

Rochford District Council – Review of the Evidence relating to the presence of HMS Beagle at Paglesham Eastend, Essex

Dr Julian Whitewright
Centre for Maritime Archaeology, University of Southampton

Summary

HMS Beagle is often noted as being one of the most significant ships in history because of its conveyance of Charles Darwin between 1831 and 1836, and his subsequently developed theory of evolution. The ship's commander on that voyage, Robert Fitzroy, also made important developments in relation to meteorology that are associated with his time in command of the vessel. The physical remains of HMS Beagle, if located, would be of international significance because of their association with Darwin, and to a lesser extent Fitzroy.

In 2003 a research team based at St Andrews University and led by Dr Robert Prescott began the archaeological investigation of a former mud berth on the banks of the river Roach in Essex where the remains of the ship were thought to lie. Geophysical investigation purported to show the buried extent of the lower hull of the ship that had been left in Situ following its breaking up in 1870. Prior to this, the vessel had been stationed at the site as a coastguard watch vessel between 1851 and 1870, sediment samples were recovered for the purpose of Diatom Analysis with the hope of providing a link with the Pacific and Australian locations that the Beagle had visited during its voyages. Despite much press coverage of the investigation into the potential remains of the vessel no final result of analysis have been forthcoming. Dr Prescott and St Andrews University do not hold any material relating to the former project.

This review has been undertaken at the request of Rochford District Council because of their interest in the longer term potential of the site, its remains and the story of the Beagle for public education and enjoyment. With that in mind, the ship's known career, associated historical documentation, and previous archaeological investigation of the proposed site of the ship's remains have been reviewed with the aim of establishing whether or not the remains of HMS Beagle are located at Paglesham Eastend. Historical evidence indicates that the vessel certainly ended its career at that location, and that the mud berth of the ship between 1851 and 1870 is known with some certainty. Geophysical investigation undertaken by Prescott's team indicates an anomaly within the mud berth. But the lack of final analysis and publication of that work means that identification of material as the remains of HMS Beagle is currently based on historical circumstance rather than archaeological certainty.

1 Introduction

This document is a response to a request by Rochford District Council (RDC) to the centre for Maritime Archaeology (CMA) at the University of Southampton for an expert review into the likelihood of the remains of the hull of HMS Beagle being present at Paglesham Eastend, on the river Roach, Essex. To this end, the ship's known career, associated historical documentation, and previous archaeological investigation of the proposed site of the ship's remains have been reviewed by the CMA with the aim of answering the following primary question:

- Have the remains of HMS Beagle been located at Paglesham Eastend?

For ease of reviewing the available evidence three further questions have been identified that relate to historical and archaeological evidence respectively:

- (1) Did HMS Beagle finish her career at Paglesham Eastend?**
- (2) Is the proposed location of HMS Beagle's remains correct?**
- (3) Are there archaeological remains at that location, and are they from the Beagle?**

Finally, as a wider discussion to this, consideration is given to the extent of the ship's remains that might be expected to survive, and how these might best be archaeological elucidated.

The review begins by outlining the known history of the Beagle and associated historical documentation in order to answer question 1 and 2 above. This is followed by an assessment of the archaeological work done at the site as a means to answer question 3.

A number of documents have been supplied to the CMA by RDC relating to previous work on the vessel and proposed location of remains. These documents can be summarised as follows:

Name	Origin	Content
RDC_01	English Heritage	<ul style="list-style-type: none">• Summary of application assessment for statutory protection of proposed beagle site.• Emails between EH and RDC with reference to protection of the site.
RDC_02	RDC/St Andrews	<ul style="list-style-type: none">• Freedom of information request to St Andrews University.• Background info on the diatom analysis undertaken.
RDC_03	Robert Prescott	<ul style="list-style-type: none">• Presentation slides outlining the Beagle project, including results of ADR survey

Name	Origin	Content
RDC_04	Robert Prescott	<ul style="list-style-type: none"> Background information on ADR survey and method
RDC_05	RDC	<ul style="list-style-type: none"> Site Location and emails confirming land ownership.
RDC_06	RDC	<ul style="list-style-type: none"> Selection of press coverage of the Beagle project.
RDC_07	RDC	<ul style="list-style-type: none"> Selection of photos of the proposed Beagle site.

Although providing RDC with a research service, the CMA has not charged a fee for the review of evidence undertaken.

2 HMS Beagle

Vessel History

The underlying biography of HMS Beagle is well documented on the basis of Admiralty records and that information, as collated by Winfield (2014: 240) is summarised here. The Beagle was one of 115 Cherokee class brigs, designed by Peake, and ordered between 1807 and 1830. The initial order in 1807 was for 36 ships with a further 19 (including Beagle) ordered from 1817-1830. The overall class itself is of significance as the largest group of sailing warships built to a single design (Winfield, 2014:229). The later order (including Beagle) was modified by Seppings from the earlier one by to include diagonal bracing within the hull, and slightly raised bulwarks at the stem and stern HMS Beagle itself was ordered on the 13th June 1817, the keel was laid at Woolwich dockyard in June 1818 and the vessel was launched in the 11th May 1820, with completion following on the 19th July 1820 for the coronation of King George IV. The Woolwich yard had built two brigs of the Cherokee class at the same time, the other, named Barracouta, was launched on 13th May 1820. The Beagle's original construction cost £7,803 and the critical dimensions of the hull (as built) were:

Length of Gundeck: 90' (27.45m)

Length of Keel for tonnage: 73' 7 5/8" (22.45m)

Breadth: 24'8" (7.5m)

Depth: 11' (3.35m)

Draught: 7'7" (forward) (2.35m), 9'5" (aft) (2.9m)

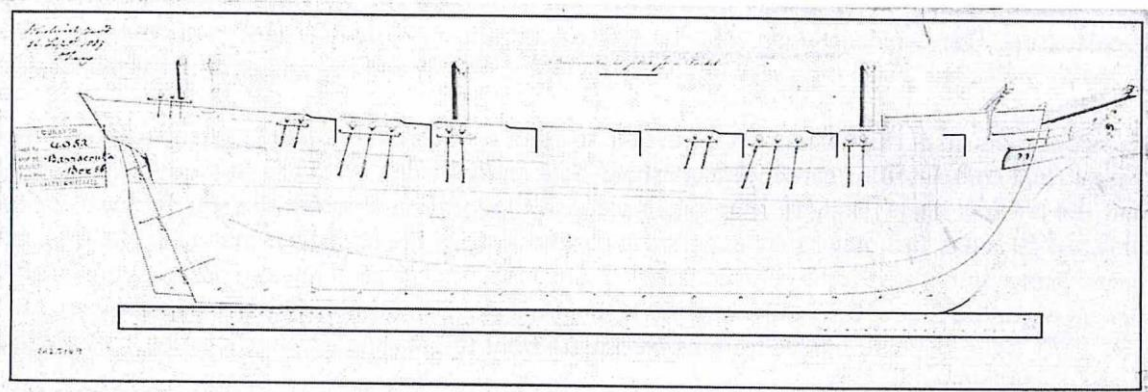
Tonnage: 235 10/94 bm.

Rochford District Council – Review of the Evidence relating to the presence of HMS Beagle at Paglesham Eastend, Essex

The Beagle was re-fitted at a cost of £5,913 as a survey ship between 27th September 1825 and 16th March 1826 during which she was sheathed with wood, re-coppered and re-rigged as a barque. In that form she was commissioned under Commander Pringle Stokes and sailed for South America on the 22nd May 1826, returning home on the 14th October 1830 to be paid off at Plymouth on the 27th October.

The Ship's second survey voyage was preceded by a further fitting out at Plymouth between July and November 1831, at a cost of £7,583, before sailing for South America on the 27th December 1831 under the command of Robert Fitzroy, and carrying Charles Darwin as naturalist. The Beagle returned home from that voyage on 2nd October 1836 and was paid off at Woolwich on the 17th November.

The Beagle was re-commissioned on the 16th February 1837 under the command of John Clements Wickham and sailed for South America and the Australia on the 5th July 1837. The ship returned from that voyage on the 8th October 1843, by that stage under the command of John Lort Stokes, and was paid off at Woolwich on the 14th October 1843. The vessel was then fitted for coastguard service between 14th June and the 11th July 1845 and transferred to Paglesham, where she was renamed as Watch Vessel No.7 1 on the 25th May 1863. The ship was finally sold for breaking up on the 13th May 1870 to Murray and Trainer for a fee of £540.



Profile plan of HMS Barracouta, sister-ship to HMS Beagle and built alongside her at Woolwich. Both vessels would have been originally built to the same Admiralty plans for a Cherokee class vessel (image copyright: National Maritime Museum ZAZ5149).

3 Historical Investigation

As well as the service history of the Beagle, the historical archive associated with the ship contains a range of material that widens our understanding of the vessel, its career, and eventual fate. These include external and internal plans of the hull of the ship, or wider class that Beagle was part of, Sail-plan, paintings of the vessel in service, records of crew, location as watch vessel no.7, details of coastguards posted to the ship, and nature of the disposal of the vessel.

This extremely rich material allows a highly detailed picture of the ship to be painted from historical perspective. Consequently, understanding of the vessel's size and construction is clearly established, its voyages and destinations well recorded, and career as a watch vessel well recorded. It should also be noted that the extent of the historical record associated with the ship also greatly enhances its overall significance

as a heritage asset, on the grounds of ‘documentation’ (HE, 2012a:9). More importantly for this review, it allows Question 1 and 2 to be directly addressed.

The historical documentation establishes three key facts about the later career for the Beagle. Firstly, that it was transferred to Coastguard service and renamed as watch vessel No.7 (WV7). Secondly, that WV7 was stationed at Paglesham and was originally moored in the centre of the river Roach, with its position recorded on a hydrographic chart of 1847, prior to being moved to the river bank in 1851 because the ship was obstructing the local oyster fishery. Continued association with Paglesham, combined with the presence of a terrestrial watchhouse on later OS maps, indicates movement to the north bank of the river. Thirdly, following 19 years as a static vessel the ship was sold to ‘Messrs Murray and Trainer’ for breaking up. Further circumstantial evidence for the breaking up of the ship lies within the 1871 census that records the construction of a new farmhouse by William Murray and T.Rainer. It has been assumed by previous investigators that Murray and Rainer used timbers salvaged from the Beagle for the construction of that farmhouse and that the name of the latter was merged from T.Rainer to Trainer in the records of the sale of the vessel.

Question 1. Did HMS Beagle finish her career at Paglesham?

The historical evidence outlined above is critical for answering the question of whether or not HMS Beagle ended her career at Paglesham? Documentary sources clearly indicate that the vessel was stationed at Paglesham following transfer to Coastguard service in 1845, after completion of its third survey voyage in 1843. It is equally clear that the ship was initially moored in the centre of the river, before being moved to the bank, almost certainly the northern one, in 1851 and re-purposed as a static station. The ship was used in this way for nearly twenty years before being sold for breaking up. The two individuals who bought the ship in 1870 built a new farmhouse in 1871, probably indicating that the vessel was broken up where she lay and the timber re-purposed locally.

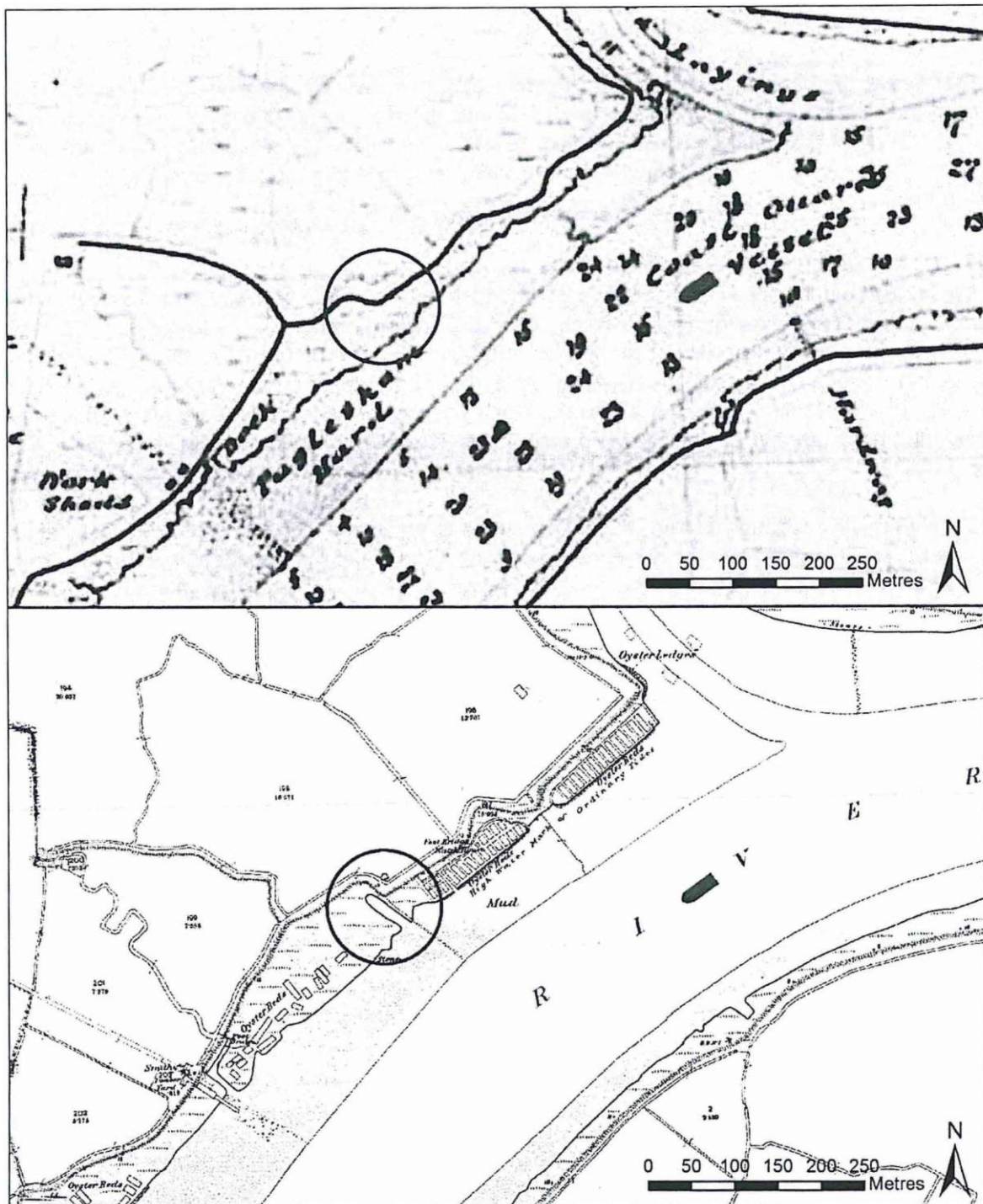
As a consequence of this evidence it is possible to state with certainty that HMS Beagle, later watch vessel no.7 completed its career at Paglesham. Sale and breaking up of the ship took place locally, and the latter is highly likely to have taken place in the location in which the ship had lain for the previous 19 years. This may have happened in part because of the difficulties in moving the ship, and because the timber was to be re-used locally in any case. Therefore, if any physical remains of HMS Beagle are to be found, then they most likely lie in the location occupied by the ship between 1851 and 1870. If the ship was moved from its mud berth prior to breaking up, then locating its remains is probably an impossible task.

Question 2. Is the proposed location of HMS Beagle’s remains correct?

The project based at St Andrews University in the early 2000’s led by Dr Robert Prescott located a site on the northern bank of the river Roach as the likely mud berth used by the Beagle in between 1851 and 1870. This area was identified during foreshore survey because for the presence of pottery fragments from the period that had been recorded and collected by local resident Anne Boulter. This is the same area identified in the initial assessment of the site for protection undertaken by English Heritage in 2011. Emails associated with this process between Historic England (HE) and RDC in August 2015 (RDC_01) note that HE ‘were confident in our determination of the location of the vessels’ mud berth’. The location

Rochford District Council – Review of the Evidence relating to the presence of HMS Beagle at Paglesham Eastend, Essex

of the Beagle while berthed on the north side of the river Roach between 1851 and 1870 is therefore agreed upon by a number of different parties.



Location of watch vessel No.7 (Solid shading) and mud berth (circled) at Paglesham Eastend. Top: Hydrographic Chart of 1847 (map image supplied by RDC). Bottom: 1873 (1st edition) OS map (map courtesy of EDINA Historic Digimap Service, <http://digimap.edina.ac.uk>). The mud berth is not shown in 1847. The Coastguard vessel is not shown in 1873, but the shore watch house is.

This mud berth in the river bank is clearly visible on 1st edition OS mapping from the 1870s and is much more pronounced indent into the bank than visible on modern mapping. It lies slightly upstream of the terrestrial watch house that replaced WV7, and measures c.55m in length and 11m in width. Such dimensions would easily have accommodated the Beagle. Critically, the mud berth is not shown on the 1847 hydrographic chart, indicating its probable creation after that date, but before 1870. The movement of the Beagle from the centre of the channel to that location on the north bank is the most plausible explanation for this.

The weight of the available evidence therefore indicates that the Beagle finished its career at Paglesham Eastend as WV7, that it was housed in the mud berth on the north bank of the river, and that the location of that mud berth is identified. Whether the vessel was moved from the mud berth prior to breaking up can only be answered through direct archaeological evidence, which can now be addressed.

4 Archaeological investigation

The findings outlined above in relation to question 1 and 2 are not new. This review has reached the same conclusion as Prescott's team in the 2000s and English Heritage in 2011 regarding the most likely location for the remains of the Beagle. Attention can now be turned to the third question; whether or not any archaeological remains are located at the site, and whether or not they are the remains of the Beagle. To do this a review of the evidence arising from the archaeological work at the mud berth site by the St Andrews project is provided below, along with discussion relating to question 3.

Geophysical investigation of the mud berth site was undertaken by Prescott in 2003 with the intention of identifying any the presence of surviving elements of the vessel's hull within its former mud berth. Data made available to this review via RDC indicate that methods included magnetometry, ERT and GPR. Much mention was made in press coverage of Atomic Dielectric Resonance, although no results of such method are present within images of the processed data. The results of geophysical survey purported to show that a large section of the ships bottom and lower hull was still in place, and interpretation of the data showed that the shape of the surviving hull was discernible and intact. The exactness and accuracy of this interpretation, based on the available data, has been questioned by a number of geophysical experts within Archaeology and Oceanography at the University of Southampton. In particular, the apparent depth of remains shown in the GPR plot stretching between 2m and 9m when compared to the original total possible extreme height of the ship of 6m, prior to any hull-breaking activity. Communication with those involved in the geophysical survey is on-going and may shed further light on the methods and results, over and above material supplied to RDC. But, while the interpretation of results from this method may be open to question, a large anomaly does appear to lie within the mud berth.

Following the identification of this anomaly a number of sediment cores were taken from the site with the intention of extracting material from the bilges of the vessel (RDC_02). The objective of this work was to allow analysis of any diatoms within bilge material, and to identify those that may have their origins in South American or Australian waters. It was acknowledged that such results would be conclusive proof that the remains were that of the Beagle. But the combination of diatom origins, with the wider site location and historical corroboration would act in strong combination to further reduce with the probability that the remains were not those of the Beagle. Despite widespread reporting in the press of the recovery of samples, no results of the diatom analysis have been published, and enquiry by

RDC with St Andrews was unable to find any further information. Further enquiry was undertaken as part of this review, resulting in clarification (via email) from Prof. David Paterson (St Andrews) that no actual analysis had taken place. Prof. Paterson confirmed that his work had simply established that diatom analysis could be conducted on samples for the site, if required. As such, no evidence from the sediment cores exists that can contribute to the identification of the archaeological material at that site.

Archaeological investigation also took place in the wider area surrounding the site. This focussed on a number of Admiralty pattern anchors residing in the vicinity of Paglesham Eastend and buildings containing re-used ship's timber that were potentially from the Beagle. Regarding the former, analysis of record remains indicated it corresponded to an 1841 anchor pattern and so could have been fitted to the vessel when it was re-assigned to Coastguard service in 1845. Two further anchors of the same pattern were recorded in neighbouring villages. It is entirely feasible that all of these anchors originated on the Beagle and were rehomed in the area when the ship was broken up. Reused ship's timbers were recorded in a boathouse near to the farmhouse constructed in 1871 by Murray and Rainer. The latter is assumed to have been built from the Beagle timbers, but has since been demolished, with possible secondary reuse in the boathouse. Further elements of the broken-up ship are reported to have been incorporated into the belfry of All Saints Church Sutton, in the late 19th century.

Question 3. Are there archaeological remains at that location, and are they from the Beagle?

The weight of the evidence available to this review indicates that the mud berth site that was used by the Beagle between 1851 and 1870 contains substantial archaeological remains of some description. The geophysical anomaly identified within the mud berth through survey in 2003 has been interpreted as the lower hull of a wooden ship. The presence of the lower elements of the hull corresponds with our current understanding of in situ ship-breaking practices. Other elements of the ship appear to have been re-used in various buildings in the locality, although substantiation of such reuse is still required. But, as noted above, the interpretation of survey results has been questioned, especially in relation to the depth of remains, our records of the original vessel, and understanding of morphological changes within the Mud-Berth since 1870.

The nature and identification of the structural material contained within the mud berth is still unclear from the available evidence. A plausible answer is that such material relates to the lower hull of HMS Beagle. But, there is currently no firm material evidence to support this, and such an interpretation is largely founded on historical circumstance.

Accordingly, at the present time and on the currently available evidence it can be observed that there are probably archaeological remains within the mud berth used by HM Beagle, but that a confident identification of those remains as the surviving hull of the ship itself cannot currently be stated. Only through further direct archaeological investigation, analysis and dissemination would it be possible to substantiate the claims that the remains of the ship lie at Paglesham Eastend.

5 Conclusion

This review has revolved around addressing three questions that are central to our understanding of the identification of the purported site of HMS Beagle at Paglesham Eastend in Essex. These were:

- (1) Did HMS Beagle finish her career at Paglesham Eastend?
- (2) Is the proposed location of HMS Beagle's remains correct?
- (3) Are there archaeological remains at that location, and are they from the Beagle?

On the balance of the evidence supplied to this review, the answers to these questions appear to be as follows. That HMS Beagle did finish its career at Paglesham Eastend and that the probable location of the vessel's mud berth between 1851 and 1870 has been correctly identified. This mud berth is the main candidate for the site on which the vessel was broken up, following its sale in 1871. Archaeological investigation undertaken thus far indicates that archaeological remains appear to be present within the mud berth. It is not possible to formulate a conclusive identity for those remains, but, the balance of the historical evidence points to HMS Beagle being the primary candidate.

It may also be noted that if the mud berth anomaly was demonstrated to be the probable remains of HMS Beagle then it would be of considerable significance. From an historical perspective the vessel is internationally important for the role it played in the careers of both Charles Darwin and Robert Fitzroy. The archaeological remains of the ship would be highly symbolic as a result of such connections and the iconic status that the vessel has developed because of its world changing voyages of exploration. Moreover, the structural remains of the ship would also be of national importance within the UK as a record of the largest class of sailing warship built by the Royal Navy, for which there are no surviving archaeological documented or extant examples in UK waters. Finally, the role of the ship as a coastguard vessel is often overlooked in favour of its status as 'Darwin's Beagle', work by Historic England (2012B) has sought to re-establish the need for a wider and informed understanding of the Coastguard service and its associated archaeological remains, of which Watch Vessel No.7 was an important part.

Clarification of the exact nature of archaeological material within the mud berth site at Paglesham Eastend seemingly requires further direct archaeological investigation. Such work has the potential to establish the extent of remains within the mud berth, to allow the dating of such remains, and to inform upon their relationship, or not, with HMS Beagle. Doing this would go some way to fulfilling the high level of potential significance that such remains would have.

References

HE, 2012a. Ships and Boats: Prehistory to Present. Designation Selection Guide. London: English Heritage.

HE, 2012b. Introduction to Heritage Assets: Coastguard Stations. London: English Heritage.

Winifield, R., 2014. British Warships in the Age of Sail 1807-1863. Design, Construction, Careers and Fates. Barnsley: Seaforth Publishing.