Archaeological Services in Relation to Marine Protection

'The Fog Wreck' Weymouth

Undesignated Site Assessment

Ref: 108280.28
November 2016

wessexarchaeology

Archaeological Services in Relation to Marine Protection

‘The Fog Wreck’
Weymouth

Undesignated Site Assessment

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Historic England

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Summary

Wessex Archaeology was commissioned by Historic England to undertake an undesignated site assessment of 'the Fog Wreck', Weymouth. The site was first discovered by The Shipwreck Project during prospective geophysical survey in 2015, and The Shipwreck Project subsequently undertook a number of dives on the site in 2015 and 2016 in order to explore the material on the seabed.

'The Fog Wreck' is a previously unrecorded shipwreck site, located at the south-western tip of St. Alban's Ledge, Dorset. It comprises a group of four cannons, with an anchor located approximately 87 m to the south-west. The site lies at a depth of approximately 26 m (LAT).

Wessex Archaeology worked closely with The Shipwreck Project for this assessment. The Shipwreck Project provided geophysical, photographic and video data for the assessment, considerable local knowledge about local conditions and the site itself, and also provided their dive boat, *Wey Chieftain IV*. The geophysical data were processed by Wessex Archaeology, and all data from this project will be shared with The Shipwreck Project. The assessment was also informed by 2D orthophotos of the cannons and anchor, provided by Simon Brown.

An underwater diver survey of the material on the seabed was carried out by Wessex Archaeology over five days in July and October 2016. Key features on the site were positioned using diver tracking, measured with tape measures, and photographed with still and video cameras. Due to the depth of the site and limited bottom times, the survey concentrated on the features that were most likely to provide diagnostic information – the two large cannons and the anchor. Limited intrusive investigation was undertaken on one cannon, following approval of the methodology by Historic England.

All of the artefacts are heavily concreted, which makes it difficult to fully assess them and to provide an established date for the site. Additionally, the intrusive investigation of the possible breech loader was inconclusive. The anchor is lightly built and appears to be relatively early, but a later date cannot be ruled out. Overall, the site is likely to date within a broad range of 16th to early 19th century. Because of the broad date range, it has not been possible to suggest a possible identification for the wreck, or to prove or disprove the working hypothesis of The Shipwreck Project.

Risk assessment using the methodology set out by Historic England indicates that this site is at **high risk**, as a broken part of the anchor shank that was visible in the 2D orthophoto from Simon Brown was no longer on the site in October 2016.

The wreck is of archaeological interest, however, it does not currently, in the opinion of Wessex Archaeology, meet the criteria for designation under the Protection of Wrecks Act 1973 and no formal management is recommended. However, Historic England may wish to encourage The Shipwreck Project to continue to monitor and investigate the site.

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Undesignated Site Assessment

Acknowledgements

Wessex Archaeology was commissioned by Historic England to undertake an undesignated site assessment on 'the Fog Wreck', Weymouth. The assistance provided by Mark Dunkley, Alison James and Hefin Meara is gratefully acknowledged.

This project would not have been possible without the support of The Shipwreck Project, and their collaboration has been invaluable. Wessex Archaeology would like to thank, in particular, Grahame Knott and Richard Bright-Paul for providing geophysical data for the site, information about the site including the site location, and for their assistance during diving operations on board the *Wey Chieftain* IV, as well as their considerable local knowledge, past experience and understanding of the site.

Wessex Archaeology is also grateful for information and assistance provided by the following:

- *National Record of the Historic Environment, local wreck and casualty data;*
- *United Kingdom Hydrographic Office, local wreck data;*
- *Simon Brown, 2D orthophotos of the site; and*
- *Charles Trollope, independent ordnance expert, consultation.*

Wessex Archaeology would also like to thank the following who assisted with the diving fieldwork:

- *Richard Bright-Paul, The Shipwreck Project;*
- *Sue Boyd, The Shipwreck Project; and*
- *Jane Maddocks, BSAC Underwater Heritage Advisor.*

The assessment was carried out by a Wessex Archaeology team comprising the following:

- *Toby Gane, project management, QA and editing;*
- *Graham Scott, diving supervision;*
- *Paolo Croce, project officer in the field and archaeological diving*
- *Thomas Harrison, archaeological diving;*
- *Madeline Fowler, dive tender, archival research, and quality assurance;*
- *Andrea Hamel, project officer and reporting;*
- *Megan Metcalfe, archaeological assessment of geophysical data;*
- *Richard Milwain, GIS and data searches; and*
- *Kitty Foster, illustrations.*

'The Fog Wreck' Weymouth

Undesignated Site Assessment

1 INTRODUCTION

1.1 Assessment Background

1.1.1 Wessex Archaeology was commissioned by Historic England to undertake an Undesignated Site Assessment of 'the Fog Wreck', Weymouth. The work was undertaken as part of the Archaeological Services in Relation to Marine Protection (Diving) contract 2015-2017.

1.1.2 Following on from a successful joint project in 2015, 'the Fog Wreck' is one of three new sites that were brought to the attention of Historic England by The Shipwreck Project in 2016. The sites are considered to be worthy of designation assessment and provide an opportunity to continue to develop the partnership initiated in 2015 between Historic England, The Shipwreck Project and Wessex Archaeology.

1.1.3 The Shipwreck Project team discovered 'The Fog Wreck' site in 2015, and they have dived the site, which lies in approximately 26 m (LAT). Four cannons were identified on the seabed, including one possible breech loader, and an anchor. The initial investigation of the site by The Shipwreck Project suggested that it could date to the 17th century or earlier. In addition, there are a number of geophysical targets in the area that have not yet been explored, and could be related to the site.

2 ASSESSMENT AIMS AND OBJECTIVES

2.1.1 The overall aim of the project was an undesignated site assessment. Detailed primary and secondary objectives were specified in the Client Brief (Historic England 2015).

2.1.2 Following a preliminary data audit, the following staged methodology was adopted by Wessex Archaeology in order to achieve the overall aim of the project in the limited time available.

2.2 Primary Objectives

Stage 1 – pre-fieldwork

- *Contact The Shipwreck Project team, finders of the site, to assist with the identification of the site's location and participate in the undesignated site assessment, including the possibility of access to their geophysical survey data;*
- *Undertake a data audit comprising documentary research on each site as appropriate, including requesting data from the National Record of the Historic Environment (NRHE), Dorset Historic Environment Record (HER) and United Kingdom Hydrographic Office (UKHO), to inform designation assessment;*
- *Contact the Receiver of Wreck and Historic England to gain a list of droits relating to the sites;*

- *Undertake an assessment of any finds held by The Shipwreck Project;*

Stage 2 – fieldwork

- *Undertake a diver survey of the exposed remains. Confirm position, extent, stability and character (plotted by tracked diver survey) of the site;*
- *Locate and accurately position (plotted by tracked diver survey and probing where appropriate) any additional visual archaeological material;*
- *Undertake a diver survey to ground truth anomalies identified from any geophysical data supplied by The Shipwreck Project team (using tracked diver survey, probing and augering as appropriate);*
- *In agreement with Historic England, and if considered appropriate, accurately position and recover samples suitable for dendrochronological analysis, if suitable timbers are exposed, according to the brief protocols issued by the HE Scientific Dating Team (see Annex A of the Project Brief), and deliver them to Historic England on completion of site visit for further analysis to be coordinated by the HE Scientific Dating Team;*
- *Produce a structured record of field observations; preferably including a photographic record of the site as free from fauna as possible and a basic site plan. Key artefacts are to be subject to detailed examination and recording (position by tracked diver survey, taped measurements, photographs and video and written database entries).*
- *Undertake the collection of appropriate bed level pH values.*

Stage 3 – post-fieldwork

- *Review fieldwork results, including specialist finds and sample assessment;*
- *Further documentary research based on Stage 2 results, if required; and*
- *Review the site against the non-statutory criteria for Designation under the Protections of Wrecks Act 1973.*

2.3 Secondary Objectives

- *If possible (and without excavation) assess the likely depth of deposit on the sites, estimated by reference to the angle of any frames and the height of any ballast/cargo/artefact mound material;*
- *Supplement the recording of the core of the site by recording profiles across the main axis of the site; and*
- *Undertake second stage documentary research and a comparison of the site with any documentary evidence on the site as appropriate, to inform designation assessment.*

2.3.1 The recording level set in the Brief was Level 3a, whereby a diagnostic record is generated comprising 'a detailed record of selected elements of the site'.

2.3.2 The following products were specified in the Brief; this document is P2.

- *P1 – Archaeological Report (suitable for public release);*
- *P2 – Undesignated Site Assessment (confidential);*
- *P3 – Project archive/s compiled in accordance with current accepted standards; and*
- *P4 – Finds should also be logged appropriately with the Receiver of Wreck.*

3 METHODOLOGY

3.1.1 All fieldwork procedures and standards complied with the relevant guidance by the Chartered Institute for Archaeologists (CIfA; website accessed June 2015).

3.2 Data Audit

Introduction

3.2.1 A limited audit of existing primary and secondary sources relevant to the site location, condition survey, BULSI characterisation and particularly identification has been undertaken. This does not amount to a full desk-based assessment.

3.2.2 Data was requested from the following organisations:

- *Geophysical survey data from The Shipwreck Project;*
- *Marine Environmental Data and Information Network (MEDIN) bathymetric survey data;*
- *UKHO;*
- *NRHE;*
- *Dorset HER;*
- *Receiver of Wreck (RoW);*
- *The Shipwreck Project; and*
- *Simon Brown.*

Documentary Data

3.2.3 No data was available for this wreck from the UKHO, NRHE or Dorset HER. The wreck was discovered by The Shipwreck Project in 2015 and the lack of available records confirms that this is a previously unknown wreck site.

Geophysical Survey Data

Data Source

3.2.4 Sidescan sonar data were acquired by The Shipwreck Project on 9 February 2015. Data were supplied in both CMP and XTF format with the laybacks already applied. Data were acquired at a range of 50 m at a frequency of around 800 kHz using a C-Max sonar fish.

3.2.5 Bathymetric data were downloaded from the UKHO INSPIRE website. These data are made available under the terms of the Open Government License, in compliance with the 'Infrastructure for Spatial Information in Europe' (INSPIRE) initiative. The data were originally acquired by Fugro OSAE on behalf of the Channel Coast Observatory for the DORIS (Dorset Integrated Seabed Survey) project on the *MV Meridian.* The survey commenced 4 July 2008 and the data were supplied as GSF files.

Data Quality

3.2.6 Each geophysical dataset was assessed for quality and rated using the following criteria listed in **Table 1**.

Table 1: Criteria for assigning data quality rating

Data Quality	Description
Good	Data which are clear and unaffected by weather conditions or sea state. The dataset is suitable for the interpretation of standing and partially buried metal wrecks and their character and associated debris field. These data also provide the highest chance of identifying wooden wrecks and debris.
Average	Data which are affected by weather conditions and sea state to a slight or moderate degree. The dataset is suitable for the identification and partial interpretation of standing and partially buried metal wrecks, and the larger elements of their debris fields. Wooden wrecks may be visible in the data, but their identification as such is likely to be difficult.
Variable	This category contains datasets with the quality of individual lines ranging from good to average to below average. The dataset is suitable for the identification of standing and some partially buried metal wrecks. Detailed interpretation of the wrecks and debris field is likely to be problematic. Wooden wrecks are unlikely to be identified.

3.2.7 The sidescan sonar data have been rated as 'Average' using the above criteria. In general, objects on the seafloor were clearly imaged, however there was some evidence of poor weather conditions or sea state.

3.2.8 The multibeam bathymetry data have been rated as 'Good' using the above criteria. The data quality was found to be of a high standard and suitable for the archaeological assessment of seabed objects and debris.

Data Processing

3.2.9 The sidescan sonar data were processed by Wessex Archaeology using Coda GeoSurvey software. This allowed the data to be replayed with various gain settings in order to optimise the quality of the images. The data were interpreted for any objects of possible anthropogenic origin. This involves creating a database of anomalies within Coda by tagging individual features of possible archaeological potential, recording their positions and dimensions, and acquiring an image of each anomaly for future reference.

3.2.10 A mosaic of the sidescan sonar data is produced during this process, and the survey line smoothed to assess the quality of the sonar towfish positioning. This allows the position of anomalies to be checked and for the layback values to be refined if necessary.

3.2.11 The form, size, and/or extent of an anomaly is a guide to its potential to be an anthropogenic feature, and therefore of its potential archaeological interest. A single, small, but prominent anomaly may be part of a much more extensive feature that is largely buried. Similarly, a scatter of minor anomalies may define the edges of a buried but intact feature, or it may be all that remains of a feature as a result of past impacts from, for example, dredging or fishing.

3.2.12 The multibeam bathymetry data were analysed to identify any unusual seabed structures that could be part of the shipwreck or other anthropogenic debris. The data were gridded and analysed using Fledermaus software, which enables a 3D visualisation of the acquired data and geo-picking of seabed anomalies.

Anomaly Grouping and Discrimination

3.2.13 Once all the geophysical anomalies and desk-based information have been grouped, a discrimination flag is added to the record in order to discriminate against those which are not thought to be of an archaeological concern. For anomalies located on the seabed, these flags are ascribed in **Table 2**.

Table 2: Criteria for discriminating archaeological importance of features

Non-archaeological	U1	Not of anthropogenic origin
	U2	Known non-archaeological feature
	U3	Non-archaeological hazard
Archaeological	A1	Anthropogenic origin of archaeological interest
	A2	Uncertain origin of possible archaeological interest
	A3	Historic record of possible archaeological interest with no corresponding geophysical anomaly

Geophysical Description

3.2.14 Several possible items have been identified in the area surrounding the given location of the site referred to as 'the Fog Wreck' (**Figure 2**, **Appendix 4**). A dark reflector with a relatively angular shadow, measuring 1.6 x 0.6 x 0.4 m, was identified approximately 5 m SSW of the given position of the site (**7002**). A similar, relatively straight dark reflector, measuring 4.6 x 0.4 x 0.5 m, was identified approximately 15 m NW of the given location (**7000**). A straight, dark reflector, measuring 1.7 x 0.3 x 0.4 m, was identified approximately 80 m SW **(7001)** and two dark reflectors with slightly rounded shadows are observed approximately 170 m SE of the location **(7003**, **7004)**. It may be that these contacts are items of debris associated with 'the Fog Wreck' site, however due to the textured nature of the seabed it is possible that these are natural features.

3.2.15 The water depth at the given position of 'the Fog Wreck' site is -25.4 m LAT. The surrounding seabed appears to be slightly rippled, shoaling towards the north-west, with water depths in the surrounding area ranging from approximately -23 m LAT in the NW to -29 m LAT in the SE.

Previous Dive Survey Data

3.2.16 The Shipwreck Project team dived the site after its discovery during a geophysical survey in 2015.

3.2.17 In addition, The Shipwreck Project has provided dive survey photographs taken during three days of diving on the site, on 16 May 2016, 25 June 2016 and 25 July 2016. The work revealed that the site comprised four cannons and an anchor. The Shipwreck Project holds an archive of digital photographs and video of the site, and shared many photographs of the features.

3.2.18 Simon Brown, working with The Shipwreck Project, has produced detailed 3D models of the site, which can be viewed on Sketchfab. The models were produced in 2015. Note that these 3D models cannot be shared or embedded without permission from Simon Brown.

- *Fog Wreck iron cannon: https://sketchfab.com/models/ed5190b32d514bc199cc00d85d4a9b19;*
- *Fog Wreck cannon one: https://sketchfab.com/models/451cd9742d4e40ddaf980f4add55b89b;*
- *Fog Wreck cannon two: https://sketchfab.com/models/6cc7c3a976964da29506f5084e7c4d45; and*
- *Fog Wreck cannon three: https://sketchfab.com/models/38cceee0aec044349ac89d44a3d2f63b (all accessed 23/06/2016).*

3.2.19 For the fieldwork on 'the Fog Wreck', GIS overlay, the development of the site plan, and for inclusion in this report, Simon Brown generously provided 2D orthophotos derived from the 3D models.

3.3 Diving Survey, Sampling and Finds

3.3.1 Wessex Archaeology diving operations complied with the *Diving at Work Regulations 1997* and the associated *Scientific and Archaeological Diving Projects Approved Code of Practice (ACOP) and guidance* (HSE website, accessed June 2016). Diving operations were conducted during daylight hours only on a single shift system with a four-person team.

3.3.2 Diving operations were carried out from The Shipwreck Project's *Wey Chieftain IV*, a purpose-built coded dive support vessel (DSV) based in Weymouth. The Shipwreck Project are very familiar with the site, and the dive survey was planned with their advice, as their knowledge was invaluable with regards to local conditions and the location of the site.

3.3.3 The diving survey was carried out using SCUBA diving equipment, as it was not considered safe for the vessel to anchor at the site. Additionally, the divers used Nitrox gas mixtures to extend the bottom time of the dives, decrease the equivalent air depth and to limit the effects of nitrogen narcosis and thus increase efficiency working at depth.

3.3.4 Archaeological, environmental and observational data was recorded using Wessex Archaeology's proprietary real-time DIVA Microsoft Access recording system. Inspection and survey of the site was carried out visually, with diver positional data provided by a Sonardyne Scout USBL system. This position was displayed in DIVA's ArcGIS interface during the dive, layered onto a georeferenced geophysical survey image of the site. This enabled the diving supervisor to provide navigational information to the diver. The site was recorded with measurements, still photographs and video. Go Pros were mounted on the divers to provide additional video data.

3.3.5 An intrusive investigation of one of the cannons was undertaken, based on the methodology presented to Historic England in July 2016 (Wessex Archaeology 2016).

3.3.6 3D models and 2D orthophotos of the features on the seabed have been produced using still photographs or burst-captured stills from Go Pro video, in Agisoft Photoscan and Autodesk ReMake. The use of 3D models and 2D orthophotos provides a quick and reliable way to compare changes to the site over time, and can be used to build up a detailed site plan.

3.3.7 Fieldwork data not recorded by Wessex Archaeology has been integrated into the assessment; the source of the data is stated where applicable.

3.3.8 Features were labelled to reflect the names already provided by The Shipwreck Project and Simon Brown. For example, 'cannon one' has been labelled **WA1001**, to maximise compatibility.

3.3.9 No finds or samples were recovered.

3.4 Characterisation

3.4.1 The site has been both described and characterised. **Section 4** uses a recognised method of describing wreck sites. **Section 5.3** uses the BULSI scheme to provide a wider characterisation. This scheme presents site and contextual data as a vessel and site 'biography' under the following themes:

- *Build – the design and construction of the vessel;*
- *Use – the use of the vessel before it was lost;*
- *Loss – how the vessel was lost, including initial shipwreck site formation processes;*
- *Survival – what has happened to the site since, including subsequent site formation and modification processes and the current condition of the vessel; and*
- *Investigation – what is known about post-loss salvage and site investigation.*

4 RESULTS

4.1 Summary of Progress against Objectives

4.1.1 **Table 3** shows the progress that has been made against the fieldwork objectives presented in **Section 2**.

Table 3: Summary table

Objective	Progress
Stage 1 – pre-fieldwork	
Contact The Shipwreck Project team, finders of the site, to assist with the identification of the site's location and participate in the undesignated site assessment, including the possibility of access to their geophysical survey data	Achieved. The Shipwreck Project were involved in the pre-fieldwork planning and in the fieldwork execution. They shared their geophysical and photographic data of the site.
Undertake a data audit comprising documentary research on each site as appropriate, including requesting data from the NRHE, Dorset HER and UKHO, to inform designation assessment	Achieved. No data is available on the site from the NRHE, Dorset HER or UKHO.
Contact the Receiver of Wreck and Historic England to gain a list of droits relating to the sites	The Receiver of Wreck was contacted, however, no reply has been received at the time of writing.
Undertake an assessment of any finds held by The Shipwreck Project	Not required. No finds from this site are held by The Shipwreck Project.
Stage 2 – fieldwork	
Undertake a diver survey of the exposed remains. Confirm position, extent, stability and character (plotted by tracked diver survey) of the site	Partially achieved. Due to limited bottom time, the diver survey focussed on two cannons and the anchor, the features most likely to provide diagnostic information about the site.
Locate and accurately position (plotted by tracked diver survey and probing where appropriate) any additional visual archaeological material	Partially achieved. The two largest cannons and the anchor were positioned and recorded.
Undertake a diver survey to ground truth anomalies identified from any geophysical data supplied by The Shipwreck Project team (using tracked diver survey, probing and augering as appropriate)	Partially achieved. The two large cannons and the anchor were ground truthed.

Objective	Progress
In agreement with Historic England, and if considered appropriate, accurately position and recover samples suitable for dendrochronological analysis, if suitable timbers are exposed, according to the brief protocols issued by the HE Scientific Dating Team (see Annex A of the Project Brief), and deliver them to Historic England on completion of site visit for further analysis to be coordinated by the HE Scientific Dating Team	Not required. No timber is visible on the site.
Produce a structured record of field observations; preferably including a photographic record of the site as free from fauna as possible and a basic site plan. Key artefacts are to be subject to detailed examination and recording (position by tracked diver survey, taped measurements, photographs and video and written database entries)	Achieved. The data were entered into the DIVA recording system, along with still photography and video, providing a structured record of filed observations.
Undertake the collection of appropriate bed level pH values	Achieved. A pH sample was taken during dive 1004 on 30 July 2016. The instrument measured a pH of 8.43 and a temperature of 19.3°C. The instrument, a waterproof pH tester HI98128, on loan from Historic England, was single point calibrated before assessment on 21 October 2016.
Stage 3 – post-fieldwork	
Review fieldwork results, including specialist finds and sample assessment	Achieved. See **Section 4.2-4.6** and **Section 5**.
Further documentary research based on Stage 2 results, if required	Not applicable.
Review the site against the non-statutory criteria for Designation under the Protections of Wrecks Act 1973	Achieved. See **Section 7**.
Secondary Objectives	
If possible (and without excavation) assess the likely depth of deposit on the sites, estimated by reference to the angle of any frames and the height of any ballast/cargo/artefact mound material	Not required. Depth of deposit appears to be minimal. Cannons are on a rocky seabed.
Supplement the recording of the core of the site by recording profiles across the main axis of the site	Not required. Site is flat. Photogrammetry models have been produced of two of the cannons and the anchor, and indicate height of material above the seabed.
Undertake second stage documentary research and a comparison of the site with any documentary evidence on the site as appropriate, to inform designation assessment	Not required. Site recently discovered, and no further documentary evidence is available.

4.2 Site Position

4.2.1 The following position has been derived from The Shipwreck Project (**Figure 1**).

Table 4: Site co-ordinates

Position	WGS84 Long/Lat (Decimal Degrees)		WGS84 UTM 30N	
'The Fog Wreck' from The Shipwreck Project	Longitude	50.52345	Easting	562502
	Latitude	-2.11827	Northing	5597204

4.2.2 Fieldwork has confirmed that the position supplied from The Shipwreck Project is roughly centred between the two large cannons (**WA1001** and **WA1003**).

4.2.3 Positions of artefacts on the seabed derived from the diver survey can be found in **Appendix 3**. Positions of geophysical anomalies derived from the geophysical survey can be found in **Appendix 4**.

4.3 Engagement

4.3.1 The fieldwork was planned and executed with The Shipwreck Project. The engagement resulted in The Shipwreck Project sharing their data, interpretations and theories with Wessex Archaeology, and all of the data generated by Wessex Archaeology during the project, including photographs, documentary research, processed geophysical survey data and diver survey data will be passed to them in a suitable format.

4.4 Operational Summary

4.4.1 Fieldwork was initially planned for 27 June to 1 July 2016, however due to strong winds, the fieldwork had to be delayed.

4.4.2 Four dives were undertaken on the site from 26-30 July 2016. The diving operations were conducted from *Wey Chieftain IV*. Weather conditions were generally good, although poor weather conditions prevented diving on 28 July.

4.4.3 A final dive was undertaken on the site on 10 October 2016. The diving operation was conducted from *Wey Chieftain IV.* Weather conditions were good and visibility was noted as particularly good on that day.

4.4.4 'The Fog Wreck' is relatively deep (26 m) and has a very short window of slack. Therefore, bottom times were limited. Fortunately, working with The Shipwreck Project provided a wealth of local knowledge with regards to accessing the site, as both Grahame Knott and Richard Bright-Paul are familiar with the local conditions, and are also intimately familiar with the site itself. Therefore, they were able to anchor immediately adjacent to the material on the seabed intended for assessment for each dive.

4.4.5 The fieldwork was informed by photographs of the cannons supplied by The Shipwreck Project and by the 2D orthophotos of the cannons and anchor supplied by Simon Brown.

4.4.6 Visibility on the site was exceptionally good, with divers reporting 5-8 m.

4.4.7 Due to the limited time on the seabed, fieldwork focussed on the two large cannons and the anchor, from which it was felt the most diagnostic results could be obtained. Fieldwork

comprised a measured, photographic and video survey, and a brief exploration of the surrounding area for any additional material that might be present.

4.4.8 An intrusive investigation of cannon **WA1001** was undertaken, based on the Historic England approved methodology (Wessex Archaeology 2016) to assess the nature of the cannon, however the concretion proved to be thicker than anticipated, and the results of the investigation were inconclusive.

4.5 Site Description

Seabed and Ecology

4.5.1 The solid geology of the area comprises Portland Beds (Institute of Geological Sciences 1983a). The Portland Beds comprise Portland Stone above Portland Sand. Portland Stone is thickly bedded, commonly cherty, fossiliferous limestones, and Portland Sand comprises clay and siltstones, well bedded pink and grey fossiliferous limestone and dark grey to green variably glauconitic quartz sands.

4.5.2 The seabed sediments in the area comprise muddy sandy gravel, with a general depth of less than 0.5 m (Institute of Geological Sciences 1983b).

4.5.3 In both Area 1, with the concentration of cannons, and in Area 2, where the anchor is located, the seabed is rocky with natural rectilinear ridges arranged in steps. There are pockets of fine well-sorted sand.

4.5.4 There is very limited marine growth on the cannons and anchor, and limited marine growth on the seabed around the artefacts. On one dive near the cannons, a common sea bream was spotted.

4.5.5 The site sits within a very dynamic, high energy environment.

Material on the Seabed

4.5.6 'The Fog Wreck' site comprises two areas of artefacts, Area 1 and Area 2, with other, possibly unrelated material in the general area (**Figure 2**) (**Appendix 2**, **3** and **4**). The Shipwreck Project has described Area 1 as a group of cannons. Area 2, which is located approximately 87 m to the south-west of Area 1, comprises a large anchor.

4.5.7 There are no small finds on the site, and there is no timber visible.

Cannon

4.5.8 According to survey work undertaken by The Shipwreck Project, there are four cannons on 'the Fog Wreck' site (**Appendix 2** and **3**). Two cannons were encountered during the fieldwork undertaken by Wessex Archaeology (**Plates 1**-**4**). The possible breech loading cannon (**WA1001**) is located approximately 20 m to the south-east of the large cannon (**WA1003**). According to The Shipwreck Project, there are two smaller, possible signal cannons (**WA1002** and **WA1004**), situated approximately 15-20 m from the other cannons, however these were not encountered during the dive survey, which concentrated on the main part of the wreck site. However, a 2D orthophoto of one of the smaller cannons was available for assessment (**Plate 5**).

4.5.9 Simon Brown has indicated that the large cannon (**WA1003**) measures 1.97 m from base ring to muzzle face (https://sketchfab.com/models/ed5190b32d514bc199cc00d85d4a9b19 accessed 02/08/2016), which is slightly smaller than the measurements gathered during the dive survey, in **Table 5** below.

Table 5: Measurements of cannons (approximate due to level of concretion)

Measurement	Cannon WA1001	Cannon WA1003
Overall length (base ring to muzzle face)	1450 mm	2050 mm
Muzzle face diameter	240 mm	250 mm
Bore	120 mm	Not visible
Head length (muzzle swell)	-	240 mm
Muzzle neck diameter	-	230 mm
Diameter at the chase	-	280 mm
Trunnions diameter	N/A	90 mm
Possible trunnion on the right side	90 mm	N/A
Distance from trunnions to base ring	640 mm	830 mm
Base ring diameter	300 mm	400 mm
Cascabel length	-	210 mm
Possible breech cascabel length	305 mm	-

4.5.10 Cannon **WA1001** (**Plate 1**-**2**) is heavily concreted and measures 1450 mm (4 ft 9 in) in length with a bore of 120 mm (4.7 in). It is aligned roughly NE/SW on the seabed, with the muzzle pointing SW. Due to the level of concretion, it is not possible to confirm whether it is a wrought or cast iron gun. The depression at the cascabel end of the cannon could indicate a separate breech chamber and suggests that this is a breech loading cannon. The distinctive length of the cascabel may also suggest a breech loading cannon. However, as the intrusive investigations on the cannon were inconclusive, it is not possible to confirm that this is, in fact, a breech loading cannon. Another possibility is that it is a cannon that burst. Intrusive investigation of the depression, comprising removal of some of the concretion, was inconclusive as an intact metal surface of the cannon was not reached during the duration of the dive. The area of concretion removed was made good with putty.

4.5.11 Cannon **WA1003** is a heavily concreted muzzle loading iron gun. It appears to be a cast gun, and it lays either upright or upside down, and has a pronounced swell (**Plate 3**-**4**). Both trunnions are visible. It is aligned roughly east/west on the seabed, with the muzzle pointing east. The cannon measures 2050 mm (6 ft 9 in) in length and the muzzle face diameter is 250 mm. It is not possible to determine the size of the bore. However, it is likely to be within the 6-pounder to 9-pounder range.

4.5.12 Cannon **WA1002** was not seen during the archaeological assessment by Wessex Archaeology, however, a 2D orthophoto of the cannon was produced by Simon Brown following the investigations in 2015 (**Plate 5**). The cannon is heavily concreted. There is no scale visible on the orthophoto, so it is not possible to determine the size of the cannon. However, it appears to be short and squat, and has been referred to by The Shipwreck Project as a possible signal cannon. It appears to have a cascabel, although no other features are visible.

4.5.13 Cannon **WA1004** was not seen during the archaeological assessment undertaken by Wessex Archaeology, and no orthophotos or photographs were available for assessment. However, this cannon is also described by The Shipwreck Project as a short cannon, possibly a signal cannon.

Concretion

4.5.14 There is a concretion approximately 4.1 m to the NNE of cannon **WA1003**. It is an irregular shape and measures approximately 830 mm by 653 mm (**Plate 3a**). The presence of the concretion so close to cannon **WA1003** suggests that it could be associated, and represent additional ferrous material from the wreck. It is also possible that there are other concretions in the area that have not yet been identified.

Anchor

4.5.15 There is one anchor (**WA1005**), located approximately 87 m to the SW of **WA1001**, in Area 2 as defined by The Shipwreck Project. It is broken and heavily corroded. The anchor is oriented east/west with the crown at the west.

4.5.16 The 2D orthophoto produced by Simon Brown from images taken in 2015 (**Plate 6a**) clearly indicates an anchor broken into two pieces, with the top part of the broken shank lying adjacent to the rest of the anchor.

4.5.17 However, the condition of the anchor had notably deteriorated prior to the survey undertaken by Wessex Archaeology on 10 October 2016. The orthophoto of this survey work (**Plate 6b**) indicates that the top piece of the broken shank has been moved. Diver searches within 5 m of the anchor did not reveal the new location for this item, nor any additional material.

4.5.18 The remaining section of the anchor shank measures 2420 mm in length, which would suggest that the missing section measured approximately 1650 mm in length, and that the anchor was originally at least 4070 mm (13 ft 4 in) in length. Where the anchor is broken, it is round in section and has a diameter of 190 mm (**Plate 7** and **8**). The crown has a depth of 180 mm. One arm is broken, but the remaining arm has a very pronounced bill. From the bill to the middle of the shank measures 920 mm, which would suggest an estimated 1840 mm from bill to bill. The extant arm has a broken fluke that measures 420 mm across.

Samples

4.5.19 A pH sample was taken during dive 1004 on 30 July 2016. The instrument measured a pH of 8.43 and a temperature of 19.3°C. The instrument, a waterproof pH tester HI98128, on loan from Historic England, was single point calibrated before assessment on 21 October 2016.

5 DISCUSSION

5.1 Interpretation of Material on the Seabed

5.1.1 'The Fog Wreck' site appears to be quite dispersed over a large area. It comprises two areas of artefacts: the main site with the possible breech loader (**WA1001**); the large cannon (**WA1003**); and two smaller, possible signal guns (**WA1002** and **WA1004**); and a second area approximately 87 m to the south-west, comprising a single, broken anchor (**WA1005**). No timber or small finds were encountered that could be used to provide a date for the site.

Cannons

5.1.2 The presence of cannons on a shipwreck site suggests a date range from the 16th to the early 19th century. Due to the heavy concretion on the cannons, any measurements indicated above are inevitably approximate, and proportions are not entirely clear. Additionally, the concretion conceals the true shape of the cascabels, and there are no marks or other features visible for identification. With this in mind, the following paragraphs provide a general discussion of some of the possibilities, within the size range suggested by the archaeological survey.

5.1.3 Cannon **WA1001** has been suggested as a possible breech loader, due to the depression in the barrel near the cascabel, however another possibility is that it could be a burst gun or alternatively, the depression may indicate a previous attempt to remove concretion in the past. An intrusive investigation was undertaken to remove selected concretion on **WA1001** to confirm the character of the cannon, however the results of the investigation were inconclusive.

5.1.4 If it is a burst gun, its short size (1450 mm or 4 ft 9 in) would suggest a small cannon, such as an English saker (which varied from 4½ to 10 ft), a cutt (which generally measured less than 7 ft), a minion or a 4-pounder (which varied from 4-7 ft), or even a robiet, one of the smallest guns of the culverin type (which measured about 5 ft long) (Lavery 1987: 101-103). As a burst gun, it would not provide a very definitive date range for the site, and could date from the 16th to the early 19th century.

5.1.5 If the gun were to be a breech loader, it would suggest an early date for the site. Breech loading iron guns were in general use by the middle of the 15th century (Howard 1979) and continued to be common into the first half of the 16th century (Cazenave de la Roche 2011). By the mid-16th century, wrought iron guns were generally replaced by cast-iron guns, due to developments in technology (Cazenave de la Roche 2011: 72). Breech loading iron guns ranged in size from cannons to smaller swivel guns. Swivel guns were generally considered to be obsolete aboard English ships by the beginning of the 17th century, but they reappeared at the beginning of the 18th century (Lavery 1987: 104). A breech loader found on board the *Association*, that wrecked in 1707, is thought to have been intended for use on land (*ibid.*). In the early 18th century, Fifth and Sixth Rate ships carried swivel guns on their quarterdecks, but these were generally muzzle loading.

5.1.6 Wrought iron breech loading guns have been discovered on a number of 16th century shipwrecks off the coast of the UK and further abroad. A smaller example, measuring a total of 1097 mm was a Flemish wrought iron hailshot piece with a curved cascabel recovered from the River Rhine and dated to c. 1500 (Mehl 2002). A European *peterara* thought to be used as a swivel gun, and measuring 1368 mm in length (Mehl 2002: 14), is closer in length to **WA1001** however it has a longer, slender cascabel. There are also examples of wrought iron breech loading guns from the wreck of *El Gran Grifon*, an Armada wreck on Fair Isle, which had two wrought iron breech loading guns, measuring 1650 mm and 1800 mm in length with bores of 76 mm and 90 mm, respectively (Martin 1972). Martin (1972) mentions that these two guns are comparable with wrought iron pieces raised from *Mary Rose*. However, these guns are longer, with smaller bores than **WA1001**. The 16th century Mortella II and III wrecks, discovered in Saint-Florent Bay, Corsica, France, also exhibit wrought iron breech loading guns (Cazenave de la Roche 2011). Both sites have wrought iron guns with a removable breech, and these were used to provide an initial date range for the sites, as such artillery was common in the 15th and first half of the 16th century (*ibid.*: 72). On Mortella II, the six cannons measure approximately 2000 mm in length and the calibre of the barrels is around 259 mm, allowing for concretion. The sixth cannon is smaller and thought to be possibly a swivel gun. On Mortella III, the nine cannons have an average

length of approximately 2000 mm and the barrels have a diameter of around 350 mm, with the bore thought to be 200-220 mm. The majority of shot discovered on the site was made of stone and had a diameter of around 220 mm and a weight of 17 kg.

5.1.7 Cannon **WA1003** does not have any distinctive markings or features that could narrow the date range of the site. The cannon measures 2050 mm in length with a muzzle diameter of 250 mm. The bore of the muzzle is not visible due to concretion, but the diameter of the muzzle suggests a gun in the 6- to 9-pounder range. The length of the cannon suggests a number of type possibilities, such as an English demi-culverin (which varied from 5-10½ ft), a Dutch 6-pounder (which varied from 6-9 ft), an English saker (which varied from 4½- 10 ft), a cutt (which generally measured less than 7 ft) and a minion or 4-pounder (which varied from 4-7 ft) (Lavery 1987: 101-103). There are numerous examples of cannons of this size in the archaeological and historical records, and, for example, the 9-pounder demi-culverin was so popular in the 17th century that by 1666 only 16 ships above Sixth Rate did not have any, and they continued to be used throughout the first half of the 18th century (Lavery 1987: 101). Whereas, minions, another possible interpretation for the cannon, continued in use until the early 1800s (Lavery 1987: 103).

5.1.8 The small cannons **WA1002** and **WA1004** were not investigated in detail for this assessment, but as they are not reported to have any distinctive markings or features, they are unlikely to provide a diagnostic date for the site.

Anchor

5.1.9 The anchor (**WA1005**) is lightly built with a long shank (measuring at least 4070 mm or 13 ft 4 in in length) with relatively short arms. These dimensions suggest an earlier anchor type, dating it to before the 19th century. Between 1600 and 1815, anchor proportions did not change significantly (Lavery 1987: 30), however in the 16th and 17th centuries, most anchors had curved arms, and the straight arm anchor was later introduced as larger anchors were required (Upham 2011: 12).

5.1.10 The dimensions of the anchor (**WA1005**) are smaller but somewhat similar to known 16th century examples, but it must be noted that **WA1005** is round in section. Two anchors recorded on *La Trinidad Valencera*, an Armada wreck from Kinnage Bay, Ireland, measured 4570 mm and 4800 mm in length and 2440 mm and 2740 mm across, respectively, and were square in section, with the section approximately 180 mm across (Martin 1979). In addition, three anchors from the 16th century Mortella shipwrecks (Cazenave de la Roche 2011) are also roughly comparable, measuring between 3900 mm and 4500 mm in length. The shanks are square in section, and measure 170 mm across, possibly originally 15 cm across without concretion.

5.1.11 A later date for the anchor cannot be completely dismissed, and the anchor has been considered with 18th century documentation. Based on a table of Admiralty anchor sizes for six rates of Admiralty ship in 1717 (reproduced in Curryer 1999: 53), an anchor at least 4070 mm (13 ft 4 in) in length would be for a vessel between 364 and 625 tons. However, a chart of established sizes and weights of anchors for the Royal Navy c. 1763 (reproduced in Curryer 1999: 56) suggests an anchor of 13 ft 4 in could also be a stream anchor for a 100-gun ship or one of three bower anchors for a 14-gun ship, varying from 20-21 cwt. As the anchor is broken and no ring is visible, it is possible it was longer, and an anchor 14 ft in length (4267 mm) could represent one of four bower anchors for a 20-gun ship, of 25 cwt).

5.2 Site Identification

5.2.1 Although the material on the seabed is limited to four cannons and an anchor, a few possible interpretations of the site have been put forward, which are discussed below. The possible breech loader and the long, lightly built anchor with short arms could suggest an early date for the site, although this cannot be confirmed.

Possibility 1: Armada Ship

5.2.2 The Shipwreck Project has suggested that this wreck site could represent the remains of an Armada ship, specifically *San Salvador*, a Spanish carrack from the Guipúzcoan Squadron of the Spanish Armada which was lost in 1588 (Lloyd 1967: 184; Pastscape: 900416. https://pastscape.org.uk/hob.aspx?hob_id=900416 Accessed June 2016).

5.2.3 *San Salvador* was a wooden sailing vessel that has been described as one of the most heavily armed ships in the Armada fleet and the flagship of the Spanish paymaster (Martin and Parker 1988: 149). On 21 July 1588, during the first encounter between the English fleet and the Armada, there was a massive explosion on board (Pastscape: 900416. https://pastscape.org.uk/hob.aspx?hob_id=900416 Accessed June 2016). Accounts of the damage at the time describe the ship as having two of the decks blown up, the stern blown out and the steerage broken (*ibid.*). The cause of the explosion was never determined, although it was possibly due to sabotage or, more likely, an accident on board. It was suggested that roughly half of the 400 men on board were killed by the explosion or drowned when they abandoned ship. The fire was later extinguished, but on 22 July 1588, the vessel was abandoned, captured by the English and towed to Weymouth (Lloyd 1967: 187).

5.2.4 The historical record provides clues to the material that was removed from the ship, and what might have remained, and thus what might be predicted on the seabed. In August 1588, ordnance from the ship, including eight brass cannons, four old iron minions and two old fowlers were delivered to the town of Weymouth and Melcombe Regis for the defence of town and country (Pastscape: 900416. https://pastscape.org.uk/hob.aspx?hob_id=900416 Accessed June 2016). Other ordnance on board the ship included four other iron pieces, including minions and falcons (*ibid*), and it is not known if this material was removed from the ship or if it remained. The powder and shot were removed from the ship and went to reinforce the English army, and it is likely that other supplies were also removed at this time. Lloyd (1967: 187) specifies that *"a hundred Venetian barrels of powder…two hundred shot, cannons, demi-cannons and culverin"* were sent after the Earl of Sussex and the Fleet. The inventory of the munitions recovered from San Salvador after its capture was written over two weeks later and is incomplete (SP 12/215/49/2).

5.2.5 Although some sources suggest that the vessel left for Portsmouth after a few days, other accounts suggest the vessel remained in Weymouth until October or November, requiring constant pumping (Lloyd 1967: 199; Pastscape: 900416. https://pastscape.org.uk/hob.aspx?hob_id=900416 Accessed June 2016). While the date of departure is uncertain, the vessel is known to have foundered at sea whilst on passage. The NRHE Recorded Loss Location for *San Salvador* positions the loss off Handfast Point, on the south side of Studland Bay, however there is no evidence that the wreck is located there.

5.2.6 The anchors are described as 'two anchors and cables that the vessel rides by and four anchors more' (Pastscape: 900416. https://pastscape.org.uk/hob.aspx?hob_id=900416 Accessed June 2016), and although the sizes are not mentioned, the anchors are likely to have remained with the vessel. According to Lloyd (1967: 200; SP 12/218/24), marks had

been taken where the anchors lay on the wreck site and a sweep was to be made for them in fair weather.

5.2.7 A number of Armada shipwrecks have been located and archaeologically investigated, including *El Gran Grifon* (Martin 1972); *La Trinidad Valencera* (Martin 1979); *La Lavia*, *La Juliana* and *Santa Maria de Vison* (Birch and McElvogue 1999). These wrecks provide an opportunity for general comparison with the material discovered at 'the Fog Wreck' site, although it is acknowledged that the armament of the Armada varied greatly from ship to ship and was not standardised.

5.2.8 *El Gran Grifon* was flagship to the Armada's squadron of supply-hulks and was listed as a 650 ton vessel with an armament of 38 unspecified guns (Martin 1972). Twelve guns were discovered during archaeological fieldwork. In addition to the bronze guns, there were a number of iron guns, including: three '*Culebrina*' type cast iron guns (2.85 m in length), two '*Cañon*' type cast iron guns (2.4 m in length), two other cast-iron guns (1.2 m in length), a wrought iron breech loading gun (1.65 m in length), and another wrought iron breech loading gun (1.8 m in length) (Martin 1972: 63). The wrought iron guns are described as comparable with the wrought-iron pieces from *Mary Rose*. In addition, four breech blocks of wrought iron suggest the presence of additional breech loading swivel guns. The wreck site included shot, lead ingots and coins. Although the guns are of different sizes than 'the Fog Wreck' site, the mix of cast-iron guns and wrought iron breech loading guns suggests possible parallels. The site covers an area approximately 60 m by 15 m.

5.2.9 *La Trinidad Valencera* was a large Venetian merchantman requisitioned by Spain for the 1588 Armada, and it was lost in Kinnagoe Bay, County Donegal (Martin 1979, 2011; Martin and Parker 1999: 269-276). Overall, archaeological investigations identified five guns: three bronze muzzle loaders; one composite bronze and wrought iron breech loading swivel gun known as a *petriera da braga* (or *falcon pedrero*); and a wrought iron breech block of a similar but larger piece. The site extends over 180 m in a north-easterly direction along a reef.

5.2.10 *La Lavia*, *La Juliana* and *Santa Maria de Vison* (Birch and McElvogue 1999) were three transport ships that wrecked in September 1588 off Streedagh Strand, County Sligo. The wreck site of *La Juliana* included four bronze guns and three anchors, five wooden spoked wheels, and the rudder. The wreck of *Santa Maria de Vison* included a bronze breech loading *esmeril*, with octagonal barrel and the arms of Philip II on it. The wreck site of *La Lavia* included two wooden gun-carriages with bronze guns, as well as a small breech loading swivel gun (identified as a *falcon pedrero*) which was described as comparable to the find on *La Trinidad Valencera*). The swivel gun has a bore of 90 mm which is notably smaller than the bore of the possible breech loader on 'the Fog Wreck' site.

5.2.11 Some sources have suggested that the ships of the Spanish Armanda carried only guns of bronze or wrought iron (referenced in Robertson 2004: 23), and that the few cast-iron guns that are recorded, such as from the *El Gran Grifon* site, were from the squadron of hulks that originated in the Baltic. However, the historical record for *San Salvador* suggests that four iron minions were removed from the vessel, so there is potential for further iron guns of similar, or smaller, sizes to have remained with the vessel on its final voyage.

5.2.12 Although the possibly early anchor and possible breech loader on 'the Fog Wreck' site suggest that the site could represent a wreck of a similar period to the Armada ships discussed above, it has not been possible to confirm that the site comprises the remains of, or part of, *San Salvador*. Equally, as understanding currently stands, there is nothing on the site that categorically disproves this theory, either.

Possibility 2: Recorded Losses

5.2.13 There are 69 Recorded Losses within a 4.5 nm radius of the site (**Appendix 5**). The majority of these are grouped together at three Named Locations: 31 at Kimmeridge Ledges, 33 at St Alban's Head and five at St Alban's Ledge.

5.2.14 Of the 69, two can be discounted because they are too early to be carrying cannon, 12 can be discounted because they were iron-built or steamships, and the three ships lost post-1970 can also be discounted as unlikely candidates. Following the Napoleonic wars, many merchant ships put their guns ashore in home waters as soon as peace was declared, so unless the cannons were on board as ballast, the potential candidate is unlikely to date much beyond 1815.

5.2.15 This leaves 22 possible contenders, 23 if the date range is expanded to 1817 to include a French Brig recorded as lost on St. Alban's Ledge (1144691). Theoretically, the five Recorded Losses within the St Alban's Ledge Named Location could be considered the most likely candidates (900472, 1144691, 1230226, 1335975 and 1342005), however many other vessels are described with relatively vague loss locations, such as 'near St Alban's Head' or 'off St Alban's Head', and therefore could not be excluded from consideration.

5.2.16 Many of the Recorded Losses have detailed records, and these can be used to enrich what is known about a particular period, shipping patterns and so forth. The records often include information about vessel type, construction methods, nationality, departure location and destination, cargo, a possible cause of loss and a rough loss location. However, the records rarely indicate the armaments on-board, such as cannons, signal guns, ammunition, or other material. Therefore, it is not possible in this instance to further narrow down a possible candidate Recorded Loss, based on the material visible on the seabed.

Possibility 3: Unrecorded Loss

5.2.17 It is also possible that the ship relates to a loss that was never recorded. In particular, wreck events before the mid-18th century were less likely to be recorded and even if they had been recorded, the records are less likely to survive.

5.2.18 Archaeologically investigated shipwrecks thought initially to have Armada associations, have in some cases been proven otherwise, such as the unrecorded loss of the wreck located at the Kinlochbervie site (Robertson 2004). Four cast iron guns were discovered on the site. Gun 1 measures 2.6 m in length with a bore of 90 mm, and has been interpreted as a sacre or 6-pounder dating to the late 16th to early 17th century. The other three cannons were too heavily concreted for detailed description, although they were thought to be consistent with a date in the second half of the 16th century or early 17th century, and were likely to have been made in England or the Baltic countries, as these were major suppliers and exporters of cast-iron ordnance during this period. The guns from the Kinlochbervie site are described as 'altogether different in character' from the cast-iron guns from *El Gran Grifon*, as they are squatter and heavier (Robertson 2004: 23-24). Further, the lack of wrought-iron and cast-bronze ordnance further suggested a non-Armada interpretation, as ships armed exclusively with cast-iron guns are likely to date from the first quarter of the 17th century or later (Robertson 2004: 24). The pottery on board also suggested a possible Iberian connection.

Possibility 4: Co-incidental Deposition

5.2.19 Although less likely, as no hull remains have been discovered and as it has not been possible to provide a definitive date range for the cannons and anchor, the possibility that this site represents co-incidental deposition cannot be entirely ruled out.

5.2.20 It is possible that the cannons and anchor were lost from separate wrecking events, as there have been numerous losses along this coast. It is also possible that the cannons were jettisoned from a vessel, or from a number of different vessels, trying to avoid being wrecked. The anchor could have been abandoned by another vessel entirely, when it was not possible to be retrieved, or if the hawser parted.

5.2.21 There is unrelated material, comprising a modern metal wheel rim (**WA1006**) located under a ledge near cannon **WA1001**, which suggests the potential for other, unrelated, intrusive material on the site.

5.3 Site Characterisation

5.3.1 The overall characterisation of the exposed material on the seabed can be summarised as follows, using the Build/Use/Loss/Survival/Investigation (BULSI) method of 'shipwreck biography' as presented within the ALSF project *On the Importance of Shipwrecks* (Wessex Archaeology 2006). The results are as follows:

Build

5.3.2 No timbers survive on the seabed, but, assuming all of the artefacts are related, they are likely to derive from a wooden sailing ship.

Use

5.3.3 There are four guns reported on the seabed, however this does not conclusively associate the ship with a military vessel, as they could have been on board a merchant ship, or even carried on board as part of the cargo. No cannonballs have been discovered on the site.

Loss

5.3.4 There is no evidence for how the ship was lost. The site is located at the south-western end of Saint Alban's Ledge, and only one Recorded Loss in the area has a cause of loss, and that is that it foundered. Due to the offshore location, it is likely the ship was in use when it was lost. However, due to the concreted nature of the cannons and anchor, there are difficulties in dating and identifying the wreck, and therefore the date of loss is uncertain. Based on the probably early date for the anchor, the possible breech loader cannon and the cast-iron muzzle loading cannon, the wreck is likely to date from the 16th to the early-19th century.

Survival

5.3.5 The archaeological material on the site consists of four cannons, although only two were encountered during the archaeological survey and a third was assessed solely through photographs, an anchor, and a concretion. No other material is known around the site, although it may be present and not yet discovered. There is approximately 87 m between the anchor and the main cannon site. However, the full extent of the site may not have been determined, and there are additional geophysical anomalies approximately 170 m to the south-east of **WA1001**.

Investigation

5.3.6 The site was discovered by The Shipwreck Project in 2015. They undertook the initial geophysical survey that identified the potential site, and undertook a number of dives on the site in 2015 and again in May, June and July 2016. Underwater photographer Simon Brown has produced detailed 3D photogrammetry models of three of the cannons and the anchor. Wessex Archaeology investigated the site through diver survey for this report. No other investigations of the site are known.

6 RISK ASSESSMENT

6.1.1 Using available information, the site has been risk assessed using Historic England's *Protected Wreck Sites at Risk: A Risk Management Handbook* (2008). The results are presented in **Appendix 6**.

6.1.2 Risk is assessed as **high**. The principal vulnerability is possibly anthropogenic activity, such as fishing or anchoring. The level of risk is based on the risk assessment matrix, and due to the fact that a section of the anchor, a feature of special interest on the site, has been lost between the initial diver survey of the site in 2015 and Wessex Archaeology's survey of the site in October 2016.

7 ASSESSMENT AGAINST NON-STATUTORY CRITERIA FOR DESIGNATION

7.1 Assessment Scale

7.1.1 For each criterion, one of the following grades has been selected. This has been done in order to help assess the relative importance of the criteria as they apply to the site. The 'scoring' system is as follows:

- *Uncertain – insufficient evidence to comment;*
- *Variable – the importance of the wreck may change, subject to the context in which it is viewed;*
- *Not Valuable – this category does not give the site any special importance;*
- *Moderately Valuable – this category makes the site more important than the average wreck site;*
- *Highly Valuable – this category gives the site a high degree of importance. A site that is designated is likely to have at least two criteria graded as highly valuable;*
- *Extremely Valuable – this category makes the site exceptionally important. The site could be designated on the grounds of this category alone.*

7.2 Non-Statutory Criteria Assessment

7.2.1 'The Fog Wreck' site has been assessed using the scale presented above against the criteria required for designation under the Protection of Wrecks Act 1973 as presented in Historic England's (2012: 9-11) *Ships and Boats: Prehistory to Present*. Should further evidence be found relating to the site, this assessment should be updated appropriately.

Period

7.2.2 **Uncertain / Moderately Valuable**. The only dating evidence for the site is the iron ordnance and anchor that support a probable date range from the 16th to early-19th centuries. If further investigations were to confirm an association with *San Salvador*, the wreck would be of national importance and would generate international interest. Should the remains date to pre-1700, they could be of national importance, as evidence from this period is rare. If the wreck pre-dates 1800, it would be likely to be of local or regional significance.

Rarity

7.2.3 **Uncertain**. There is evidence that the vessel was carrying ordnance and that it is likely to date to the 16th to early-19th centuries, but there is currently insufficient evidence to assess rarity.

Documentation

7.2.4 **Uncertain**. The vessel has not yet been identified, and therefore there is no documentary evidence regarding its date, use, or circumstances of loss.

Group Value

7.2.5 **Uncertain**. The available evidence is too insubstantial to make a definitive link between this site and any others.

Survival/Condition

7.2.6 **Moderately Valuable**. There are limited archaeological remains on the seabed, and these are heavily concreted.

Potential

7.2.7 **Uncertain**. It is possible that there are undisturbed archaeological remains in the area, for example shallowly buried underneath the guns. It is also possible that further material remains could be discovered in the wider area.

Fragility/Vulnerability

7.2.8 **Moderately Vulnerable**. The cannons and the anchor are heavily concreted, and therefore they are stable on the seabed. However, between the initial discovery in 2015 and Wessex Archaeology's fieldwork in October 2016, a piece of the anchor has gone missing from the site.

Diversity

7.2.9 **Uncertain**. Insufficient evidence is available to assess this criterion.

7.3 Summary

7.3.1 Based on the above assessment, Wessex Archaeology is of the opinion that the site does not meet the criteria for Designation under the Protection of Wrecks Act 1973.

7.3.2 Should further significant data become available, such as the discovery of additional material on the seabed, it is recommended by Wessex Archaeology that this assessment be reviewed.

8 CONCLUSION AND RECOMMENDATIONS

8.1.1 This assessment achieved the recording level set in the Brief: Level 3a, whereby a diagnostic record is generated comprising a detailed record of selected elements of the site. In this case, the two larger cannons and the anchor, the features most likely to provide diagnostic information, were selected for detailed recording including measured survey, photographic and video survey and the development of 3D photogrammetry models. These features were heavily concreted, and could not be characterised or dated. The possible iron breech loader, and the lightly built short-armed anchor could suggest an early date for the site. However, in spite of intrusive investigation on the cannon in the vicinity of the depression at the cascabel end of the gun, it could not be confirmed or disproved as a breech loader or possibly a burst muzzle loading cannon. The large cannon, a cast iron muzzle loader measuring over 2 m in length, is likely to have been a 6- to 9-pounder, but again, this does not narrow the potential date range. No clear proportions, no very clear idea of cascabel shape and no marks could be obtained, making the assessment of all of these items difficult.

8.1.2 The two smaller iron cannons on the site were not investigated during this survey, however, images from Simon Brown and descriptions from The Shipwreck Project indicate that they are also heavily concreted and unlikely to have diagnostic details visible.

8.1.3 The Shipwreck Project has put forward a theory that this site could be the remains of *San Salvador*, an Armada ship that was captured by the English, stripped of the majority of its armaments, and then foundered on its journey between Weymouth and Portsmouth. As it has not been possible to securely date the guns or the anchor, this theory can be neither proved nor disproved.

8.1.4 In addition, due to the lack of a specific date range for the site, it has not been possible to put forward any other possible candidates for the wreck, although the Recorded Losses in the NRHE database have been reviewed.

8.1.5 It is less likely, but it is also possible that the material represents coincidental deposition, for example cannons jettisoned from ships attempting to prevent wrecking and an anchor abandoned on the seabed.

8.1.6 Based on current understanding the site is considered to not merit designation, however it should be reviewed if more information comes to light.

8.1.7 The site is relatively stable, as the material is already heavily concreted. However, the fact that a section of the anchor, that was recorded as broken in 2015, has been lost prior to October 2016 suggests that the site is vulnerable to impact, either through anthropogenic activities such as fishing or anchoring, or possibly natural causes such as the high energy environment. The fact that detailed 2D orthophotos of the anchor were available for assessment provided a method for the confident assessment of the deterioration to this feature. In addition, the availability of these orthophotos and the 3D models produced for this assessment will facilitate further condition surveys in the future.

8.1.8 The character of the site is summarised in the following table, based on Watson and Gale's (1990: 183) seven topics for evaluating underwater wreck sites.

Table 6: Summary of site character

Area and distribution of surviving ship structure	No ship structure is visible. The site is approximately 90 m across.
Character of the ship structure	No ship structure is visible, although the site likely represents the remains of a wooden sailing ship.
Depth and character of stratigraphy	There is no evidence for buried material at the site, although it is possible, for example buried under the cannons.
Volume and quality of artefactual evidence	The four guns and the anchor are heavily concreted. No small artefacts were found on the site.
Apparent date of the ship's construction and/or loss	The ship dates from the 16th to the early 19th century, and was probably a wooden sailing ship. There is no evidence for the ship's loss.
Apparent function	Uncertain
Apparent origin	Uncertain

8.1.9 It is suggested that further diver investigations could:

- *measure the small possible signal cannons **WA1002** and **WA1004**;*
- *extend the investigation area to determine whether there is additional material on the seabed;*
- *explore other geophysical survey targets in the area (such as **WA7003** and **WA7004**); and/or*
- *undertake further intrusive investigation on cannon **WA1001** to confirm its character.*

8.1.10 Without further intrusive investigation, such as further assessment of cannon **WA1001** or even recovery of the cannon, it is not felt that much else can be achieved on the site, unless additional, dateable, material is discovered in the vicinity.

9 ARCHIVE

9.1.1 The project archive consists of a hard copy file and computer records and is currently stored at Wessex Archaeology under project code 108280. The project archive will be transferred to an accredited repository that is yet to be agreed.

9.1.2 Shapefiles generated for the project comply with Marine Environment Data and Information Network (MEDIN) standards for metadata (Seeley *et al.* 2014).

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10.3 Charts

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11 APPENDICES

11.1 Appendix 1: Dive Log

Dive	Date	Start Time	Duration*	Max. Depth (m)	Divers	Task
1001	26/07/2016	09:43	12	26	Croce & Harrison	Assess cannon WA1003. Equipment failure, divers returned to surface
1002	27/07/2016	17:20	29	26	Croce, Harrison & Maddocks	Assess cannon WA1003
1003	29/07/2016	13:16	34	26	Croce & Harrison	Assess cannon WA1001
1004	30/07/2016	14:21	36	26	Croce & Harrison	Intrusive investigation of cannon WA1001
1005	10/10/2016	17:19	26	26	Croce & Harrison	Assess anchor WA1005

* Bottom time in minutes (time from diver left surface to diver left bottom; actual working time will be shorter)

11.2 Appendix 2: Context Register

Context No.	Material	Description	Reference from The Shipwreck Project	Reference from Simon Brown	Location on site – described by The Shipwreck Project
WA1001	Metal	Cannon	Possible breech loading cannon	Cannon One	Area 1
WA1002	Metal	Small cannon	Signal cannon	Cannon Two	Area 1
WA1003	Metal	Cannon	Large cannon	Cannon Three / Fog Wreck Iron Cannon	Area 1
WA1004	Metal	Small cannon	Signal cannon		Area 1
WA1005	Metal	Anchor		Anchor	Area 2
WA1006	Metal	Wheel rim			Beyond Area 1

11.3 Appendix 3: Location of Artefacts on the Seabed from Diver Survey

Context No.	Material	Description	Longitude	Latitude
WA1001	Metal	Cannon	50.523347	-2.118234
WA1002	Metal	Small cannon	-	-
WA1003	Metal	Cannon	50.523508	-2.11842
WA1004	Metal	Small cannon	-	-
WA1005	Metal	Anchor	50.522928	-2.119270
WA1006	Metal	Wheel rim		

11.4 Appendix 4: Geophysical Survey Gazetteer

WA_ID	Classification	Longitude	Latitude	Archaeological Assessment	Length	Width	Height	Description
7000	Dark reflector	50.523531	-2.118463	A2	4.6	0.4	0.5	Straight, dark reflector with a broad shadow
7001	Dark reflector	50.522970	-2.119137	A2	1.7	0.3	0.4	Straight dark reflector with a broad, slightly irregular shadow
7002	Dark reflector	50.523404	-2.118282	A2	1.6	0.6	0.4	Dark reflector with an angular shadow. Possible geology
7003	Dark reflector	50.522874	-2.116006	A2	2.1	0.6	0.3	Dark reflector with a rounded shadow. Possible geology
7004	Dark reflector	50.522847	-2.116063	A2	1.4	0.4	0.3	Slightly angular dark reflector with a slight shadow. Possible geology

11.5 Appendix 5: Recorded Losses

Sorted by date

NRHE_ID	Name	Date	Description	Recorded Location	Easting	Northing
900408	LE CRISTOFRE	1305	A wooden English cargo vessel that stranded on 23 April 1306 under Corfe Castle en-route from Bordeaux to London, which was broken up by local people to plunder cargo.	under Corfe Castle	396220	75100
900412	WELFARE	1371	A wooden English cargo vessel that stranded on 17 December 1371 en-route from Plymouth to London. The vessel was laden with wine, iron, tin and hake as merchandise, together with the personal effects and goods belonging to a knight, including bags, linen, cloth of gold, bales of silk, clothing, jewels and silver vessels.	Kimmeridge Ledges	391150	77330
1317398	NOSSA SENHORA DE NAZARETH	1749	A wooden Portuguese cargo vessel which stranded on 22 December 1749 while en-route from Lisbon to Havre. The wreck is described as having been beaten to pieces and very little of the cargo was saved.	near Kimmeridge	391150	77330
900472	FLORINDA	1752	A wooden cargo vessel that foundered on 18 February 1752 while en-route from Bristol to Poole.	St. Alban's Ledge	393860	72230
900478	KING OF PRUSSIA	1753	A wooden cargo vessel that was lost on 12 January 1753 while en-route from Bordeaux to Hamburg. Part of the cargo was saved.	off Kimmeridge	391150	77330
1141618		1753	A wooden Scottish sloop that stranded on 12 January 1753 while en-route from Bordeaux with a cargo of brandy. The vessel was beaten to pieces and three of the hands drowned.	Kimmeridge Ledges	391150	77330
900491	NEPTUNE	1758	A wooden cargo vessel which stranded on the rocks on 19 January 1758. The vessel was a French prize, en-route from Quebec with a cargo of fish and oil.	rocks off St. Alban's Head	396220	75100
1526022	PEGGY	1761	A wooden British sloop which stranded on 19 June 1761 in thick fog, en-route from Weymouth to London with a cargo of Portland stone.	Kimmeridge Ledges	391150	77330
900516	SALLY	1772	A British wooden craft that was lost on 10 November 1772 while en-route from Figueira to Poole. This could be the same wreck as *Suky* recorded as lost on the same day.	off St. Alban's Head	396220	75100

NRHE_ID	Name	Date	Description	Recorded Location	Easting	Northing
900517	SUKY	1772	A wooden brig that was overset in St. Alban's Race and was driven ashore bottom up on 10 November 1772. The cargo comprised oil, wine and fruit which were carried away by locals. This may be the same wreck as *Sally* that wrecked in the same area on the same day.	Kimmeridge Ledges	391150	77330
900528	SALLY	1777	A wooden British cargo vessel from Guernsey that was lost 13 November 1777. Part of the wreck, two men, two cows and a keg of brandy were recovered in Chapman's Pool, but the rest of the crew were lost.	off Kimmeridge	391150	77330
900529		1778	A wooden unknown vessel. Its loss is recorded on a gravestone in St. George's churchyard, Portland: 'In memory of Nichols Mourant of Guernsey, unfortunately wrecked on Purbeck coast 28 march 1778, aged 34.'	Purbeck coast	396220	75100
900536	DILIGENCE	1782	A wooden British cargo vessel that was driven ashore by a French privateer on 13 October 1782.	St. Alban's Head	396220	75100
1319972	MARIA CHRISTINA	1786	A wooden Prussian galliot which was lost on 4 December 1786 while en-route from Bordeaux to Stettin (Szczecin) with a cargo of coffee. The cargo was recovered and sold at auction.	near St. Alban's Head	396220	75100
1331315	KINGS FISHER	1791	An English wooden craft lost on 16 December 1791 in the Isle of Purbeck.	Isle of Purbeck	396220	75100
1335975		1791	A cargo vessel, thought to be about 160 tons lost 21 January 1791.	near St. Alban's	393860	72230
900557	FANNY	1793	A British wooden sloop that foundered on 1 February 1793 while en-route from Swanage to London.	off St. Alban's Head	396220	75100
900572	WILLIAM PITT	1795	An English transport vessel driven ashore on 18 November 1795 while en-route from the Isle of Wight to the West Indies. It was recorded as on shore near Poole or at Encombe. Crew and troops were saved.	Isle of Purbeck	396220	75100
1340592		1807	A wooden collier that was lost on 20 October 1807, laden with 200 tons of coal. The crew were saved.	near St. Alban's Head	396220	75100
1342005	CHARLOTTE	1810	A brig lost on 18 December 1810, while en-route from Portsmouth to Cork. The single deck ship was armed with four guns.	near St. Alban's Head	393860	72230
1342473	NEWCASTLE	1811	A craft run on shore and sunk near St. Alban's Head on 13 April 1811. The stores were expected to be saved.	near St. Alban's Head	396220	75100
1171071	HOPE	1812	A British cargo vessel lost 10 February 1812. The vessel was laden with oranges.	near St. Alban's Head	396220	75100
1171152	PROVIDENCE	1812	A craft from Dundalk, lost 4 March 1812. The crew were saved.	off St. Alban's Head	396220	75100

NRHE_ID	Name	Date	Description	Recorded Location	Easting	Northing
1171291	ST JOHANNES	1813	A cargo vessel, wrecked on the Isle of Purbeck, 17 April 1813. The ship was en-route from Seville to London, carrying a cargo of fruit.	Isle of Purbeck	396220	75100
1230226	SIR HOME POPHAM	1817	A French brig wrecked on 15 August 1817, while en-route from Lisbon to Antwerp carrying passengers as well as a cargo of wine, sugar, lemons and cocoa. Part of the stores and a small part of the cargo were saved. The cargo was auctioned off on 26 August 1817 and included 200 boxes of lemons, 12 boxes of oranges and 27 bags of almonds.	St. Alban's Ledge	393860	72230
1176043	JOHN RICKARD	1826	An English cargo vessel, of Bridlington struck on Kimmeridge Ledge in fog on 29 September 1826. The vessel became a total wreck, but much of the cargo, including rum, sugar, cotton, cocoa was saved, the captain and crew succeeded in getting it to shore.	Kimmeridge Ledges	391150	77330
1144691	SAMUEL	1836	A British wooden schooner wrecked at St. Alban's Ledge 14 November 1836 while en-route from Waterford to Chichester and Portsmouth with a cargo of barley and oats. The captain, his son and a crew member were drowned, but three crew were saved. The vessel immediately broke up.	St. Alban's Ledge	393860	72230
900939	JOSEPH DESIREE	1838	A French lugger laden with wine, was lost 28 November 1838. All of the crew and part of the cargo was saved.	to the west of St. Alban's Head	391150	77330
900953		1839	A British West Indiaman was lost in dense fog and stranded on 11 February 1839.	near Kimmeridge Ledges	391150	77330
900952	FORTITUDE	1839	An English wooden craft lost 8 February 1839. The vessel stranded and was a total loss near St. Alban's Head. It had been en-route from Bahia to Cowes.	near St. Alban's Head	396220	75100
900966	DON PEDRO	1841	An 81 ton British wooden schooner stranded on 14 March 1841, while en-route from Honfleur to Belfast.	Rope Lake Head, Kimmeridge	391150	77330
900962	RENAUD	1841	A French wooden brig stranded 27 January 1841.	Chapman's Pool	396220	75100
900971	EDOUARD	1842	A French wooden craft stranded on 29 November 1842. Ten men, one woman and a child were drowned when the vessel stranded in a violent gale.	Kimmeridge High Ledge	391150	77330
900972	HENRIETTA	1843	A wooden sailing craft was driven ashore 13 January 1843.	Kimmeridge Ledges	391150	77330
900974	HMS SKYLARK	1845	A British wooden brig sloop, a Cherokee-class warship, stranded in thick fog on Kimmeridge Ledge while on passage to Spithead on 25 April 1845. The vessel was carrying an armament of either 10 cannon or 6 cannon.	Cuttle Ledge (or Coalpit Ledge), Kimmeridge	391150	77330

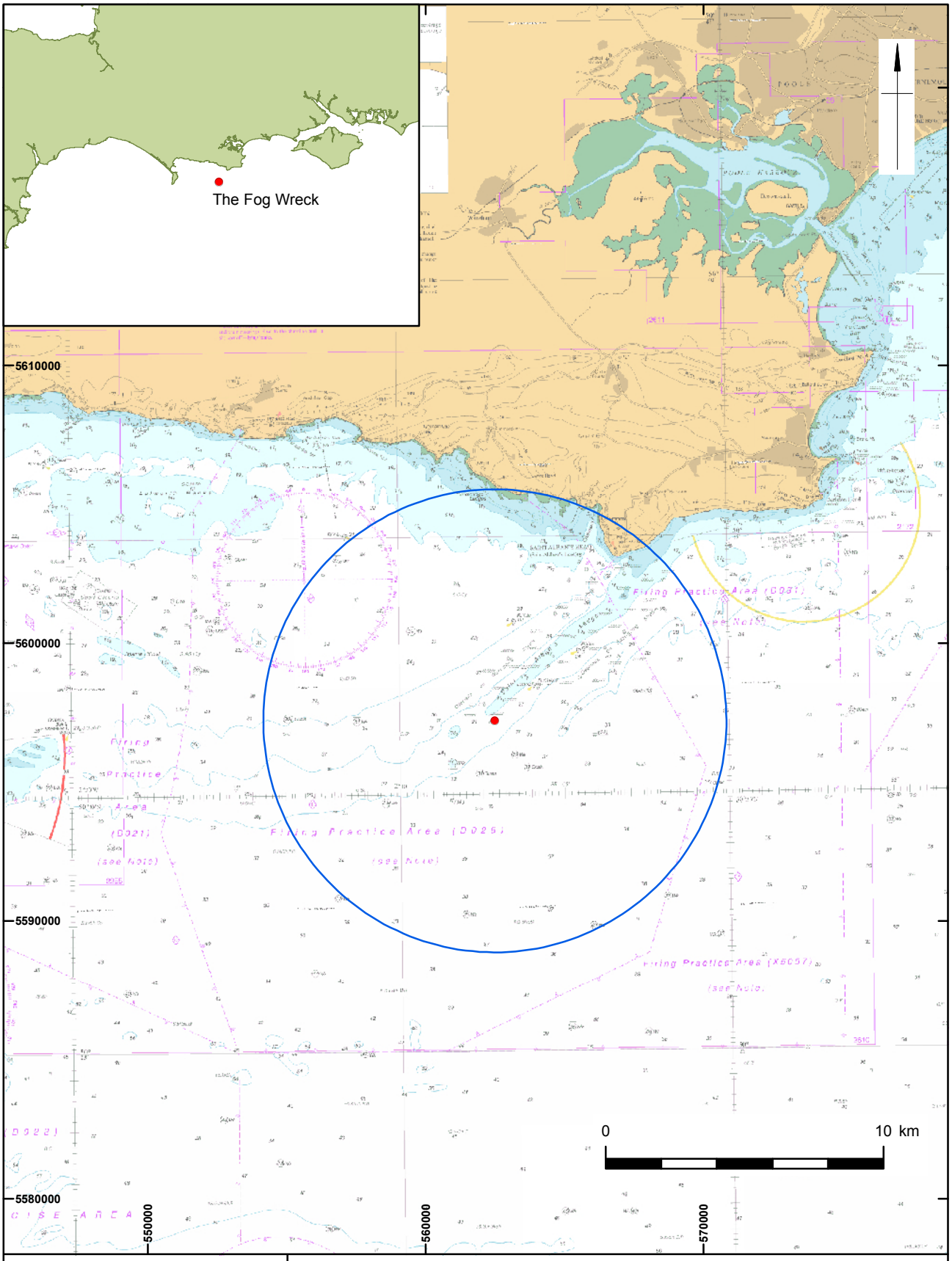
NRHE_ID	Name	Date	Description	Recorded Location	Easting	Northing
900977	ROBERT SHAW	1847	An American wooden brig of 600 tons which was abandoned while on fire off Ushant, while en-route from New Orleans and/or Charleston for Le Havre with a cargo of rice and cotton. The vessel stranded under Clavell Tower on 9 December 1847.	Clavell Tower at Kimmeridge	391150	77330
1231848	ADELAIDE	1853	An English wooden smack lost 9 July 1853, while en-route from Dorset carrying ballast.	rocks near St. Alban's Head	396220	75100
1231901	CARNARVON CASTLE	1856	A Welsh 48 ton wooden sloop stranded 27 September 1856.	Cuttle Ledge, Kimmeridge	391150	77330
1391931	MAID OF AUSTRALIA	1861	A British wooden sailing vessel stranded on 20 January 1861 while en-route from London to Demerara.	near Saint Alban's Head	396220	75100
901083	DOROTHY	1861	An English wooden schooner that stranded on 14 February 1861 while en-route from Swansea to Southampton carrying a cargo of coal. The vessel struck close to where the *Hardy* lay, but then got off and drifted down the reef to where the *Tyne* lay in 1857.	Kimmeridge Ledges	391150	77330
901082	HARDY	1861	A Scottish wooden barque stranded in thick fog 20 January 1861 while en-route from London to Demerara. The 374 ton vessel was carrying a general cargo. All passengers were saved and some of the cargo.	Freshwater Ledge, Kimmeridge	391150	77330
901087	VIRGINIE	1865	A French wooden lugger was stranded 21 November 1865 while en-route from Paimpol to Poole carrying a cargo of potatoes.	near St. Alban's Head	396220	75100
901089	GEORGINA	1866	A French wooden barque stranded 11 January 1866 while en-route from Port au Prince to Le Havre carrying a cargo of mahogany, cocoa and coffee. The vessel was rapidly unloaded, but the vessel was a total wreck.	Chapman's Pool	396220	75100
901102	LIBERTY	1868	An English wooden schooner stranded 25 September 1868 while en-route from Falmouth to Chatham carrying a cargo of granite.	Broad Bench, Kimmeridge Bay	391150	77330
901103		1868	A wooden brigantine driven on the rocks on 27 September 1868 and went to pieces. All hands on board perished.	Kimmeridge Ledges	391150	77330
901120	STRALSUND	1872	A Norwegian wooden cargo vessel lost 9 December 1872 while en-route to New York carrying a general cargo.	Kimmeridge Ledges	391150	77330
901137	COMMODORE	1877	A Welsh wooden brigantine lost 18 August 1877 while en-route from Caernarvon to Hamburg carrying a cargo of slate.	Encombe Ledges / Kimmeridge Ledges	391150	77330
901142	GIPSY QUEEN	1878	A Scottish iron brigantine stranded 2 December 1878, while en-route from Navassa to Newcastle upon Tyne, carrying a cargo of guano.	Kimmeridge Ledges	391150	77330

NRHE_ID	Name	Date	Description	Recorded Location	Easting	Northing
901147	CATHERINE MCIVER	1879	A Scottish wooden schooner stranded 24 November 1879 while en-route from Par to Sunderland carrying a cargo of China clay.	Kimmeridge Ledges	391150	77330
901150	ARKLOW	1880	A Scottish iron steamship lost 19 November 1880.	eastern part of Kimmeridge Ledges	391150	77330
901168	JESSIE MEEK	1883	An English wooden schooner with iron bolts, lost following a collision in 1883. The vessel was en-route from Le Treport to Chester carrying a cargo of flint.	SW of St. Alban's Head	396220	75100
901186	CERES	1886	An English wooden cutter that stranded in thick fog on 21 March 1886 while en-route from Truro to Poole with a cargo of barley.	Broad Bench, Kimmeridge Ledges	391150	77330
901188	PALALA	1886	An English iron steamship lost 1886.	Kimmeridge Ledges	391150	77330
901194	MAYO	1887	A Spanish iron steamship lost in 1887.	west side of St. Alban's Head	396220	75100
901191	WESTLAND	1887	A full rigged Scottish iron sailing ship stranded 10 March 1887.	Kimmeridge Ledges	391150	77330
901238	ADA	1898	An English wooden ketch stranded on 31 December 1898 while en-route from Southampton to Cherbourg while in ballast.	Kimmeridge Ledges	391150	77330
1232944	HILDEGARDE	1900	An English steamship, built of iron. The vessel was lost in November 1900, carrying a cargo of iron ore from Almeria to Newcastle upon Tyne. The ship stranded.	Kimmeridge Ledges	391150	77330
892042		1905	A British wooden cutter stranded 14 January 1905 while en-route from Chichester to Lulworth Cove.	St. Alban's Head	396220	75100
892047	MONTANES	1906	A Spanish steamship lost 23 November 1906. It was carrying a cargo of seed, manganese, oranges, wine, cork, silver and other goods from Spain to London when it stranded.	St. Alban's Head	396220	75100
892053	MORNING STAR	1909	A Channel Island wooden ketch stranded 14 November 1909 while en-route from Calstock carrying a cargo of copper ore.	Broad Bench, Kimmeridge	391150	77330
1233378	WATERLILY	1915	A British steamship, used as a drifter, or fishing vessel. Wrecked in 1915.	St. Alban's Head	396220	75100
1233966	HMS JOHN MITCHELL	1917	A British Admiralty drifter, lost on 14 November 1917 following a collision with the Norwegian cargo vessel *Bjerka*. The vessel was built of wood and steam driven.	St. Alban's Head	396220	75100

NRHE_ID	Name	Date	Description	Recorded Location	Easting	Northing
1233815	ARFON	1917	A British trawler, mined off St Alban's Head on 30 April 1917 while on Admiralty service as an armed minesweeper. The vessel was steel-built and steam driven.	8.5 nm SW of St. Alban's Head	396220	75100
900875	OHIO	1918	A Swedish cargo vessel lost 12 October 1918. It was an iron-built steamship in ballast, en-route from Le Havre to Glasgow when it foundered following a collision.	off St. Alban's Head	396220	75100
900897	LEVITT	1937	A British wooden sailing ship foundered and burnt 17 September 1937.	off St. Alban's Head	396220	75100
900900	TURKIA	1939	A Greek cargo vessel lost 20 October 1939. It was a steel-built vessel, steam driven. It stranded and was lost.	St. Alban's Head	396220	75100
1521285	KAYLENA	1970	A yacht that foundered in 1970. It was a sailing vessel.	2.25 miles SSE of St. Alban's Head	396220	75100
1521296	BARRYMAN	1973	A British yacht that stranded on Kimmeridge Ledges, St. Alban's Head, on 16 August 1973. It was a sailing vessel.	St. Alban's Head	396220	75100
1521446	LICENSE TO KILL	1981	A small British sloop that foundered following a fire on 25 July 1981.	0.25 miles SSW of St. Alban's Head	396220	75100

11.6 Appendix 6: Site Risk Assessment

Wreck/Site Name	**The 'Fog Wreck'**		
NRHE / UKHO No.	HE Region	Restricted Area	Principal Land Use
N/A	South West	N/A	Marine
Latitude (WGS84)	50.52345		
Longitude (WGS84)	-2.11827		
Class Listing	Period	Status	
Unknown	Post-medieval	Non-designated wreck site	
Licensee	Nominated Archaeologist	Principal Ownership Category	
N/A	N/A	Unknown	
Seabed Owner	Navigational Administrative Responsibility		
The Crown Estate			
Environmental Designations			
None			
Seabed Sediment	Energy		
Muddy sandy gravel	Medium		
Survival			
Unknown			
Overall Condition	Condition Trend	Principal Vulnerability	
Generally satisfactory but with significant localised problems	Declining	Fishing, anchoring	
Amenity Value: visibility			
Limited above bed structural remains and finds scatter with limited visibility and only 'legible' with further interpretive information.			
Amenity Value: physical accessibility	Amenity Value: intellectual accessibility		
Full. No restrictions on access and no impediments to appreciation of the wreck.	No interpretation.		
Management Action	No action required.		
Management Prescription	No management prescription required. Historic England to liaise with stakeholders concerned to improve management regime.		
Notes:			
The site has been rated as 'generally satisfactory but with significant localised problems' and 'declining' because between the 2015 discovery of the site and Wessex Archaeology's assessment of the anchor in October 2016, a section of the anchor, which was notably broken in the initial photographs, has since been lost from the site. It is also possible that other artefacts on the surface have also been lost from the site, and that the anchor could sustain further damage. The loss could be due to anthropogenic causes such as fishing or anchoring, but this is a medium energy site and it is also possible that some loss could be due to natural processes such as tidal movements. Based on the Risk Decision Tree in the *Protected Wreck Sites at Risk: A Risk Management Handbook* (Dunkley 2008), the site should be considered to be **High Risk** as the anchor, a feature of special interest on the site, is subject to physical decay. However, the rest of the site appears to be stable and its condition and environment are generally satisfactory, which would indicate the site is at low risk.			
Risk is assessed as:	**High**		
Data Source	**CON**	**Date & Initials**	**20/10/2016 ATH**



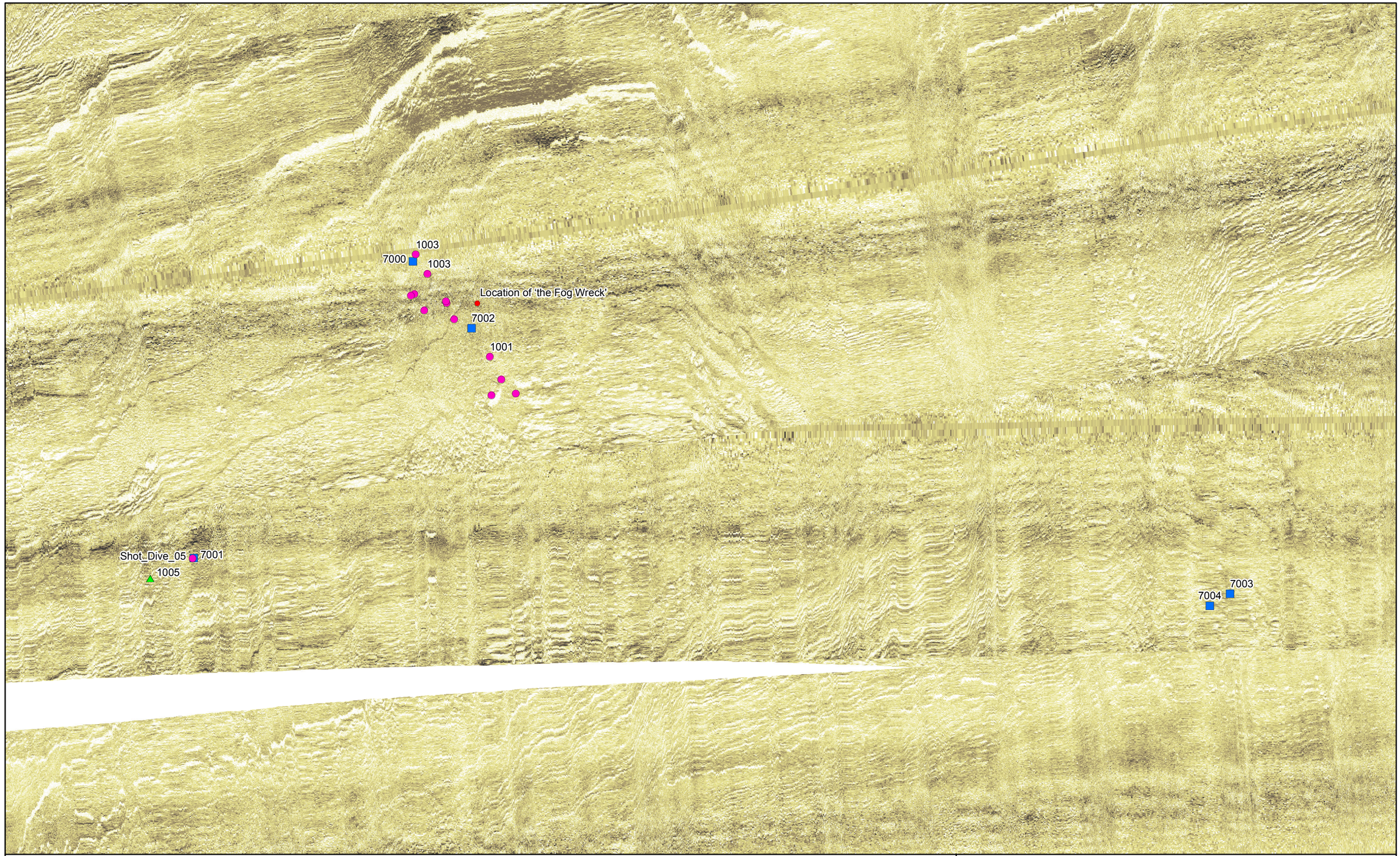
The Fog Wreck

NRHE Recorded Loss Search Area (4.5 nm)

Date:	02/11/2016	Revision Number:	0
Scale:	1:200,000 at A4	Illustrator:	KJF
Path:	W:\Projects\108280\7 - Graphics Office\G_O\Rep figs\FogWreck\2016_10_28		

Site location

Figure 1



Location of 'the Fog Wreck', courtesy of The Shipwreck Project

Diver observations

Location of anchor

Geophysical anomalies

Coordinate system:
UTM WGS84 Z30N

0 50 m

Date:	04/11/2016	Revision Number:	0
Scale:	1:800 at A3	Illustrator:	KJF
Path:	W:\Projects\108280\7 - Graphics Office\G_O\Rep figs\FogWreck\2016_10_28		

Sidescan sonar data from the Shipwreck Project and diver observations

Figure 2

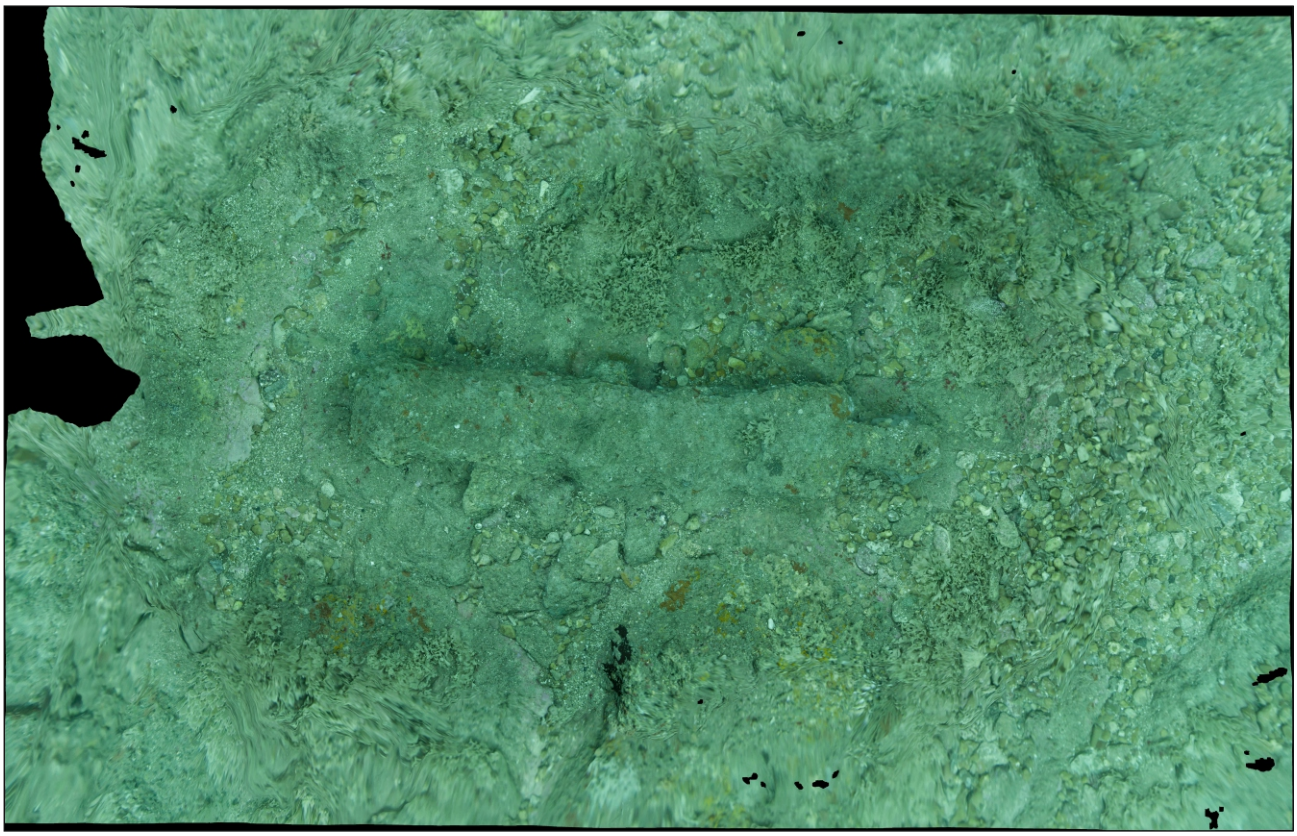


Plate 1a: Cannon (WA1001) 2D orthophoto © Simon Brown

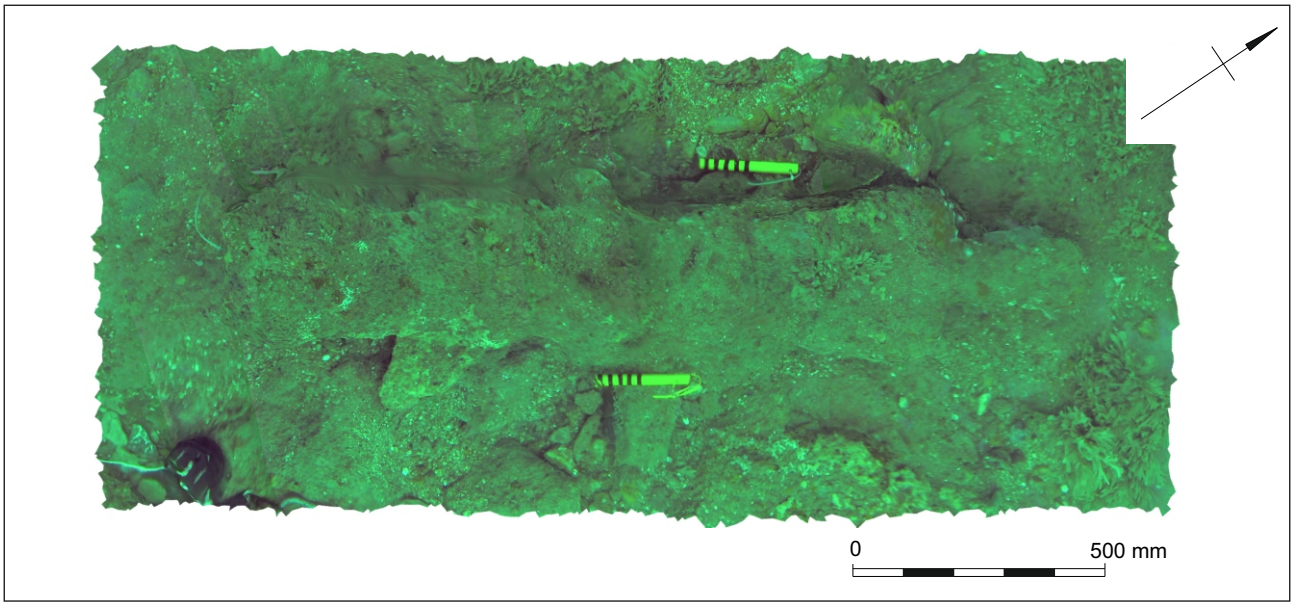


Plate 1b: Cannon (WA1001) 2D orthophoto Wessex Archaeology (29/07/2016)

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Path:	W:\Projects\108280\7 - Graphics Office\Graphics_Office\Rep figs\FogWreck\2016_10_28		

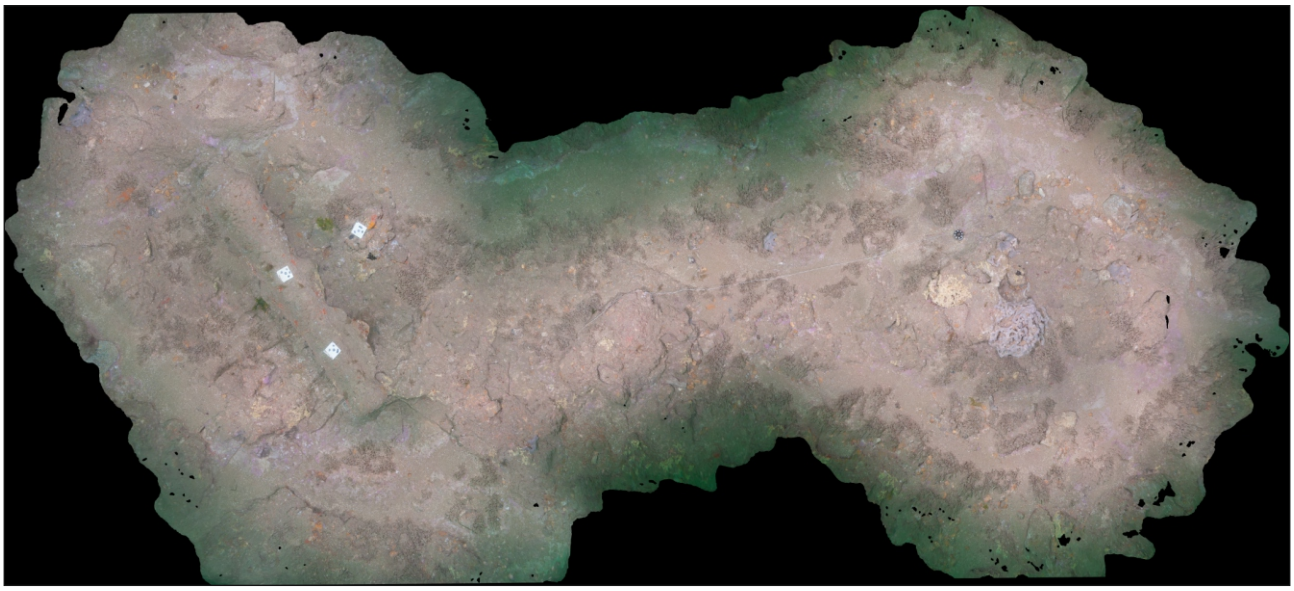

Plate 3a: Cannon (WA1003) 2D orthophoto © Simon Brown

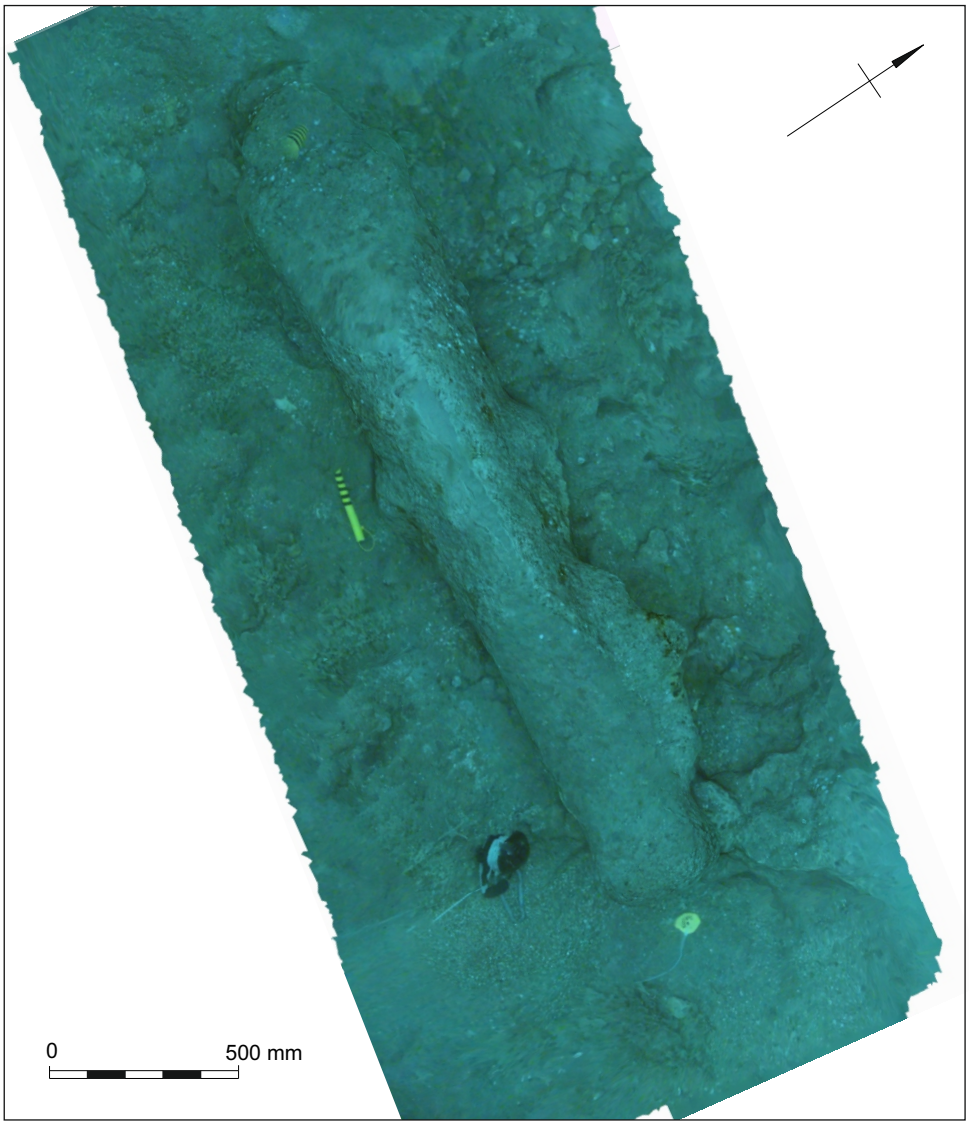

Plate 3b: Cannon (WA1003) 2D orthophoto Wessex Archaeology (27/07/2016)

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Path:	W:\Projects\108280\7 - Graphics Office\Graphics_Office\Rep figs\FogWreck\2016_10_28		

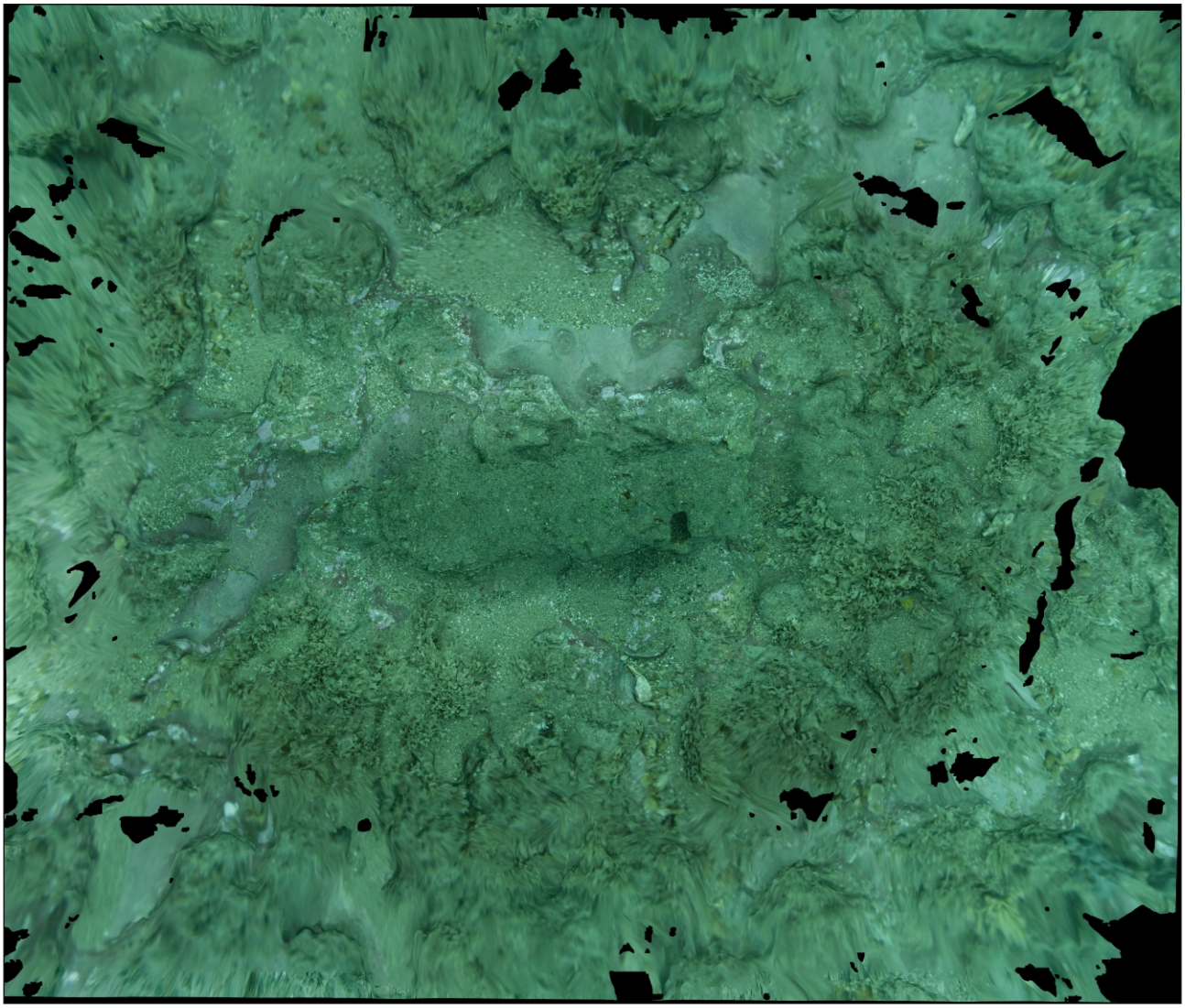

Plate 5: Cannon (WA1002): 2D orthophoto © Simon Brown

Date:	04/11/2016	Revision Number:	0
Scale:	N/A	Illustrator:	KJF
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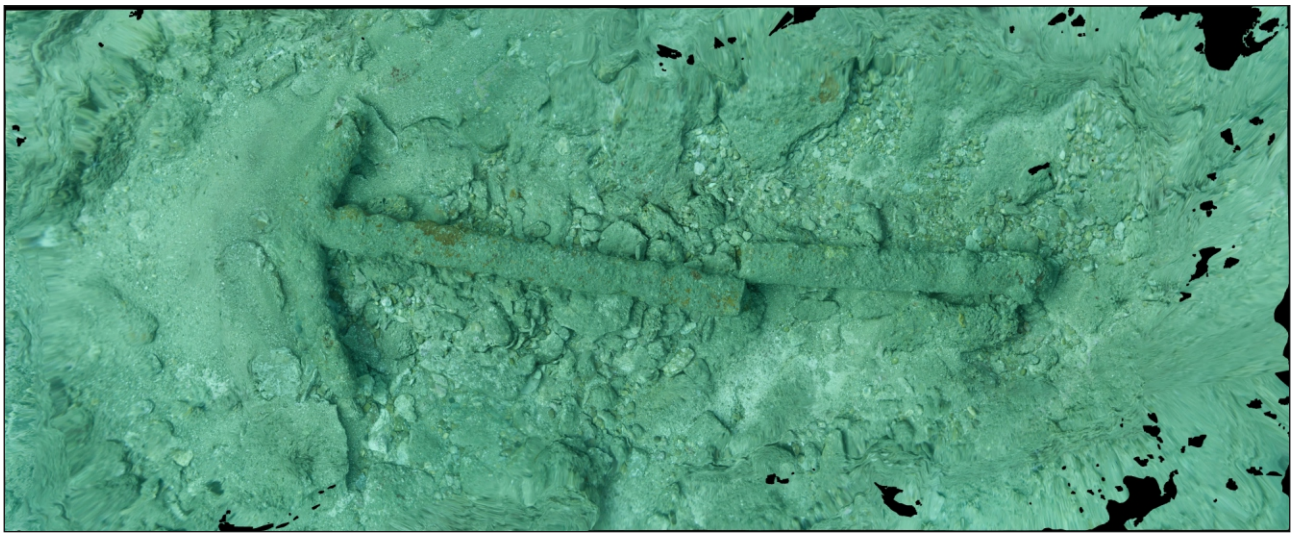

Plate 6a: Anchor (WA1005) 2D orthophoto © Simon Brown

Plate 6b: Anchor (WA1005) 2D orthophoto Wessex Archaeology (10/10/2016)

Date:	04/11/2016	Revision Number:	0
Scale:	6b. 1:20 @A4	Illustrator:	KJF
Path:	W:\Projects\108280\7 - Graphics Office\Graphics_Office\Rep figs\FogWreck\2016_10_28		

Plate 8a: Additional detail on anchor (WA1005)

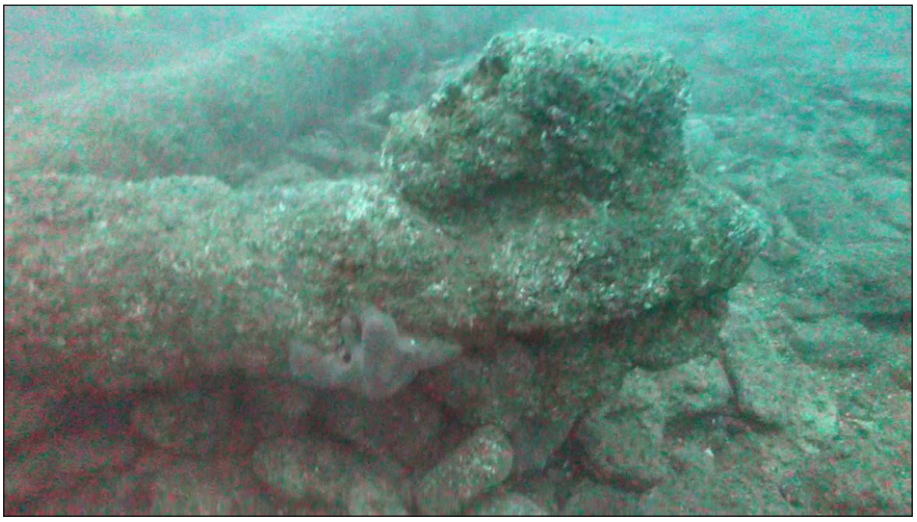

Plate 8a: Additional detail on anchor (WA1005)

Plate 8a: Additional detail on anchor (WA1005)

Date:	04/11/2016	Revision Number:	0
Scale:	N/A	Illustrator:	KJF
Path:	W:\Projects\108280\7 - Graphics Office\Graphics_Office\Rep figs\FogWreck\2016_10_28		

Cannon (WA1001): 3D photogrammetry model (Wessex Archaeology)

Date:	30/11/2016	Revision Number:	0
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Path:	W:\Projects\108280\7 - Graphics Office\Graphics_Office\Rep figs\FogWreck\2016_10_28		

Cannon (WA1003): 3D photogrammetry model (Wessex Archaeology)

Date:	30/11/2016	Revision Number:	0
Scale:	N/A	Illustrator:	KJF
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Anchor (WA1005): 3D photogrammetry model (Wessex Archaeology)

Date:	30/11/2016	Revision Number:	0
Scale:	N/A	Illustrator:	KJF
Path:	W:\Projects\108280\7 - Graphics Office\Graphics_Office\Rep figs\FogWreck\2016_10_28		

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