3); these have been interpreted as relating to Gun 1, Gun 2 and Gun 3 respectively in the 2018 investigations (PA 2018c). R23 / Gun 3 has the remains of its associated carriage attached.
- 2.3.9 The structure recorded south of R15 / Gun 1 and R23 / Gun 3 appears to be a section of the hull consisting of frames and ceiling planking. This structure disappears into the sand and beneath the guns and is obviously part of a much larger area of structure.

- 2.3.10 The condition of the exposed timbers is poor with considerable deterioration from marine boring organisms. The exposed section is approximately 2.5m long by 1.5m wide, with up to seven frames and two ceiling planks exposed. Due to the poor condition of the timber, reliable measurements were not possible. However, the identification of possible demi-cannons and a culverin would suggest it is highly possible that this section of hull relates to the level of the gundeck, probably close to the stern end.
- 2.3.11 At the most north-western end of the wreck mound, a concretion of swords, not previously described, was identified with the feature sticking up both horizontally and almost vertically from the seabed. It was possible to make out the remains of wood and leather scabbards. The whole feature is 2m long by 1.3m wide and up to 1m above the seabed. From the size of the concretion and the number of linear shapes within it, there could be dozens of swords contained within this concretion.
- 2.3.12 All of the exposed features were significantly masked by hazardous netting, including heavy robust trawl netting; lobster pots and their accompanying ropes; and, most alarming, a large amount of gill netting. The gill netting is particularly hazardous as it is made of an extremely fine nylon mesh with small floats attached. The floats enable it to float above the seabed making it a real entanglement hazard. On many areas of the site the net was floating up to 0.5m above the seabed. Areas of the site showed evidence of deterioration as result of this material, such as the copper cauldron and parts of the sword concretion had broken off. In order to make the site safer and identify and understand the site further, this hazardous netting needs to be removed.

2.4 Ownership, Management and Current Use

- 2.4.1 The *Northumberland* is owned by the Ministry of Defence. The seabed within the restricted area and around the Goodwin Sands is owned by the Crown.
- 2.4.2 Physical access to the *Northumberland* is restricted to licensed divers, further recovery of artefactual material has been managed through the current licensing system. From 1993-2014 monitoring was undertaken by Licensee

Robert Peacock of Seadive Organisation. Since 2015, Daniel Pascoe of Pascoe Archaeology took over as Licensee of the *Northumberland*. Both have managed the recovery of the more vulnerable exposed artefacts. Artefacts recovered in the 1980s are held at Ramsgate Maritime Museum and a chain pump, recovered by Seadive in 2008, and subsequent finds from the 2018 field season are currently under conservation with Historic England. Following conservation, these artefacts will be deposited with the National Museum of the Royal Navy. The ADU Archives, held by Historic England in Swindon, make up the digital archive, as well as dive logs and reports on the *Northumberland*.

- 2.4.3 The Northumberland is located within the Goodwin Sands Marine Conservation Zone (MCZ), which was designated on 31st May 2019 in accordance with the Marine and Coastal Access Act 2009. The Goodwin Sands MCZ was designated due to the presence of subtidal coarse sediment; subtidal sand; blue mussel beds; moderate energy circalittoral rock; Ross work reefs (*Sabellaria spinulosa*); and English Channel outburst flood features.
- 2.4.4 The *Northumberland* is an emotive subject at a local level within the maritime heritage community at Ramsgate as the Great Storm was a major historical event and the townspeople of Deal and Ramsgate were active in rescue attempts and salvaging of material. The *Northumberland* is one of five current Protected Wreck sites on the Goodwin Sands.
- 2.4.5 The monitoring of the site revealed significant changes in sediment cover in areas of the site. However, the processes that determine exposure and coverage are not yet fully understood. In 2018, biological testing panels of wood were laid down on site, although the samples are yet to be collected, it is hoped that the biological processes of the Sands will be more fully understood after recovery and analysis.
- 2.4.6 In terms of access to the material and its presentation, the Goodwin Gallery at the Ramsgate Maritime Museum provides the only opportunity for interpretation, however the opening days are seasonal from April to September and even then the opening times are variable.

- 2.4.7 The nearest English Heritage property to the *Northumberland* is Deal Castle, which overlooks the Goodwin Sands, there is currently no provision for interpretative material there. In addition, there is no interpretative material available for divers wishing to visit the site on the seabed.
- 2.4.8 The site is managed by Historic England (formerly English Heritage) and has been assessed by the current contractor for Archaeological Services in Relation to Marine Protection, Wessex Archaeology, since 2005. However, on-going survey and monitoring work is largely undertaken through licensed activity by the current licensee and nominated archaeologist.

2.5 Gaps in Existing Knowledge

- 2.5.1 A comprehensive site plan has yet to be made. This is owing to the changing character of the site as a result of the highly mobile sand banks. It is clear from the above discussion that areas of the wreck are covered over and exposed at varying intervals that are unpredictable.
- 2.5.2 The quality of the surviving buried remains of the *Northumberland* have significant potential for further understanding of late 17th and early 18th century shipbuilding technology and practice. There is still more to learn from the structural remains of the ship in the understanding of the design and construction of the ship as it was one of the vessels of Pepys' 1677 programme that was built outside of the Royal Dockyards and because parts of the vessel were rebuilt at Chatham Dockyards in 1702. It is crucial to understand this as no plans, drawings or even models of the thirty ships have survived.
- 2.5.3 The *Northumberland* was identified solely on the recovery of a pewter plate from the site with the initials J.G. Although it was presumed to belong to James Greenway, captain of the *Northumberland*, further work to positively identify the ship is necessary as we cannot rely on information gleaned from one artefact.
- 2.5.4 A dendrochronological study of the hull timbers should identify the date and perhaps also sources and types of timber employed. Therefore, identifying which parts of the ship originate from the original construction at Baylie's

Shipyard and which parts were replaced during repairs at Portsmouth in 1684 and the rebuild at Chatham Dockyard in 1702.

- 2.5.5 Although historical accounts attest to some of the *Northumberland's* last moments, the accounts of her wrecking are not as detailed. Further survey and excavations could potentially enhance the understanding of the wrecking event.
- 2.5.6 The chain pump, recovered in 2008, suggests that the sump area, located in the lower hull, has potential for survival under sediment. This would greatly enhance the research already underway and increase understanding of the function of the chain pump.
- 2.5.7 Together, the archaeological and historical information forms a sound basis to develop an understanding of the *Northumberland*. However, the wreck site clearly has the potential to yield more information with large parts of the site unexcavated. Although recent surveys have produced valuable resources in understanding the vessel, such as a photogrammetric model, large areas that were observed in earlier surveys were not visible during these recent surveys.

3 ASSESSMENT OF SIGNIFICANCE

3.1 Basis for Assessment of Significance

- 3.1.1 Significance means the sum of the cultural and natural heritage values of a place (Historic England 2017a). Cultural heritage value has many aspects, including the potential of a place to yield primary information about past human activity (evidential value, which includes archaeological value), the ways in which it can provide direct links to past people, events and aspects of life (historical value), the ways in which people respond to a place through sensory and intellectual experience of it (aesthetic value, which includes architectural value) and the meanings of a place for the people who identify with it, and communities for whom it is part of their collective memory (communal value).
- 3.1.2 In addition, the historic environment is a cultural and natural heritage resource shared by communities characterised not just by geographical location but also by common interests and values. As such, emphasis may be placed upon important consequential (technically, 'instrumental') benefits or potential, for

example as an educational, recreational, or economic resource, which the historic environment provides. The seamless cultural and natural strands of the historic environment are a vital part of everyone's heritage, held in stewardship for the benefit of future generations.

3.1.2 The basis for assessing significance therefore enables consideration of the varying degrees of significance of different elements of the site. By identifying those elements which are vital to its significance and so must not be lost or compromised, we can identify elements which are of lesser value, and elements which have little value or detract from the significance of the site.

3.2 Statement of Significance

- 3.2.1 The *Northumberland* represents one of the Third Rates to be built under the first phase of Pepys' Thirty Ships programme, in 1677. It was the only ship to be built at Francis Baylie's merchant shipyard in Bristol and, like many other men-of-war, required rebuilding during her service in the Restoration Navy. *Northumberland* was then rebuilt at Chatham Dockyard by Robert Shortiss in 1702 and although there are known Restoration warships preserved in British Waters, there is a distinct lack of detailed knowledge on how these ships were truly built. Therefore, the aesthetic value of the *Northumberland* as a warship is closely tied to its evidential value on the seabed in terms of its historical context and technological development.
- 3.2.2 Additionally, the recovery of the chain pump from the wreck site in 2008 provides a rare archaeological example of the chain pump systems on ships. At the turn of the 18th century, chain pump systems had not yet been perfected or standardised, and so understanding the engineering of the chain pump in its entirety, along with the sump area is important for understanding the vessel.
- 3.2.3 Although further historical information may be derived from continued archaeological investigation and assessment, the monument's instrumental and historical value can be related to its participation in the War of Spanish Succession (1701-13) and subsequent loss during the Great Storm of 1703 (see Brayne 2003) as well as its association with Pepys and the development of the line of battle fleet.

- 3.2.4 The *Northumberland* is one of seven known shipwrecks of the '1677 shipbuilding programme' along with the *Stirling Castle*, the *Restoration*, the *Mary*, the *Eagle*, the *Anne* and the *Coronation*. On her own the *Northumberland* is both historically and archaeologically important but studied as part of this collective her significance increases. By studying these shipwrecks as a collective one can, for example, make comparisons between their design, construction and armaments. As a result, our understanding of these ships, the Navy and shipbuilding of this period increases.
- 3.2.5 Whilst historical, communal and instrumental values contribute to the assessment of significance of the *Northumberland*, these values cannot standalone. Without continued and sustained aesthetic and potential future evidential value, interest in the *Northumberland* would be diminished. As such, extant material remains on the seabed are vital to the significance of the site and must therefore not be lost or compromised.
- 3.2.6 The following table seeks to summarise these values of the *Northumberland* as a whole, by noting how those values relate to the surviving fabric and its constituent parts:
 - **Evidential** Relating to the potential of the *Northumberland* to yield primary information about past human activity; limited evaluation, excavation and chance recovery has indicated survival of substantial elements of hull structure, fittings, armaments and other associated objects or deposits.
 - **Historical** Relating to the ways in which the *Northumberland* can provide direct links to past people, events and aspects of life; the wreck is identified with famous personalities and military campaigns. Documentary evidence provides limited understanding of the wrecking event while archaeological material recovered from the site can provide a more detailed insight as well as insights into shipboard life.
 - Aesthetic Relating to the ways in which people respond to the *Northumberland* through sensory and intellectual experience of it; the wrecks' strength lies in it being a warship of the pre-establishment Restoration Navy. It was the first Third Rate of Pepys' Thirty Ships of 1677, forming the first great

shipbuilding programme, and one of the sixteen Third Rates to have been rebuilt between 1697 and 1704.

- **Communal** Relating to the meanings of the *Northumberland* for the people who identify with it, and whose collective memory it holds; from the original project team members who have a long history of association with the wreck, to the recent investigation and survey by PA in 2017 and 2018. Some interest, from members of the Isle of Thanet Archaeology Society, Ramsgate Maritime Museum and Ramsgate Heritage Action Zone (HAZ) group as one of the Great Storm of 1703 wrecks.
- **Instrumental** Economic, educational, recreational and other benefits which exist as a consequence of the cultural or natural heritage values of the *Northumberland* may be identified in its value as a dive site of historic interest, museum display and its co-location with other Protected Wreck Sites within the Goodwin Sands.

3.3 Gaps in Understanding Significance

- 3.3.1. With large areas of site unexcavated there are gaps in our understanding of the significance of the site overall. These will need to be filled so these significances can contribute to informing its future conservation management.
- 3.3.2. Since 2018, PA has been trying to establish the extent and significance of structural material remaining. This work is on-going and due to loss of diving days certain objectives were not met. However, the work has already contributed to an understanding of the site layout and associations of archaeological material currently exposed. It has also identified the potential for further remains to be buried under the seabed, and that this material will become exposed as a result of the migration of the sand dunes. To gain an even better understanding of what could potentially survive and to locate new areas of significance, high resolution sub-bottom data should be collected.
- 3.3.3. During the 2018 MBES survey of the site, the migration of sandbank revealed a scatter of gun-like anomalies within the designated area to the north of the wreck mound. The undertaking of diver ground-truthing could potentially identify whether these anomalies (possibly guns), are linked to the

Northumberland or are in fact from another wreck site, such as the *Restoration*, which is also beginning to expose again, or even the *Mary*.

- 3.3.4. Diver survey to ground-truth the northern anomalies is important; if they are guns, approximate measurements could be taken to establish if they came from a third-rate, such as *Northumberland* or the *Restoration*, or a fourth-rate such as the *Mary*. If they are found to be from the *Northumberland*, this would help understand the wrecking event and site formation process, as well as identify new areas of interest within the designated radius.
- 3.3.5 As stated in Section 3.2.4, the wreck of the *Northumberland* needs to be understood in relation to other contemporary men-of-war to fully appreciate the significance of her historical context and technological development. Excavation can provide clean, well-defined ship structure, preserved by the sand, that can be compared with timbers from the other Restoration warships wrecked on the Goodwin Sands, but also from the *Anne*, wrecked at the Battle of Beachy Head in 1690, the *Coronation* wrecked in 1691 and the *Eagle*, wrecked on Tearing Ledge in 1707. Both the *Anne* and the *Coronation* (should any structural timbers be found) make for important comparison as they were both wrecked before their refits, so could provide information about the first build of the Restoration Navy.
- 3.3.6 Furthermore, Northumberland was built in a merchant shipyard, so it would be significant to determine if there were differences in construction from those built in the Royal Dockyards. There is a higher level of ferrous concretions on the Northumberland site than observed on other sites of the Restoration warships. Further diver investigation can help determine what these ferrous concretions consist of, whether they were structural or used as ballast.
- 3.3.7 The *Northumberland* was solely identified by a pewter plate bearing the inscription J.G, presumed to be Captain James Greenway. Further archival research, such as a review of muster rolls or ship logs, will potentially identify if there were other officers with the initials J.G. present on the other vessels, the *Restoration* and the *Mary*. If this is the case future investigations should look to find ways to positively identify the wreck.

3.4 Statutory and Other Designations

- 3.4.1 Statutory Instrument 2004/2395 affords protections to a circular area of seabed (300m radius) centred on 51° 15.4802 N 001° 30. 0161 E under the PWA 1973.
 The National Grid Reference is TR 44319 56803.
- 3.4.2 Archaeological interventions that impact the seabed may require a marine licence issued by the Marine Management Organisation under the Marine and Coastal Access Act 2009 and a licence from the Crown Estate.
- 3.4.3 The Northumberland lies within the Goodwin Sand Marine Conservation Zone (MCZ). This MCZ covers an area of 277km² and was designated in 2019 under the Marine and Coastal Access Act 2009
- 3.4.4 In addition, Section 40 of the Natural Environment and Rural Communities Act (2006) places a duty on all public bodies to have regard to the conservation of biodiversity. Guidance for this duty, *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*, was published by DEFRA in 2011 (DEFRA 2011).

4 ISSUES AND VULNERABILITY

4.1 Introduction

- 4.1.1 This section summarises the main conservation and management issues that specifically affect, or may affect, the significance of the *Northumberland* and its component parts and elements. The ways in which the significance of the site may be vulnerable will also be identified.
- 4.1.2 Vulnerability (and therefore risk) may be assessed against environmental factors (such as natural processes) and human impacts on the site, including the setting (Historic England 2017b). Commissioned research has been undertaken to assess site specific marine environments to provide a better understanding of the level of risk to assets or whether a site is in a stable condition. The current assessment indicated that the *Northumberland* site is at high risk because of significant reductions in seabed levels exposing large areas of structure and artefacts (PA 2017, 2018a, 2018b, 2018c) unless they are completely buried below bed level during successive tidal cycles.
- 4.1.3 It is accepted that all wreck sites are vulnerable simply because of the nature of their environment, though sites will be considered to be at risk when there is a threat of damage, decay or loss of the monument. However, damage, deterioration or loss of the monument through natural or other impacts will not necessarily be considered to put the monument at risk if there is a programme of positive management.
- 4.1.4 Practical measures that affect site stability, preservation *in situ* and increased visitor access will be addressed here, while the necessity to address the paucity of publication in relation to previous interventions on the site is recognised (see also Section 4.7).
- 4.1.5 Issues relate specifically to the values identified in Section 3.2 above and are presented here thematically rather than in order of severity or priority for remedial action. Relevant issues cover a wide range, including but not restricted to

- The physical condition of the site and its setting;
- Conservation and presentation philosophy;
- Ownership and other legal requirements (including visitation);
- The existence (or lack) of appropriate uses;
- Resources, including financial constraints and availability of skills;
- Lack of information or understanding about aspects of the site, and;
- Conflicts between different types of significance.

4.2 The Physical Condition of the Site and its Setting

- 4.2.1 The Goodwin Sands are known to undergo slow seasonal to centennial rotation in an anti-clockwise direction with periods of minor reversals (Cloet 1954: 39). The condition of the ship's structure and artefacts has been excellent due to burial in an anaerobic environment under mobile sand. However, significant changes in the depth of burial, degree of exposure and artefact condition have been observed throughout the site since its discovery.
- 4.2.2 The recent multibeam bathymetry data shows the presence of bedforms providing evidence of the local bedload transport (PA 2017; PA 2018a). These are an indication of the local seabed settings around the site. The two main bedforms, per Ashley's (1990) classifications, are several large subaqueous dunes and medium subaqueous dunes, with the latter found on top of the large dunes. The larger dunes appear to come from the southwestern end of the Goodwin Knoll sandbank. Both bedforms are migrating in a north-north-east direction along the margin of the sand bank to the east (PA 2018c).
- 4.2.3 Further to this, the data also revealed that the edge of the sandbank to the north of the wreck has migrated 120m northeast, resulting in bed level loss and revealing a scatter of anomalies to the north of the site within the designated area (PA 2017). Whilst the seabed margin to the west of the site, orientated NNE/SSW is now 35m from the most northwest extent of the site. The seabed to the immediate west of the margin is deeper. The boundary of that deeper seabed has advanced 5m east towards the site and therefore poses a threat to the site if the margin continues to migrate east (PA 2018c).

- 4.2.4 In 2018 the wreck mound covered an area of 37m long by 20m wide (PA 2018a, 2018b). A comparison with the 2017 data highlights that the site has overall increased 4m x 2m (PA 2017), indicating that areas that were previously buried are now exposing more defined archaeological features. However, if we compare both of the above to the 2005 geophysical data collected by RASSE project, when the mound measured 50m in length, it can be surmised that further archaeological features will be revealed.
- 4.2.5 Based on the observed decrease in seabed level in recent years, and assuming a continuation of the observed decrease, the rate of bed level loss will expose larger areas of site, making the extant remains vulnerable to the tidal processes and biological processes and could result in the loss of archaeological material.
- 4.2.6 However, with the dredging of the Goodwin Sands for Dover Port potentially starting in 2020, the site needs to be regularly surveyed to assess if the dredging will have a negative impact (if any) on the dynamic environmental processes of the site.

4.3 Conservation and Presentation Philosophy

- 4.3.1 It is clear that there is potential for archaeology to be preserved beneath the sediment, however the depth and extent to which remains poorly understood. Although a more coherent site plan was produced in 2018, a detailed site plan is yet to be published and no comprehensive account of quantifiable changes in the site's condition has been undertaken. Consequently, it is argued here that the site is vulnerable to uncovering rapidly.
- 4.3.2 Considerable amounts of fishing gear were found entangled on areas of exposed wreckage and much of it was floating above the seabed. This is a serious entanglement hazard to divers, especially when the underwater visibility is poor. The current Licensee was contacted by HE regarding issuing a visitor's license to a dive club. At present it would be irresponsible to have divers who are unfamiliar with the site and potential hazards. The net is also a hazard to the archaeology and has already damaged the assemblage of concreted swords and the large copper vessel. The net is also obscuring the archaeology and hindering further recording and identification. The net is,

therefore, both a risk to divers and the archaeology. PA strongly recommends returning to the site next year to remove the netting and therefore the danger to divers and the archaeology.

- 4.3.3 *In situ* preservation management is not entirely appropriate for the site of the *Northumberland* as there is no evidence to suggest that site stabilisation is possible for the dynamic processes of the Goodwin Sands. Instead, PA strongly recommends a flexible management plan whereby annual monitoring of the site through geophysical and diver survey is undertaken. During periods of bed level loss, preservation by record would be more suitable to ensure vulnerable artefacts or features are not lost. However, during periods of sand accretion, preservation *in situ* with continued geophysical monitoring would be amenable.
- 4.3.4 As noted in 2.4.7 above, Deal Castle is the nearest English Heritage Property to the *Northumberland* which also overlooks five other Protected Wreck sites on the Goodwin Sands. There is obvious opportunity to provide interpretative material and appropriate signage for the wider marine historic environment within the Castle.

4.4 Visitor and other Occupancy Requirements

- 4.4.1 Physical access has the potential to be increased by the Licensee organising diver visitor days, however the site is currently not deemed safe to dive as a result of the hazardous fishing nets. Until these are removed then visitor access will not be encouraged.
- 4.4.2 There are views to creating online resources for 'virtual access' to the site. However, in order for this to be created, the site requires a comprehensive understanding of its plan and interpretation of the extant remains. This is not possible with the fishing nets obscuring the archaeology. There is also high potential for the sub-surface remains to be understood through collection and analysis of sub-bottom profiler data.

4.5 The Existence (or lack) of Appropriate Uses

4.5.1 Regular, consistent and reliable information relating to the condition of the *Northumberland* will be necessary to monitor the existence (or lack) of

appropriate uses of the site. Although un-licensed activity on the site has been reported in the past, there have been no recent reports of this.

- 4.5.2 Enforcement of the Protection of Wrecks Act 1973 is the responsibility of the appropriate County Constabulary as it is a criminal offence to any of the following in a designated area without a license granted by the appropriate Secretary of State:
 - Tamper with, damage or remove any part of a vessel lying wrecked on or in the seabed or any object formerly contained in such a vessel.
 - Carry out diving or salvage operations directed to the exploration of any wreck or to removing objects from it or from the seabed, or uses equipment constructed or adapted for any purpose of diving or salvage operations. This is likely to include deployment of remotely operated vehicles.
 - Deposit anything including anchors and fishing gear which, if it were to fall on the site, would obliterate, obstruct access to, or damage any part of the site.
- 4.5.3 It is also an offence to cause or permit any of the above activities to be carried out by others, without a license, in a restricted area.

4.6 Resources, including Financial Constraints and availability of Skills

4.6.1 There is no doubt that recovery of archaeological material and surveys of extant remains, indicates the evidential value of the *Northumberland* and that interaction with archaeological material relates to both aesthetic and historical value. The cost of dealing with recovery, storage and conservation is also high, however, Angela Middleton of Historic England has offered conservation for surface-recovered artefacts at Fort Cumberland, Portsmouth and the National Museum of the Royal Navy have offered the long-term storage and potential display of artefacts recovered from the *Northumberland* which have undergone conservation treatment. Should Historic England no longer have the resources to provide conservation, Professor Dave Parham of Bournemouth University

has offered to conserve surface-recovered artefacts at the Maritime Archaeology Sea Trust conservation unit.

4.6.2 In accordance with the Diving at Work Regulations 1997, archaeological interventions underwater commissioned by Historic England can only be undertaken by a registered Diving Contractor, and then only by such a Contractor with appropriate archaeological experience.

4.7 Lack of Information or Understanding about aspects of the Site

- 4.7.1 Taking to the Water (English Heritage's Initial Policy for the Management of Maritime Archaeology in England) addressed the protected wreck site post-excavation backlog. Here, it is recognised that over the last 25 years many licenses have been issued for survey and excavation work within areas designated under the Protection of Wrecks Act 1973. Few of the licenses issued required the academic reporting of fieldwork results and, as the vast majority of this work took place on a voluntary basis, lacking adequate financial support for subsequent analysis and dissemination of the results, very little of this work has been formally published (Roberts & Trow 2002, 25).
- 4.7.2 Inevitably, the standard of work carried out on the *Northumberland* has been variable and in differing formats. Some of the work undertaken has resulted in a high standard of recording, while others have resulted in less coherent records and understanding of the site. Only the more recent surveys have been published (Pascoe and Peacock 2015; PA 2017, 2018a, 2018b, 2018c).
- 4.7.3. There are several main areas that hinder public understanding of the *Northumberland*:
 - More information is needed on the extent and significance of structural and artefact material remaining;
 - More information is needed on the degradation of the structure;
 - Existing plans need further updating across the entire site
 - Lack of information on the extent and significance of the scatter of anomalies to the north of the site'.
 - Lack of comparable studies between the archaeological remains of Northumberland and other contemporary Restoration warships to

identify the level of standardisation under the '1677 shipbuilding programme'.

- Lack of understanding regarding the build and rebuild of the ship.
- 4.7.4 It is the intention of this Conservation Management Plan to provide a mechanism to reconcile the lack of information/understanding about the site to assist in its management for all.

5 CONSERVATION MANAGEMENT POLICIES

5.1 Introduction

- 5.1.1 This section of the Conservation Statement and Management Plan builds on the Assessment of Significance and the issues identified in Issues and Vulnerability to develop conservation policies which will retain or reveal the site's significance, and which provide a framework for decision-making in the future management and development of the site or reveal the site's significance and also:
 - Meet statutory requirements;
 - Comply with Historic England's standards and guidance.
- 5.1.2 It is intended that the policies will create a framework for managing change on the *Northumberland* that is clear in purpose, and transparent and sustainable in its application. Our aim is to achieve implementation through the principles of shared ownership and partnership working so as to balance protection with economic and social needs.
- 5.1.3 Policies are also compatible with, and reflect, Historic England's Conservation Principles for the Sustainable Management of the Historic Environment (Historic England 2017a) and its published policies and guidelines, as well as the wider statutory and policy framework.

5.2 The Northumberland is a Shared Resource

- 5.2.1 The *Northumberland* forms a unique record of past human activity which reflects the aspirations, ingenuity and investment of resources of previous generations. Through the future display of material at the National Museum of the Royal Navy, *Northumberland* may be an economic asset as a generator of tourism or inward economic investment.
- 5.2.2 The *Northumberland* is a social asset as a resource for learning and enjoyment. It should be used and enjoyed without compromising the ability of future generations to do the same.

- 5.2.3 In addition, the conflict between the desire for access to the site and the restrictions imposed by conservation needs and legislative limitations will be reconciled through visitor management.
- 5.2.4 Learning is central to sustaining the historic environment. It raises people's awareness and understanding of their heritage, including the varied ways in which its values are perceived by different generations and communities. It encourages informed and active participation in caring for the historic environment.
- 5.2.5 Education at all stages should help to raise awareness and understanding of the site's values, including the varied ways in which these values are perceived by different generations and communities.

Management Policy 1 We will continue to support and develop authorised access to the site as a mechanism to develop the instrumental value of the Northumberland

5.3 Everyone should be able to participate in sustaining the *Northumberland*

- 5.3.1 Local, regional and national stakeholders have the opportunity to contribute to understanding and sustaining the *Northumberland*. Judgements about its values and decisions about its future will be made in ways that are accessible, inclusive and informed.
- 5.3.2 Practitioners should use their knowledge, skills and experience to help and encourage others to understand, value and care for the *Northumberland*. They play a crucial role in communicating and sustaining the established values of the wreck, and in helping people to refine and articulate the values they attach to it.
- 5.3.3 There is a small exhibit in the 'Goodwin Gallery' of Ramsgate Maritime Museum, which features only limited artefacts from the *Northumberland*. More information and artefacts could be displayed here or another suitable local museum such as Deal Castle, in order to increase local understanding.

- 5.3.4 As yet there is no 'virtual access' to the site, however there are future plans to include this in the web-based initiatives. In order for this to be feasible, there needs to be more understanding and interpretation of the site and associated archaeology, which will only be possible after the removal of hazardous nets. PA currently hosts a *Northumberland* project page on the PA website (Pascoe-archaeology.com 2018). The project page includes photographs, site plans, 3D models, as well as four episodes of the '*Northumberland* Diaries' (Pascoe-Archaeology Youtube 2018).
- 5.3.5 PA also engaged audiences through the creation of 'The *Northumberland* wreck' Facebook page (2019). The page allowed PA to update people regularly on the condition of the site and artefacts and features recorded. The webpage is available at: <u>https://www.facebook.com/TheNorthumberlandwrecksite/</u>.
- 5.3.6 As work on the site continues there will be a marked effort to identify new mechanisms for engagement with the *Northumberland*. This will enable the development of shared ownership of the vessel and its conservation.

Management Policy 2 Stakeholders will develop appropriate methods of dissemination, including web-based initiatives, to increase public understanding and enjoyment of the Northumberland.

Management Policy 3 Mechanisms will continue to be identified and implemented so as to continue to develop shared ownership and partnership working.

5.4 Understanding the significance of the *Northumberland* is vital

- 5.4.1 The significance of the *Northumberland* embraces all the cultural and natural heritage values that are associated with it. To identify and appreciate those values, it is essential first to understand the structure and ecology of the site, how and why that has changed over time, and its present character.
- 5.4.2 The purpose of understanding and articulating the significance of the *Northumberland* is to inform decisions about its future.

- 5.4.3 We acknowledge that there are gaps in our understanding of significance as set out in Section 4.7:
 - More information is needed on the extent and significance of structural and artefact material remaining;
 - More information is needed on the degradation of the structure;
 - Existing plans need further updating across the entire site
 - Lack of information on the extent and significance of the scatter of anomalies to the north of the site'.
 - Lack of comparable studies between the archaeological remains of Northumberland and other contemporary Restoration warships to identify the level of standardisation under the '1677 shipbuilding programme'.
 - Lack of understanding regarding the build and rebuild of the ship.
- 5.4.4 A formal programme of assessment and recording started in 2018 and needs to be continued. Certain objectives were not met during the 2018 field season, including:
 - Collecting pH readings from the seabed;
 - Recovery of test pallets for the biological trial;
 - Ground-truthing anomalies to the north of the main wreck mound; and
 - Completing the photogrammetry survey of exposed features and add to current site plan.
- 5.4.5 A collaboration has been initiated between the current Licensee, Daniel Pascoe, and the National Museum of the Royal Navy which will potentially in the future enable artefacts to be displayed in their collections as there is currently a gap for this material archive.

Management Policy 4 Key gaps in understanding the significance of the component parts of the site are now being identified, prioritised and addressed so that these significances can contribute to informing the future conservation management of the site.

5.5 The Northumberland should be managed to sustain its values

- 5.5.1 Changes to the *Northumberland* are inevitable and it is acknowledged that all wreck sites are vulnerable simply because of the nature of their environment.
- 5.5.2 Action taken to understand natural changes will be proportionate to the identified risks and sustainable in the long term.
- 5.5.3 Intervention that causes limited harm to the values of a place may be justified if it increases understanding of the past, reveals or reinforces particular heritage values, or is necessary to sustain those values for future generations, so long as any harm is decisively outweighed by the benefits.
- 5.5.4 Geophysical surveys and diver observations have all identified significant areas of sediment loss on the site. This has been exposing new material, which is vulnerable and at risk from biological and physical decay. Recent trends show the site continues to be under threat from sediment loss (PA 2017, 2018a, 2018b, 2018c) and therefore the future prognosis is that unless there is some form of intervention then material will continue to deteriorate and eventually be lost.
- 5.5.5 Highly dynamic environmental process of the Goodwin Sands can cause drastic movement of seabed sediments. There has been no evidence that the physical conditions of this process can be stabilised. Instead, strategic excavation should be considered in areas at risk and where new information can be gained.
- 5.5.6 However, until a research agenda is agreed for excavation, work should continue to record the changes in *Northumberland's* environmental setting as set out in Section 4.7:
 - Regular geophysical surveys should continue to record changes in sedimentation on the site and to track the movement of sand banks over the Goodwin Sands. This will build up a picture of environmental changes occurring over time and determine which areas will be most at risk;
 - There is a need to understand the biological decay occurring on the exposed parts of the wreck and the rate at which this is happening. This

will be understood when the wood sample panels are retrieved from site; and

- Continued updating of plans of the entire site, which would provide the basis for future monitoring of sand levels on the site.
- 5.5.7 A formal programme of assessment and monitoring is proposed. It will continue to assess and plan the site and further MBES surveys will monitor the changing seabed levels.

Management Policy 5 We will seek to undertake a programme of environmental monitoring to better understand the seabed dynamics and sediment levels on the site.

Management Policy 6 We will seek to undertake a programme of targeted recording of exposed archaeological remains.

Management Policy 7 Disturbance of the seabed will be avoided in order to minimise the risk of damage to buried archaeological remains.

Management Policy 8 If site monitoring indicates that the site is destabilising, due to loss of seabed sediments, resulting in significant archaeological remains being lost, then a programme of staged archaeological worked should be considered subject to the submission of a suitable project design.

6 FORWARD PLAN

6.1 Introduction

6.1.1 In order to commence the implementation of the proposed management policies outlined in Section 5, Pascoe Archaeology is proposing a range of projects that will increase our understanding of the value and setting of the *Northumberland*. These projects are outlined below.

6.2 Proposed Projects in relation to the *Northumberland*

- 6.2.1 **Removal of hazardous ghost netting.** In 2018 large amounts of fishing gear were found entangled on areas of exposed wreckage with much of it floating above the seabed (PA 2018). This is a serious entanglement hazard to divers, especially when the underwater visibility is poor. The net is also a hazard to the archaeology and has already damaged an assemblage of concreted swords and the large copper vessel (PA 2018, 12). The net is also obscuring the archaeology and hindering further recording and identification. The net is, therefore, both a risk to divers and the archaeology. To be able to conduct any further archaeological investigations safely, and to provide safe access to site for visiting divers, PA strongly recommends removing the dangerous netting as soon as possible.
- 6.2.2 Site monitoring through Multi-Beam Echo-Sounder survey (MBES). The 2018 archaeological assessment of the site identified new and significant archaeology on the surface and demonstrated the potential for a lot more beneath the sand (PA 2018). Should the seabed sediments continue to reduce on the site then further material will be exposed and at risk. Back-to-back MBES surveys in 2017 and 2018 clearly identified the mobility of seabed sediments, both on the main site and within the wider designated area. Due to the known metre to decametre movement of seabed sediments on the Goodwin Sands (Dix *et al* 2009: 51-2) the installation of sediment monitoring poles would not be a reliable method for monitoring changes to the topography of the main wreck site and the wider designated area is to conduct regular MBES surveys. This was previously demonstrated with the Great Storm wrecks on the Goodwin

Sands during the Rapid Archaeological Site Surveying and Evaluation (RASSE) project where it concluded:

'The RASSE project has demonstrated that acoustic techniques can be used to investigate and monitor marine archaeological sites with the resolution necessary to quantitatively evaluate small changes on a site that ultimately could lead to deterioration' (Bates et al 2007).

- 6.2.3 Surveys such as those under the RASSE project and the PA 2017 and 2018 surveys have provided a rapid and complete understanding of the sediment levels and extent of exposed archaeological remains at those given times. These types of surveys also greatly assist diving activities and direct the archaeologists to the most vulnerable and key areas of the site for detailed recording and assessment. With the proposed dredging of the Goodwin Sands to supply the Port of Dover with aggregate, it is important to monitor the condition of the *Northumberland*. As the site is in a region experiencing seabed erosion, any permanent loss of seabed sediments on the Goodwin Sands could potentially have a negative impact on the site. By being proactive and undertaking this work now, a better understanding of the whole extent of the archaeology can be identified, enabling rapid reaction to threats before it is too late.
- 6.2.4 **Sub-bottom geophysical survey.** It is clear from previous investigations that there is high potential for well-preserved archaeological remains beneath the current level of seabed. However, the actual depth and the extent of the archaeological remains below the seabed is poorly understood. PA recommends a sub-bottom geophysical survey to establish this, which will help predict areas that might expose next and to what extent. This will help inform future management strategies and focus diver monitoring on the site. Sub-bottom surveys have been proven successful on sites such as the *London* for enhancing the understanding of depth of stratigraphy and aiding the site management strategies.
- 6.2.5 **Continued field assessment.** The detailed survey that commenced in 2018 should be completed. Continued survey should be pursued using the same methodologies as adopted by PA. This will involve the ground-truthing of

exposed anomalies identified in the multi-beam datasets, as well as recording through video, photography, drawing and photogrammetric surveys of key archaeological features. In addition, collection of pH readings from the seabed and biological trial test pallets for analysis.

- 6.2.6 Accessibility: Virtual dive trail. Following the completion of proposed fieldwork an interpretive platform in the form of a virtual dive trail will be provided. This will provide access to the site for a wider audience, catering for the diving and non-community.
- 6.2.7 **Dendrochronological analysis.** There are three important reasons to conduct dendrochronological analysis on the Northumberland. Firstly, to try and establish without doubt that this is in fact the wreck of the Northumberland. At present the only known identifying evidence to be recovered from the wreck are pewter plate(s) baring the same initials as the Captain, James Greenway. PA would suggest this evidence on its own is not sound enough to confirm with any degree of certainty the identification of the wreck. Therefore, the site could in fact be the *Restoration* and the current site known as the *Restoration* could be the Northumberland. Dendrochronological analysis from the structural remains of the sites would potentially confirm the identity of these wrecks. It would do this by identifying when and from where the timbers were sourced to construct these ships; the Northumberland was originally constructed away from the Royal Dockyards at a merchant building yard in Bristol and the Restoration was originally built at Harwich. Although the Northumberland was rebuilt at Chatham, sound timbers from the original construction in Bristol may have been reused, and therefore still survive on the wreck. In the construction of the royal ships, timber was typically sourced, but not restricted to, the three royal forests: the Forest of Dean, the New Forest and Alice Holt forest (Pool 1966: 22). As the Forest of Dean is the closest timber source to Bristol, it is a possibility that timbers for the Northumberland were sourced from the Forest of Dean. The only known account referencing the sourcing of the timber for the Northumberland comes from a letter of William Bagwell, the overseer for the ship's construction, in which he states that "Mr. Baylie has gone into the country to buy timber and plank" (TNA ADM 106/321/11). Unless new historical information comes to light

the only way to identify the sources of the timbers would be to conduct dendrochronological sampling.

- 6.2.8 The second reason to conduct dendrochronological analysis would be to identify the different phases of construction. There are at least three recorded constructional phases during the life of the *Northumberland*. Phase one during its original construction in Bristol, in 1679; phase two when major repairs were made in 1684; and phase 3 during the ship's rebuild between 1699 and 1702 at Chatham. These phases of construction are reasonably well documented but as Keith Muckelroy pointed out, the remains on the seabed identify what actually existed, rather than what was believed to exist (Muckelroy 1978, 215). Therefore, there can be no substitute for the investigation and analysis of the archaeological remains on the seabed.
- 6.2.9 The third reason to conduct dendrochronological analysis would be for a wider multi-disciplinary study, incorporating all the wrecks of the Thirty Great Ships, combining historical research, archaeological observations and wood science. The Thirty Great Ships building programme of 1677 was the largest and most ambitious of its time. The pressures to complete these ships exacerbated difficulties in timber supply. This led to commissioning of private yards, such as the building of the *Northumberland*, but also the acquiring of timber from all over the country and even imported from abroad (Pool 1966, 22-26). The analysis of as many of the Thirty Great ships wrecks as possible would provide insight into how the challenge of such a large building programme was overcome and what compromises were made, including the use of imported timber as it was more expensive due to lack of dealers which increased the prices (Pool 1966, 26). If timbers relating to the original construction can be identified then the analysis of the *Northumberland* timbers could act as proof-of-concept and, if successful, lead to a larger project of all the other wrecks of the Thirty Great Ships.
- 6.2.10 **Archival research.** Archival research should be undertaken in line with the all of the abovementioned investigations and survey. Archival research will include investigations into the wrecking event, including, but not limited to identifying the accounts of the survivor of the *Mary*, who supposedly came aboard the *Northumberland* after the wrecking of the *Mary* (see section 2.1). If

this story is true and accounts survive it might be possible to understand the wrecking event, in line with archaeological evidence, more clearly. It has also been demonstrated above that the *Northumberland* was only identified based on the pewter plate presumed to belong to Captain James Greenway. Investigation of archived muster rolls and ship logs can indicate if there were other crew members with the initials J.G. from the other warships wrecked during the Great Storm.

7 IMPLEMENTATION

7.1 Consultation

- 7.1.1 This document has been internally reviewed by Historic England.
- 7.1.2 The *Conservation and Management Plan* for the *Northumberland* shall be circulated for a four-week stakeholder consultation to refine how the values and features of the *Northumberland* can be conserved, maintained and enhanced. Responses to the consultation will be considered and the *Plan* revised as appropriate.

7.2 Adoption of Policies

- 7.2.1 Following consultation, the *Plan* was adopted in [date].
- 7.2.2 A programme that identifies a realistic timescale for implementing the *Plan*, considering those areas which need immediate action, those which can be implemented in the medium or long term, and those which are ongoing will be devised.
- 7.2.3 Responsibilities for implementation lie with Historic England, though consultation with stakeholders will be maintained throughout. In addition, provision will be made for periodic review and updating the *Plan*.

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9 AUTHORSHIP AND CONSULTATION

9.1 This Conservation Statement & Management Plan for *Northumberland* has been prepared by:

Rebecca Ferreira Sub-contracted by Pascoe Archaeology

rlf2g13@southamptonalumni.ac.uk

Daniel Pascoe Director of Pascoe Archaeology

pascoe.archaeology@outlook.com

- 9.2 The following individuals and organisations were invited to comment on the *Plan*:
 - Robert Peacock, Previous Licensee
 - Margaret Symonds, Isle of Thanet Archaeology Society
 - The Goodwin Sands Conservation Trust
 - Historic England
 - Kent and Essex Inshore Fisheries and Conservation Authorities (IFCA)
 - Kent County Council Heritage Conservation Group
 - Natural England
 - Ramsgate Coastal Community Team
 - Ramsgate Heritage Action Zone (HAZ)
 - Ramsgate Town Council
 - Thanet District Council
 - The Crown Estate
 - The Ministry of Defence, owners
 - The National Museum of the Royal Navy
 - The Nautical Archaeology Society
 - The Ramsgate Society
 - Professor Dave Parham, Bournemouth University