2013

Gull Rock Wreck & Iona II licensee Site Report

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This BSAC Jubilee Trust and MAST funded project aimed to investigate the 15th/16th century Gull Rock Wreck site, off Lundy Island. Initially this comprised the completion of a desk based assessment of the site which was subsequently surveyed in June 2013. The survey utilized a team of 5 divers comprised of Bournemouth University students and alumni to complete 36 Dives. The work on the site allowed for the ordinance to be recorded and for the current condition of the finds scatters remaining extent on the seabed to be better understood.

Bournemouth Underwater Marine Archaeological Diving Society
BSAC Club Number: B2428
7/12/2013

Acknowledgements

The project team would like to recognise and thank both the British Sub Aqua Club Jubilee Trust and the Maritime Archaeological Sea Trust for their contributions towards this project, as for without them this would not have been possible. We would also like to thank the Marine and Coastal Agency for the use of their bathymetric data, also Wessex Archaeology and English Heritage for use of their site archives. Finally, we would like to thank Derrick Green, Rebecca MacDonald and all the other Lundy staff for their help whilst on the Island.

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Introduction

Project Background

Bournemouth Underwater Marine Archaeological Diving Society's involvement in this project stems from a joint research interest in the site from within the group. This particularly related to the lack of detailed recording of the guns and a lot of discrepancy on the material noted to be present on the seabed. This led to the group to seek funding to allow for a diving based survey to be conducted on the site. Funding was successfully awarded by the British Sub Aqua Club Jubilee Trust, and the Maritime Archaeological Sea Trust. Whilst we sought this funding, preliminary research was completed and a desk based assessment was produced for the site.

Figure 1 Map showing the survey area (© Crown Copyright/database right 2013. An Ordnance Survey/EDINA supplied service.)

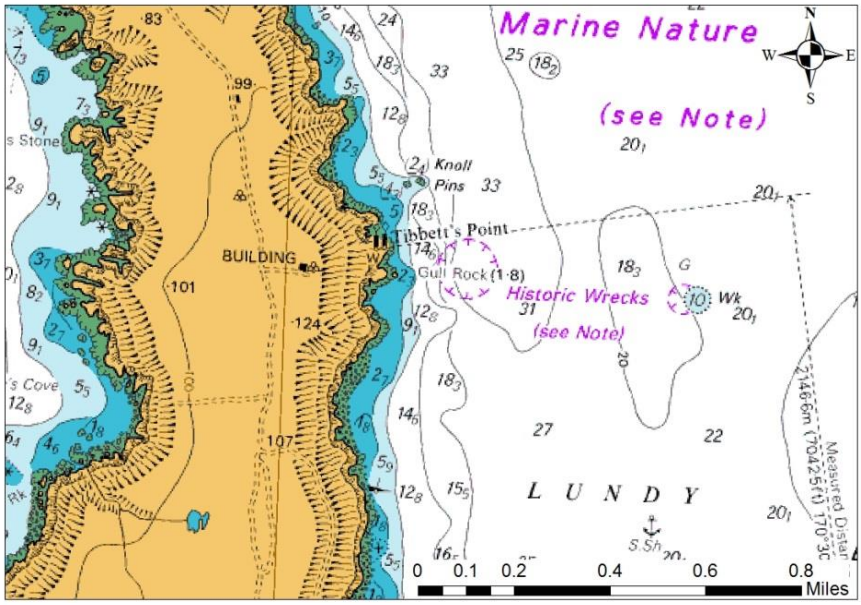


Figure 2 Chart showing the location of the Gull Rock and Iona II Wreck sites (© Crown Copyright/Seazone Solutions. All Rights Reserved. Licence No. 052006.001 31st July 2011. Not to be Used for Navigation)

Site location

The Gull Rock and Iona II wrecks lie to the east of Lundy Island (See fig 2), which lies to the north of Devon, on the approaches to the Bristol Channel (See fig 1). Lundy is the only island off the North coast of Devon, was the UK's first Marine Nature Reserve and No Take Zone and is also designated as a UNSECO Biosphere (Berry & Dixon 2008 P214). The area is renowned for its wildlife both above and below water which includes all five species of cup coral found in the UK, around 140 nesting species of bird, seals and Lundy Cabbage - a plant unique to the Island and of course Lundy puffins (Bradt 2010 p.225).

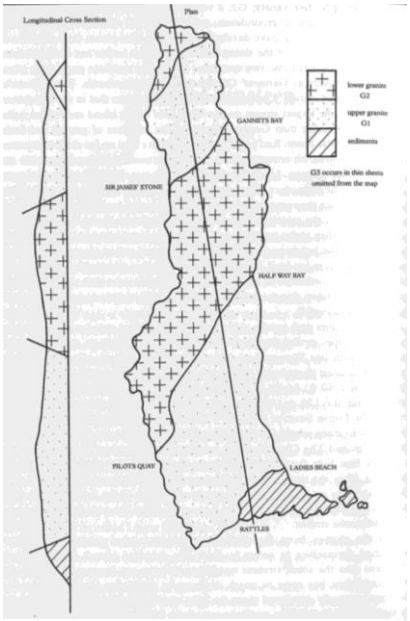


Figure 3 Geological map of Lundy Island (Langham 2011 p165-6).

Geological Information

The island of Lundy itself is comprised of upper and lower granite which was dated to 59 million years ago (See Fig 3). It is theorised to have been created by a Tertiary Volcano, believed to be 20 km in diameter (Tindle & Thorpe 1991). The Island is also is also theorised to have been covered up too 106m by the ice that reached Scilly, with higher sections of the island protruding the ice caps as Nunatak causing many of the diverse land forms seen on the island (Langham 2011 p165-6).

The Gull Rock Wreck site itself is it at the base of a submerged slope on the east of the Island. The slope is comprised of granite and is covered in sandy silt. At the base of the slope there is a very light silt layer that begins at the transition onto the level sea bed and extends out to the east.

Lundy Island's historical background

Lundy Island has evidence of human occupation or visitation stemming from the Neolithic period, the earliest evidence of human contact with Lundy Island is seen in evidence such as flint work and burial mounds being found scattered on the Island. In later periods there is evidence of Celtic farming and settlement across the Island from c. 2000BC. Following Celtic Occupation, the island is potentially marked on Carthaginian maps as part of the trade route to Bristol; however there has been no evidence found of Roman occupation (Langham 2011 p1-12).

Evidence has been found of a later occupation by Thomas's survey in 1969, this excavation found evidence of a 5th or 6th century settlement. The main composition of the site formed Beacon Hill Cemetery which is theorised to have held up to a hundred graves which lay alongside the settlement. Although there is little evidence that remains, it is likely that the Island was regularly visited by the Vikings as it is mentioned in several texts, there is also a collection of graves described as "giant's graves" that have been dated to the 9th century that is likely to have a Viking origin (Langham 2011 p10-12).

During 1160 the Knights Templar were granted the island, however it is unclear if they ever took over the island due to a dispute with the Marisco family. In 1235 William de Marisco family was both implicated in the murder of a messenger of Henry III and then the later attempted murder of Henry III, this led to Marisco fleeing to the island and constructing a stronghold. This was later taken by Henry III whom constructed a castle on the island to establish rule over the Island (Ternstrom 2008 p90-95).

During the period of the 12th and 17th centuries the Island was subjected to both European and African pirates, the culmination of this saw the Island held under Barbary Pirate control for five years from 1627(French, 2011 p 32-4). The 15th and 16th century's saw this activity grow to a very large scale, drawing English and Irish navies to try and quell the unwanted privateers. However, it was not until late in the 17th century that the issue was resolved by re-taking the Island from the pirates. This particular activity could explain the presence of the Gull Rock Wreck.

During the English Civil war Lundy Island was the last Royalist stronghold in the UK, only surrendering in 1656 after a yearlong siege (Duffy *et al.* 1992 p123). Following the civil war stronghold on the island, there was a large period of lawlessness during the 18th and 19th centuries. During this period, infamously Thomas Benson stored convicts that were meant for deportation on the Island as slaves. Benson later used the Island as part of an insurance swindle, sinking the Nightingale which was believed to be laden with an expensive cargo. However the cargo had been unloaded and stored within a cave constructed on the island by the slaves (Delderfield 1953).

Legal Protection surrounding the site

Due to the sites position within the important Lundy nature reserve and the sites designation, the following agencies were contacted for permissions to work on the site:

- English Heritage – Licences to survey the site under the Protection of Wrecks Act 1973
- Association of Inshore Fisheries and Conservation Authorities – to gain authorisation to place a shot line within the Lundy Marine Conservation Zone
- Lundy Warden – as the overseer of all activities on the island, must be kept abreast of diving activities

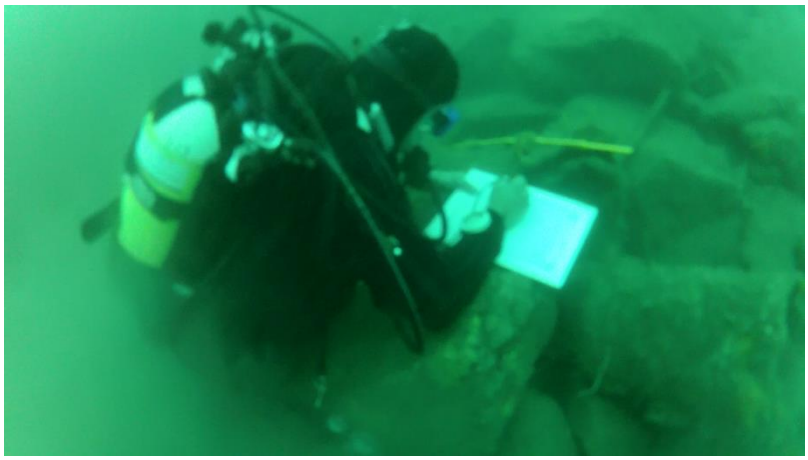


Figure 4 A diver recording one of the cannons on the Gull Rock Wreck

Wreck sites in the area surrounding Lundy Island

In the area surrounding Lundy Island there are over 200 vessels that have wrecked, of which only two are designated The Iona II, and the Gull Rock Wreck. A selection of the ten most renowned wreck's or dive sites is as follows:

HMS Montague - a British Duncan class battleship that ran aground in fog in 1906
The Kaaksberg – ran aground without loss of life in 1980
The Carmine Filomena - an Italian passenger ship sunk 1937
The Iona II – a Confederate blockade ship sunk in 1864
The Amstelstroom - sank off battery point in 1948
The Jenny – sunk 1797 carrying cargo of ivory
MV Robert – single screw coaster sunk off Tibett's point in 1975
The Ethel – struck the rocks off Great Shutter Rock in 1877
Heroine – brigantine sunk of the hen & chickens 9 men lost in 1882
SS Salado- Ran aground at the mouse hole in 1897

(Hiscock & Irving 2012 p44-8, English Nature 2001 p18-26, Dell 2011 p30)

Site history

The Gull rock wreck site was first discovered by John Shaw in 1968, however, the wreck was lost until it was re-identified in 1983. Following this a pre disturbance survey was completed during

which four cannon balls were lifted for identification purposes (Fenwick & Gale 1998 P56-7). In 1984 the site was listed under the Protection of wrecks act. Between 1989 and 2002 the Archaeological Diving Unit visited the site completing survey work (ADU 1993 p1-3). During these surveys the following features were noted:

- 15 Stone cannon balls
- Two wrought iron breech chambers
- A wrought iron gun
- Two cannon's
- A small pickaxe shaped concretion

The survey work that the ADU undertook included magnetometer and side scan sonar sweeps along with full site surveys, one of which identified a large metallic anomaly to the east of the site. Following the ADU's investigation off the site, Wessex Archaeology took over the assessment of the site. Wessex attempted a survey of the vessel in 2004 to assess presence and position of archaeological material. However, due to bad weather on the site, only one dive was attempted, during which they identified the two guns and a single cannon ball (Wessex archaeology 2005 p6-7). Their loss was related to severe deterioration on the site, looting or natural factors, or due to the weather limitations that this survey was conducted under.

The site has also had reports of Illegal Diving and looting. This has been evident in many ways. On site the number of cannon balls has significantly reduced from fifteen to one in the most recent survey. Additionally the position of certain archaeological features has changed over time particularly the position of a breach loading gun that appeared to have been dragged across the wreck (Robertson 1994 p62-4). The problem faced by looting on this site was illustrated in diver magazine when Kendall McDonald (1999) answered questions relating to the looting and damage in particular the theft of a breach loading gun and cannon balls and additional vandalism to a canon (scratching at the surface presumably to identify the construction material of the canon). Furthermore cannon balls removed from the site have been rumoured to be located in Penzance, Padstow, Appledore and the British Museum (Heath 1999 p2). This evidence illustrates a huge problem in the conservation of this wreck and illustrates the need to re-asses the archaeological material present on the site.

Figure 5 A dive team returning from a dive on the Gull Rock Wreck

Site Historical Timeline

The following site timeline was compiled by Wessex archaeology (2009 p3) and details the work completed by all organisations since the sites discovery. The timeline has been adapted to include the work completed by Bournemouth Underwater Marine Archaeological Diving Society.

1968: Site discovered by dive tour operator John Shaw.

1983: Site relocated fifteen years after the initial discovery.

1989: Site dived by Archaeological Diving Unit (ADU), who observed stone shot and a wrought iron gun. The ADU also detected a 'significant magnetic anomaly' 60 metres east of exposed material.

14th March 1990: Site designated under the Protection of Wrecks Act (1973).

1992: Site dived by ADU, who observed concretion in the approximate shape of a small pickaxe. No other items seen.

1993: Site dived by ADU, who observed previously reported broken iron gun and stone shot. The gun's position is said to be 175 metres from the summit of Gull Rock during a pre-disturbance survey by John Heath.

1994: Request to lift gun for identification and dating purposes refused. Favoured option was to record the gun on the seabed.

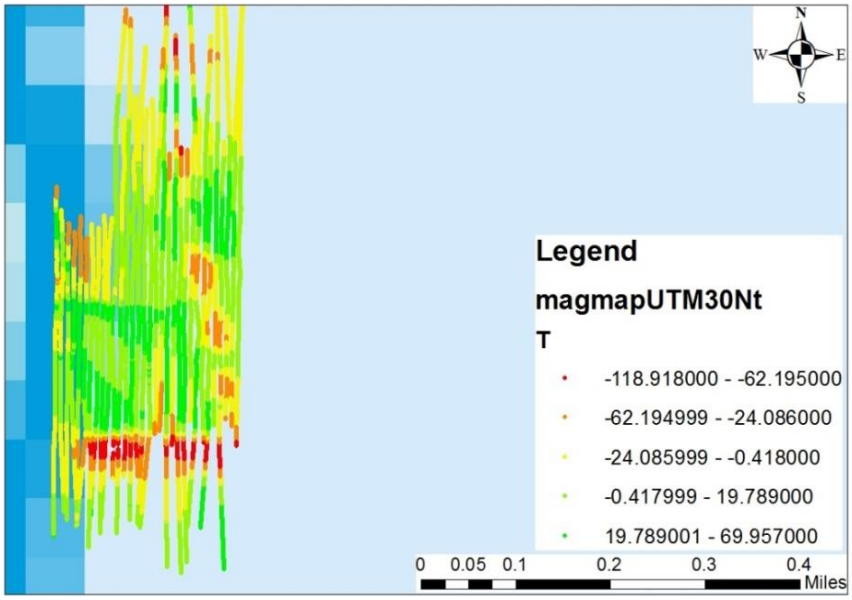


Figure 6 A map of the magnetometer survey conducted by Wessex Archaeology in 2008

1997: John Heath reported damage to broken gun, namely that a 0.1 metre section was missing from the rim, exposing iron beneath. The impression gained was that a diver had tried to find out the material of the gun underneath the concretion.

1999: John Heath informed DCMS that stone shot had been taken from the site and of the possibility that a breach gun may have been taken.

2000: Site visited by John Heath. Only three stone shot were visible and the broken gun had become encrusted with marine life.

2002: Sidescan sonar and magnetometer survey carried out by ADU.

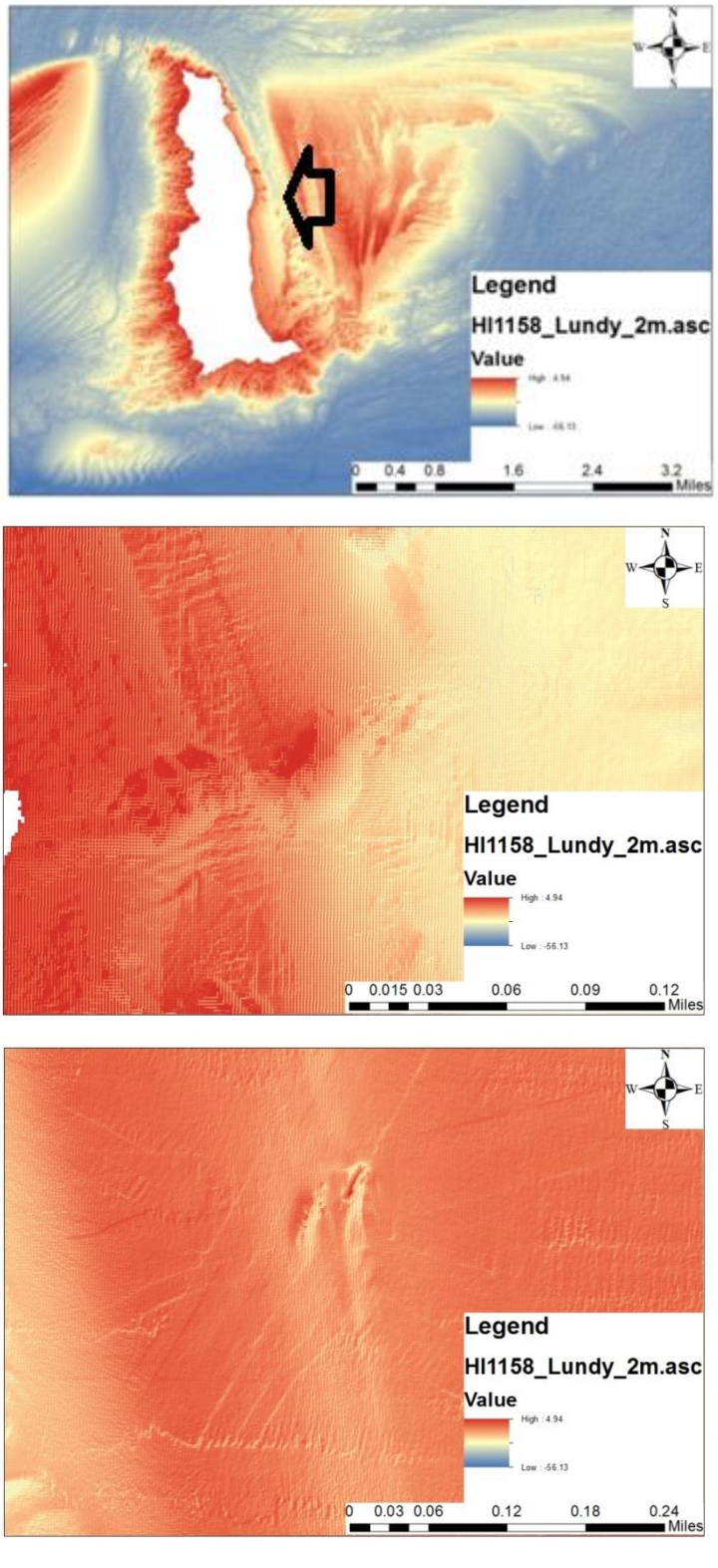


Figure 7 False colour composite bathymetry maps. (top) Lundy Island Bathymetry data (middle) Gull Rock Wreck (bottom) MV Robert & the Iona II

2004: Wessex Archaeology undertook non-intrusive diver survey to establish the presence and position of archaeological material.

2008: Wessex Archaeology undertook magnetometer survey.

2010-2: BUMAD undertake desk based assessment of the site

2013: BUMAD society undertook five day survey of the Gull Rock Wreck Site

GIS Data

Magnetometer Data

The magnetometer data has been provided from Wessex archaeology for the site from 2 surveys, one completed by Wessex in 2008, and a second by the ADU in 2002. However, the underlying magnetic geology has made picking particular targets very difficult, as there is a large amount of magnetic fluctuation recorded. The following image shows the area that the magnetometer survey covers, and the readings produced.

Bathymetry

The MCA has provided 2 meter resolution bathymetry for the area, and this has been very useful for identifying the sites. The whole area covered in the bathymetric survey can be seen in fig 7 (top) the Iona II and MV Robert (bottom) and finally the Gull Rock Wreck Site (middle.)

Aims and objectives

This research project has the overall aim to investigate the Gull Rock Wreck Site, and to compile all published sources and archival documentation with an up to date survey of the vessel.

The Initial aim to compile the data created on previous surveys and the completion of the desk based assessment has given us an indication of what condition the wreck was in during the previous work on site, including finds and remote sensing data. The next step in the project is to dive the site and assess presence and position of archaeological material and record the remaining finds. This will allow us to compare the site to the previously recorded condition, and will indicate if the site is degrading / being looted. The combination of these processes will allow for accurate and informed research on the wreck and will allow for dissemination of the findings for this important vessel through publication. The secondary aim is the continued training of Divers in marine archaeology that would be achieved through them working with more experienced team members. This would give them an opportunity to not only improve their archaeological survey skills but also their diving attributes as well. There was an additional research aim to investigate the Iona II and gain some additional information relating to her condition, if time permitted.

This breaks down into the following objectives:

- Locate the site using circle searches off the shot line
- Use the site plans made of the site to locate archaeological material
- Photograph the archaeological finds on the site
- Record the guns present on the site
- Train BUMAD divers in underwater survey techniques
- Dive the Iona II to open up future research, and to undertake specific analysis of the degradation of the site

Figure 8 Diver returning from a survey dive

Methodology

The Desk based assessment was produced following the guidelines set out by the Institute for Archaeologists (IFA), which identifies the sources to be considered for the assessment. The predominant amount of this information generated has been used to compile the opening statements and the GIS section in results. The sources consulted are as follows:

- Archaeological Databases (including: Historic Environment Records, and the National Monuments Record)
- Historic / published documents (including: contemporary records and published sources)

- Cartographic and pictorial documents (including: contemporary pictures)
- Aerial Photographs (including: satellite images, aerial images)
- Secondary Sources (including: landscape studies, local knowledge, dissertations)

(IFA 2012, p11-2)

The Field work element of the project was subsequently planned using the data generated on the site. The team operated off a single shot line deployed on the site location provided by Wessex Archaeology (2009 p2). This identified the site location and the statutory instrument as follows:

- Site Location: Lat. 51° 11.1476' N Long. 04° 39.5076' W (Unspecified Datum)
- Statuary Instrument: Lat. 51° 11.11' N Long. 04° 39.41' W (WGS84)

Once the shot and buoy were in place the team completed circle searches off the shot line to identify the site. Once identified, searches were used to identify additional site material using a base line that was set up between the two cannon. All archaeological material was photographed using photo scales, the cannonballs and guns were recorded using callipers to accurately measure there diameter. The guns had scale drawings made, recording key features, again using the callipers to gain accurate diameters.

Diving Platform

All of the diving elements of the project, and our transportation to the island were based off the local dive charter boat the Lundy Murrelet. The vessel was skippered by Collin Eastman, a helmsman on the local lifeboat with over thirty years of experience of diving around Lundy. Throughout the project Collin's experience of diving and working around the Island was invaluable to helping us optimise our time on site, and the efficiency of our visit to the island.

Figure 9 The Lundy Murrelet

Project Team

The project dive team was mainly comprised of Bournemouth Underwater Diving Society. Whilst we also were lucky to have a journalist whom was interested in our work undertake 2 dives with the team. Full details are as follows:

Name	Project Role
Paris Iliopoulos	Project Manager
Tom Cousins	Diving Supervisor
Dave Parham	Nominated Project Archaeologist
James Spencer	Project Illustrator
Grant Bettinson	Archaeological Diver
Tom Cloherty	Archaeological Diver
Jessica Berry	Archaeological Diver
Stuart Philpot	Photographer / Journalist

Results

2012 Planned Survey Dates

The diving based element of the project had originally been planned around a set of tides at the end of September. However, weather worked against us, and we were unable to proceed with the project. As can be seen in the following images (fig 10), severe winds would have prevented us from being able to make the crossing to the island until halfway through the project

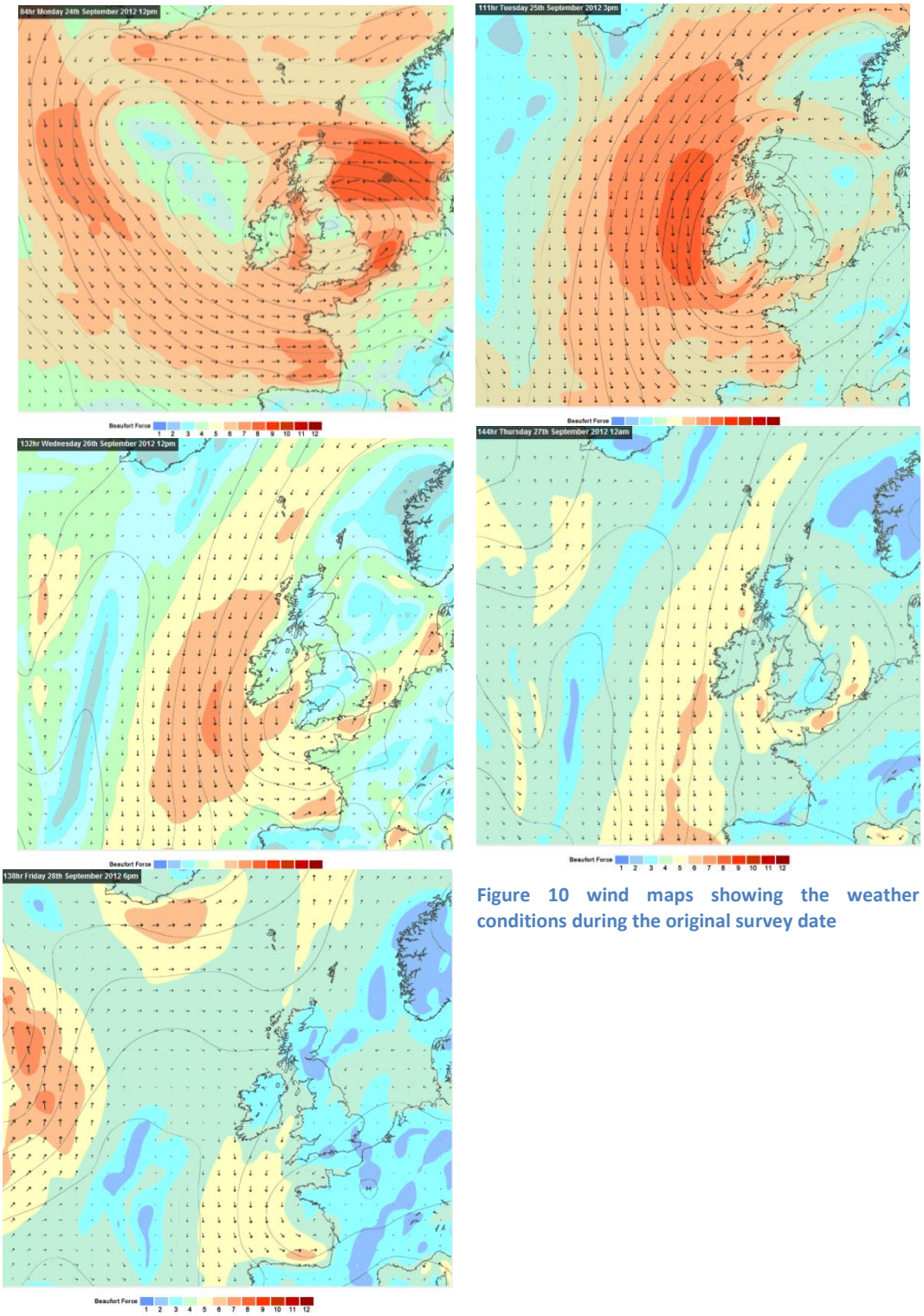


Figure 10 wind maps showing the weather conditions during the original survey date

Dive based Results

The project conducted a total of 36 dives completed by 6 team members, this worked out to be a total of 1063 minutes or 17.7 hours. This allowed less experienced members of the team to learn a wide variety of underwater archaeological tasks that they had not experienced before. A full breakdown of the work conducted by each dive team is detailed in the following table. For a full breakdown of each dive, see appendix item 1.

Date	Site	Diver	Dive task	Result
27 June 2013	SS Salado	Paris Iliopoulos, Grant Bettinson & Tom Cloherty	Acclimatising dive (to get used to boat and local conditions)	Easy dive on a shallow site
27 June 2013	SS Salado	Tom Cousins & James Spencer	Acclimatising dive (to get used to boat and local conditions)	Easy dive on a shallow site
27 June 2013	Gull Rock	Paris Iliopoulos & Tom Cousins	Locate and identify the site	Identified the small modern metal object marked on original site plans.
27 June 2013	Gull Rock	James Spencer, Grant Bettinson & Tom Cloherty	Locate and identify further material from the site	Identified the metal object, and investigated the north side of the site
28 June 2013	Gull Rock	Paris Iliopoulos, Tom Cousins & Grant Bettinson	Locate and identify further material from the site	Identified the two guns and the bluestone
28 June 2013	Gull Rock	James Spencer & Tom Cloherty	Record the Broken gun	Made a bird's eye view scaled drawing of the two sections of the gun
28 June 2013	Gull Rock	Grant Bettinson & Tom Cloherty	Conduct circle searches looking for cannon balls	Located an additional three cannonballs
28 June 2013	Gull Rock	Paris Iliopoulos & James Spencer	Record the intact canon	Recorded the bird's eye view of the intact canon, and located an additional cannon ball
29 June 2013	MV Robert	Tom Cousins & Tom Cloherty	To assess the MV Robert and cross over on to the Iona II and photograph her hull for signs of deterioration	Dived on the MV Robert and deemed there to be too little bottom time to cross to the Iona II.
29 June 2013	Area to the east of the Gull Rock Wreck	Paris Iliopoulos, James Spencer & Grant Bettinson	Dived the location of the magnetic anomalies to the east of the Gull Rock Wreck to see if any surface features were visible	No features were found to be visible on the seabed. Completed circle searches from the approximate central position of anomaly.
29 June 2013	Gull Rock	Tom Cousins & Tom Cloherty	Conduct circle searches on the higher areas of the cliff face attempting to find new material	The area appeared to be devoid of new archaeological material
29 June	Gull Rock	Paris Iliopoulos & Stuart Philpot	Undertake detailed photography on the	Two of the cannon balls and the both the guns were

2013			identified features	photographed
29 June 2013	Gull Rock	James Spencer & Grant Bettinson	Finish drawing the cannons	Profile drawings were made of both the guns
29 June 2013	Caves on north of Island	Paris Iliopoulos, Tom Cousins, Tom Cloherty, Stuart Philpot, James Spencer, Grant Bettinson	Short shallow pleasure dive with seals, utilising partial filled bottles.	

Gull Rock

Observations

During the survey of the site, the following archaeological features were identified on the site:

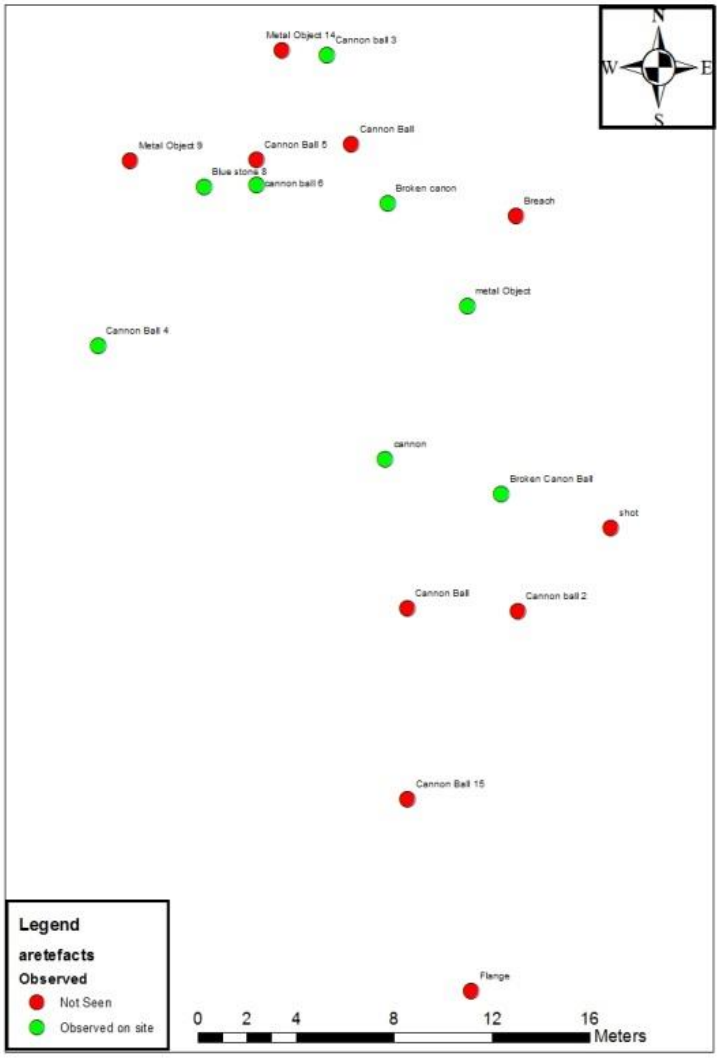


Figure 11 site map displaying the features observed on the site during the 2013 survey of the Gull Rock Wreck

- The Broken Cannon
- The intact canon
- 3 complete cannonballs
- 1 ½ cannonball
- The Modern metal object
- The Bluestone previously identified on the site

Plotting of finds

The collection of finds were analysed on site utilising the site plans previously compiled. This allowed on site verification of features located on site. These plans were identified during the desk based assessment and are viewable in additional images – site plans. This allows for the observed materials to be mapped utilising there previously recorded positions, as can be seen in fig 11.

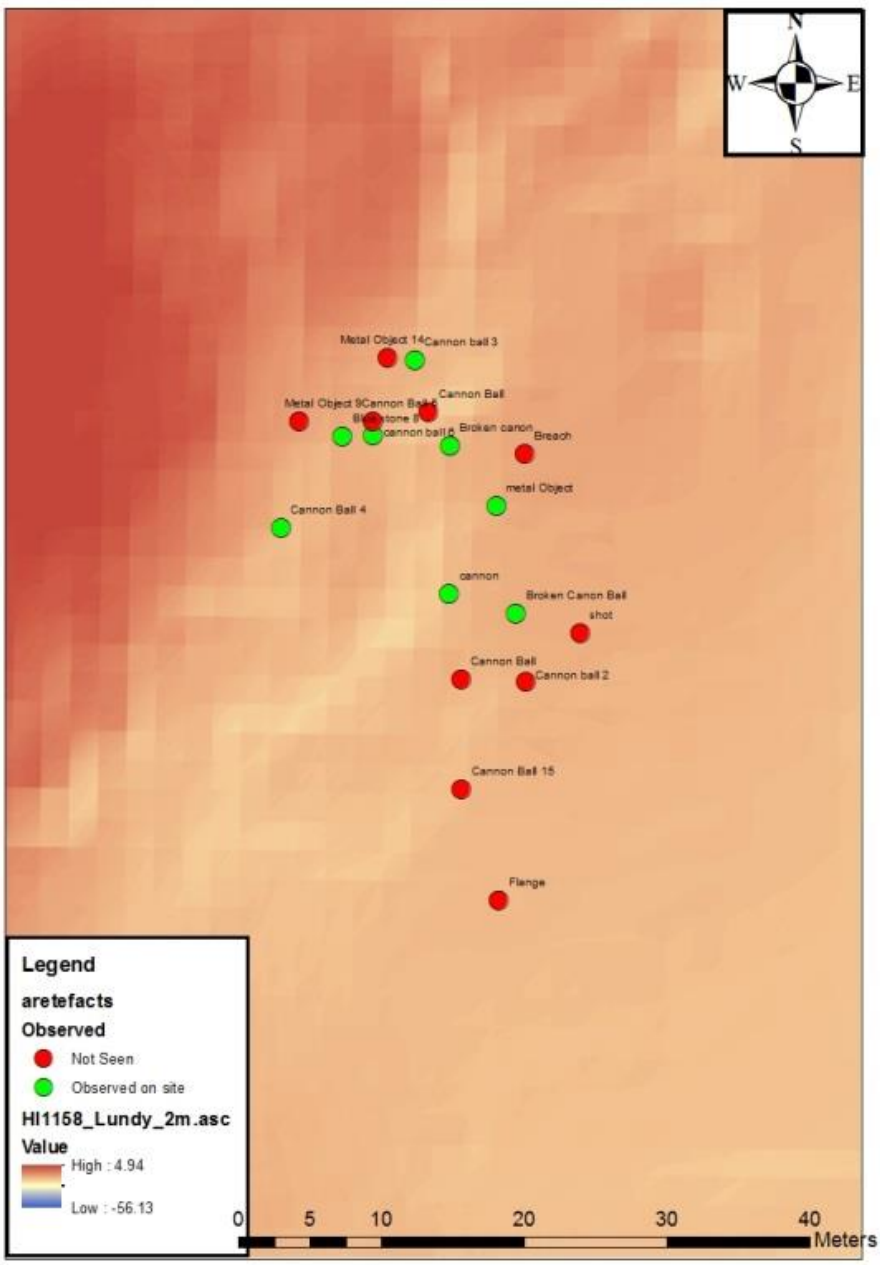


Figure 12 The observed finds scatter plotted over the sites bathymetry

It was also deemed that it would of use for further research on the site to better understand the topographical positions of the archaeological material on the site. Hence the finds scatter has been plotted to the bathymetric survey data provided by the MCA. This maps the position of each individual finds position on the slope, the depth it is found, and if it was observed (see fig 12).

Recording of features

The two small features and potentially unrelated features (the bluestone and the modern metal object) were photographed (See additional images), and there locations noted.

The cannonballs that were identified were both photographed, and there dimensions were recorded. The photographs can be found in additional images, and the measurements of the cannonballs are as follows:

- Cannonball 1 – 145mm diameter
- Cannonball 2 – 115mm diameter
- Cannonball 3 – unmeasured (found on last dive – diver did not have callipers)
- Cannonball 4 (halved) – 130mm diameter

Cannon 1

The first cannon to be looked at is the broken cannon. The cannon was originaly recorded as being intact, and it was identified by John Heath as being broken prior to the sites designation. The feature was both photographed (see aditional images), and drawn in scale (see fig 13). The cannon mesasured 1.51m in legth, and varied in breadth between 33 and 24cm at the muzzle. The cannons bore was 158mm. However, when considering these dimensions, the cannons were heavily concreted, which affects the meausurements.

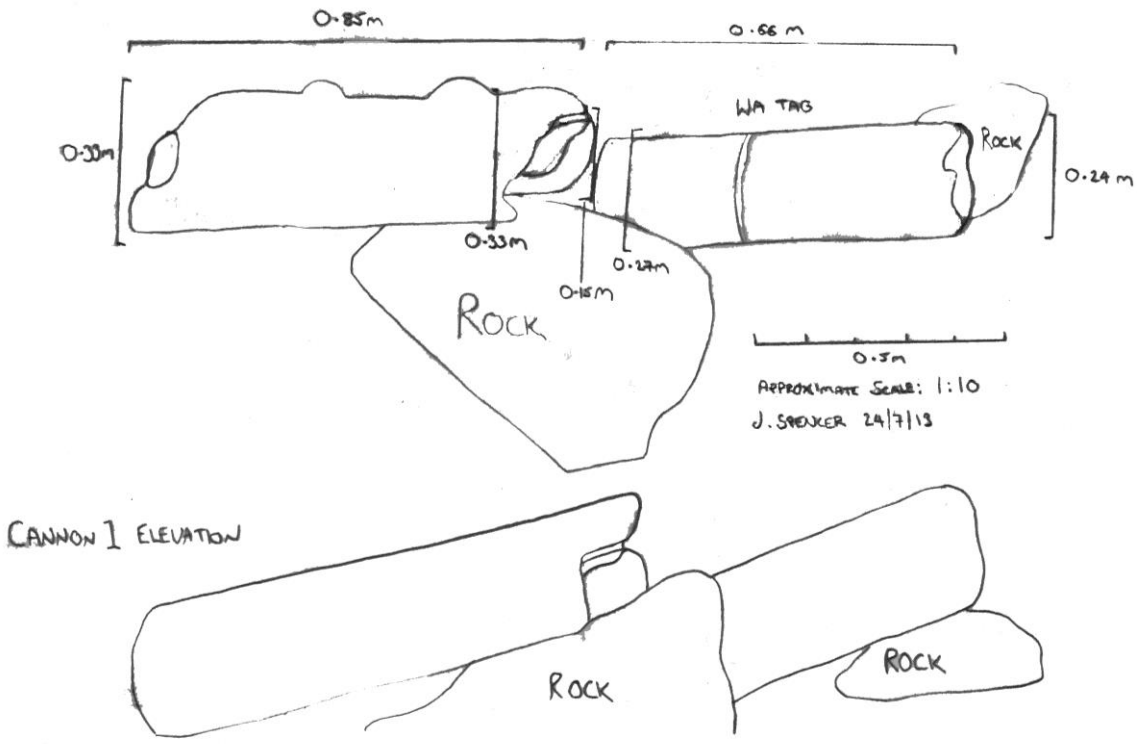


Figure 13 1:10 scale drawing of the broken cannon

Cannon 2

The second cannon remains intact on the seabed, still demonstrating the evidence of damage (removed concretion) first reported by Heath. The canon is burried up to the mid section in sandy gravel, but sits with the muzzle prutruding the seabed. The cannon was again photographed (see aditional images), and drawn in scale (see fig 14). The exposed section measured 66cm in length, varied between 21.5 and 26.5cm in bredth. The bore of the cannon is 8.5 cm.

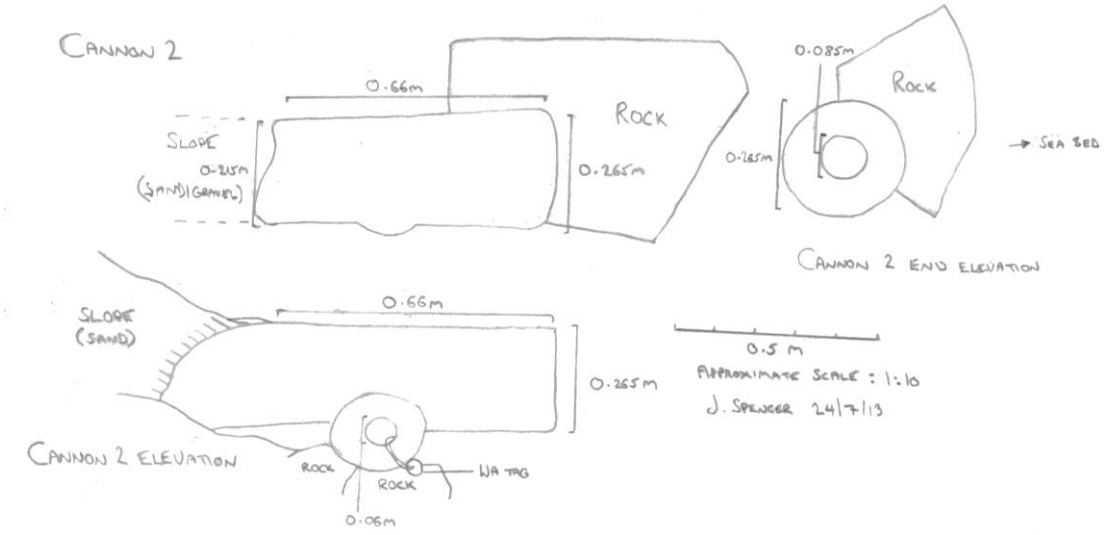


Figure 14 1:10 scale drawing of the complete cannon

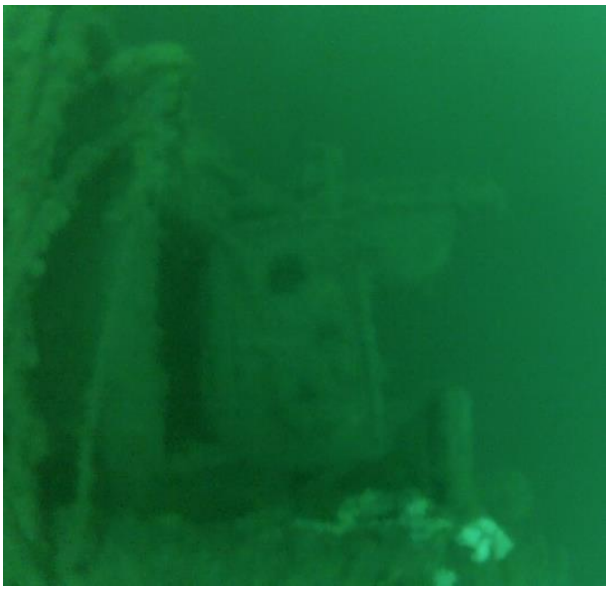


Figure 15 Deck hatch on the MV Robert

Iona II

As work proceeded on the Gull Rock Wreck site, it was deemed possible or us to take two dives away from the main site. It was decided that we should split into two teams, one diving the MV Robert and proceed to the stern to follow a line to the Iona II, analysing the condition of the two wrecks. The second team looked at the surface of the magnetic anomaly to the east of the Gull Rock Site. However, the MV Robert / Iona II team found that by the time they had covered the MV Robert, there was little dive time left to cover the Iona II. Hence the team ascended from the MV Robert, without attempting to traverse between the sites.

Concluding statements

Recommendations for future research

The study has identified several areas for further research on the site. Firstly analysing the site with handheld underwater magnetometers would indicate the potential for more archaeological material that are buried in the sediments. There is a large magnetic anomaly to the east of the site, first identified by John Heath that should also be investigated as part of this work. As the majority of finds are at the bottom of a submerged slope there is the potential for archaeological remains further up the slope or buried in the soft sediment at the base. A systematic survey should be conducted in these areas.

Conclusion

The project aimed to identify what finds currently remained on the seabed, to record the cannon in detail, and to train inexperienced divers in archaeological techniques. The project identified a total of eight finds that had been identified on previous surveys. To identify illegal diving activity on the site the finds should be compared with the contents the last time features went missing on the site. Heath last (1999) reported the issues with illegal diving on the site stating that the breach gun went missing, damage to the intact cannon and two missing cannon balls. This survey managed to identify all the features identified by Heath as being present with the exception of one cannon ball. Our lack of identification of the additional cannonball does not condemn it to be missing, due to the difficulty of picking out the limestone features on a submerged rocky slope. It appears that the improved protection on the site in recent years has ended any illegal diving activities or looting being conducted on the site, as there is no evidence of such activities. In regards to recording the ordinance, both the cannons have successfully been recorded in detail, with photography and detailed drawings being made of the guns. Additionally, three of the cannonballs have been identified and recorded. Finally, the whole process allowed for several members of the society to gain important skills in underwater survey through first hand experience on an important site and project. This was true for all team members with managers gaining experience of how to set up and runs such projects whilst the less experienced members of the team learnt underwater search methods as well as recording skills.

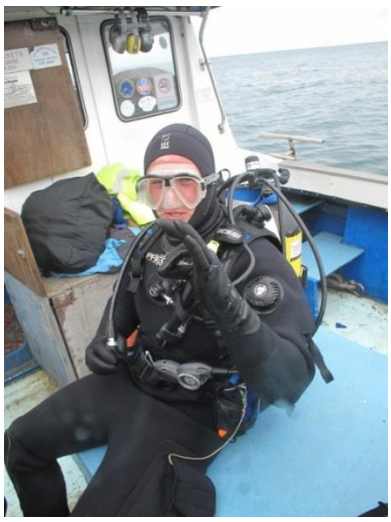
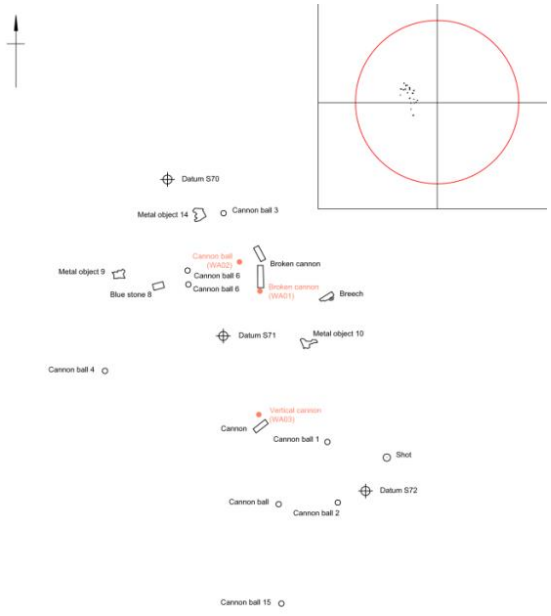


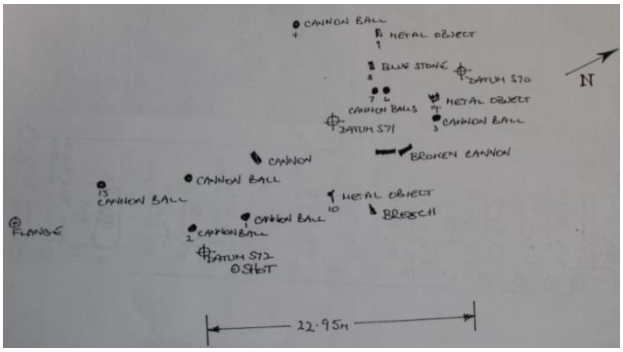
Figure 16 Diver Tom Cloherty signalling he's ready for the next dive

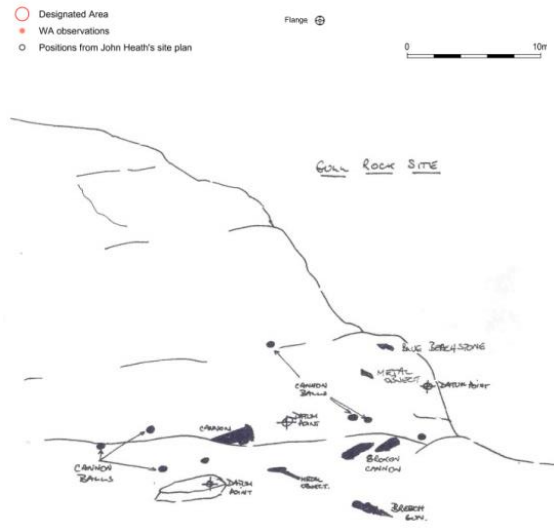
Additional Illustrations

Site Plans

During the aforementioned surveys of the site, four previous site plans have been made. The first two site plans are based on the original john heath site plan (top right), with the latter showing the observations made by Wessex Archaeology (top left). The latter two display the site in profile, on the submerged slope.







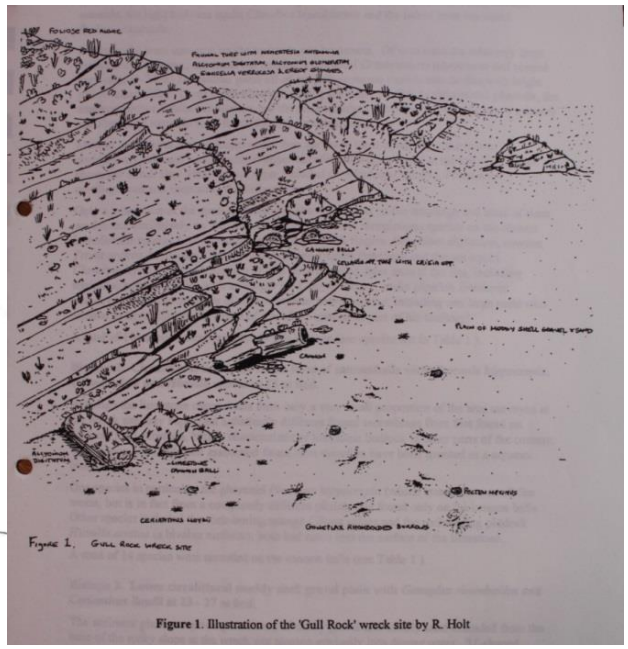


Figure 1. Illustration of the 'Gull Rock' wreck site by R. Holt

Figure 17 the four pre-existing site plans

Archaeological Images

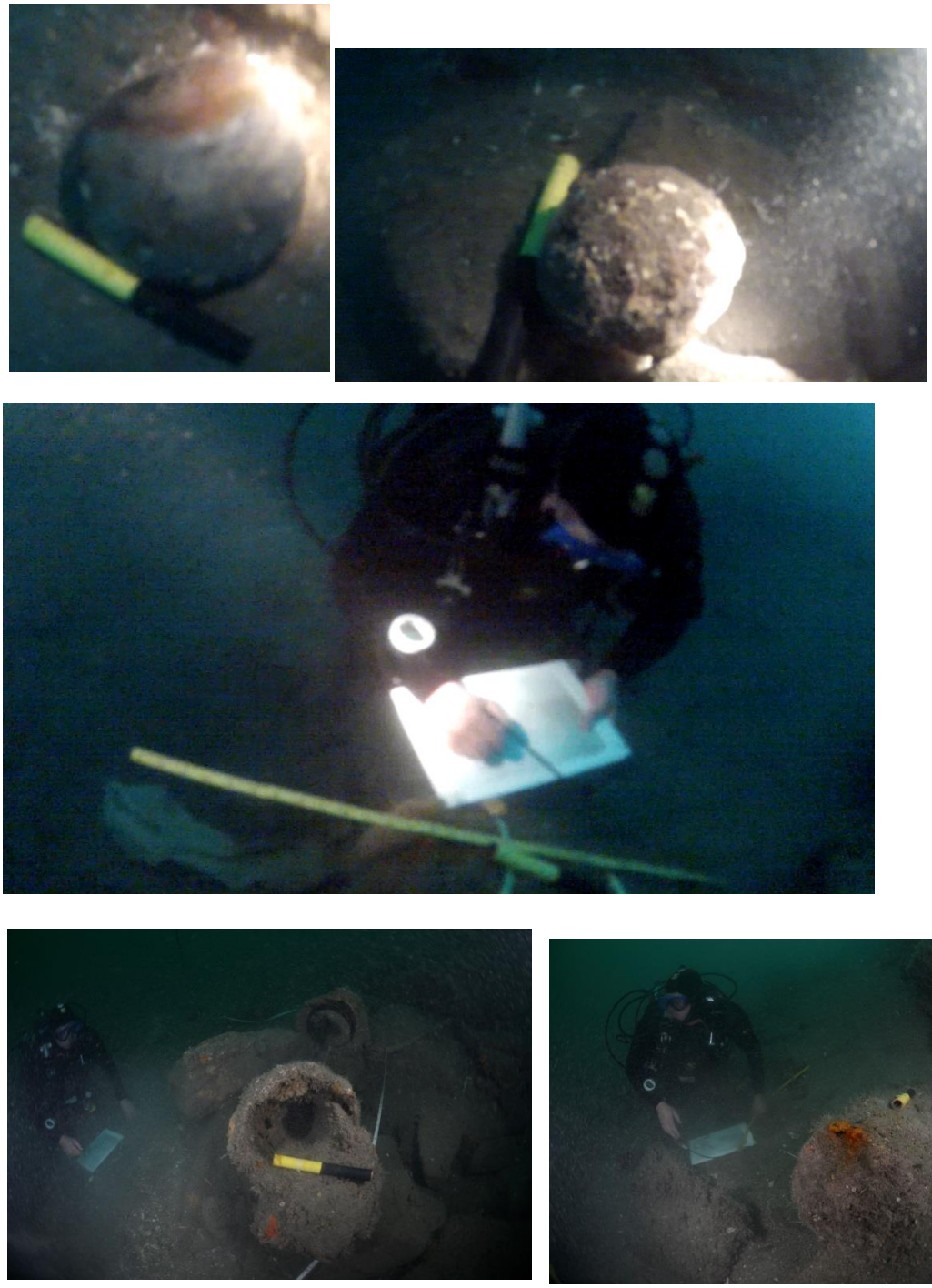


Figure 18 (top left) Bluestone (Top right) Limestone Cannonball (Middle) diver recording cannon (bottom left) Two sections of broken cannon (cannon 1) from the muzzle (Bottom right) Muzzle of complete cannon whilst being recorded

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Appendix

Appendix Item 1 – Full Dive Log

The following table details all of the dives by all divers that were conducted during the project. There was a total of 36 dives conducted, with a total of 1063 minutes or

Dive No	Date	Site	Diver	Time In	Time Up	Max Depth	Time (min)
1	27 June 2013	SS Salado	Paris Iliopoulos	10:24:00 AM	11:07:00 AM	15m	43
2	27 June 2013	SS Salado	Grant Bettinson	10:24:00 AM	11:07:00 AM	15m	43
3	27 June 2013	SS Salado	Tom Cloherty	10:24:00 AM	11:07:00 AM	15m	43
4	27 June 2013	SS Salado	Tom Cousins	11:34:00 AM	12:26:00 PM	15m	52
5	27 June 2013	SS Salado	James Spencer	11:34:00 AM	12:26:00 PM	15m	52
6	27 June 2013	Gull Rock	Paris Iliopoulos	02:43:00 PM	03:17:00 PM	28m	34
7	27 June 2013	Gull Rock	Tom Cousins	02:43:00 PM	03:17:00 PM	28m	34
8	27 June 2013	Gull Rock	James Spencer	03:53:00 PM	04:18:00 PM	28m	25
9	27 June 2013	Gull Rock	Grant Bettinson	03:53:00 PM	04:22:00 PM	28m	29
10	27 June 2013	Gull Rock	Tom Cloherty	03:53:00 PM	04:22:00 PM	28m	29
11	28 June 2013	Gull Rock	Tom Cousins	02:34:00 PM	03:10:00 PM	28m	36
12	28 June 2013	Gull Rock	Paris Iliopoulos	02:34:00 PM	03:10:00 PM	28m	36
13	28 June 2013	Gull Rock	Grant Bettinson	02:34:00 PM	04:22:00 PM	28m	48
14	28 June 2013	Gull Rock	James Spencer	03:49:00 PM	04:22:00 PM	28m	48
15	28 June 2013	Gull Rock	Tom Cloherty	03:49:00 PM	06:07:00 PM	28m	18
16	28 June 2013	Gull Rock	Grant Bettinson	05:38:00 PM	06:07:00 PM	28m	18
17	28 June 2013	Gull Rock	Tom Cloherty	05:38:00 PM	07:14:00 PM	28m	36
18	28 June 2013	Gull Rock	Paris Iliopoulos	06:45:00 PM	07:14:00 PM	28m	29
19	28 June 2013	Gull Rock	James Spencer	06:45:00 PM	07:14:00 PM	28m	29
20	29 June 2013	MV Robert	Tom Cousins	09:29:00 AM	09:55:00 AM	26m	36
21	29 June 2013	MV Robert	Tom Cloherty	09:29:00 AM	09:55:00 AM	26m	36

22	29 June 2013	Area to the east of Gull Rock	James Spencer	10:25:00 AM	10:46:00 AM	24m	21
23	29 June 2013	Area to the east of Gull Rock	Paris Iliopoulos	10:25:00 AM	10:46:00 AM	24m	21
24	29 June 2013	Area to the east of Gull Rock	Grant Bettinson	10:25:00 AM	10:46:00 AM	24m	21
25	29 June 2013	Gull Rock	Tom Cousins	01:36:00 PM	01:54:00 PM	28m	28
26	29 June 2013	Gull Rock	Tom Cloherty	01:36:00 PM	01:54:00 PM	28m	28
27	29 June 2013	Gull Rock	Paris Iliopoulos	01:52:00 PM	02:12:00 PM	28m	28
28	29 June 2013	Gull Rock	Stuart Philpot	01:52:00 PM	02:12:00 PM	28m	20
29	29 June 2013	Gull Rock	James Spencer	01:52:00 PM	02:12:00 PM	28m	20
30	29 June 2013	Gull Rock	Grant Bettinson	01:52:00 PM	02:12:00 PM	28m	20
31	29 June 2013	Caves on north of Island	Paris Iliopoulos	04:40:00 PM	04:57:00 PM	5m	17
32	29 June 2013	Caves on north of Island	Tom Cousins	04:40:00 PM	04:57:00 PM	5m	17
33	29 June 2013	Caves on north of Island	Tom Cloherty	04:40:00 PM	04:57:00 PM	5m	17
34	29 June 2013	Caves on north of Island	Stuart Philpot	04:40:00 PM	04:57:00 PM	5m	17
35	29 June 2013	Caves on north of Island	James Spencer	04:40:00 PM	04:57:00 PM	5m	17
36	29 June 2013	Caves on north of Island	Grant Bettinson	04:40:00 PM	04:57:00 PM	5m	17

Appendix Item 2 – Project Budget

The following table details all funds and expenses born by the project account. Detailed receipts are available for all expenses.

Description	Money in	Money Out	Balance
Opening Balance			£0.00
BSAC Jubilee Trust	£1500		£1500.00
Maritime Archaeological Sea Trust	£750		£2250.00
Volunteer contribution – 5 x £150	£750		£3000
Boat Charter		£2200	£800
Accommodation		£640	£160
Island Entrance Fees 5 X £5		£25	£135
Kit transportation (on island)		£15	£120
Minibus Hire & petrol		£128	£0
Final Balance:			£-8 (covered by manager)

Appendix Item 3 – Diving Risk Assessment

All diving will be undertaken in accordance with the BS-AC Safe Diving Practices guidance.

Hazard	Risk	Level of Threat	Countermeasure	Final Level of Threat
Diving safety	Poor diving practice	Moderate	All diving will strictly adhere to the BS-AC *Safe Diving Practices* guidance.	Inter-mediate
	Equipment failure	Moderate	Divers will provide their own equipment which will be configured in accordance with BS-AC *Safe Diving Practices* guidance. Additionally all equipment will be checked that it is has been fully serviced in the last 12 months.	Inter-mediate
Shipping	The area lies around Lundy Island which is subject to a medium level of small boat traffic. There is a possibility that this traffic may interfere with diving operations causing a severe risk to the diver.	Moderate	Whilst divers are in the water the DSV will fly the code Flag 'A' to warn other water users that diving operations are underway. A constant watch will be maintained by the surface crew for potentially hazardous shipping movements and in the event that these occur the diver will be shielded from the offending craft by the small cover boat.	Inter-mediate
Entrapment	There is a no greater risk of encountering net or lines in the area than that found in recreational wreck diving. Although as this is a no take zone there may be a slight reduction in the amount of line / net found.	Inter-mediate	As before all diving will strictly adhere to the BS-AC *Safe Diving Practices* guidance. In particular diving will be carried out as a 'buddy pair' and all divers will carry a dive knife	Low
Poor Surface visibility	The onset of restricted surface visibility will make the chances of the diving support vessel or divers at risk of collision with other shipping traffic in the area.	Moderate	Prior to any diving operations commencing weather forecasts will be checked and diving will not be started if forecast or actual conditions show that surface visibility could fall below that which is thought to be safe (1km). On site a constant check will be made on the weather and the divers will be recalled if conditions deteriorate.	Inter-mediate
Water Temp.	The sea temperature is reported to be between 14 and 16 'C.	Moderate	All divers are required to use either dry suits or suitable wet suits.	Inter-mediate
Boat Access	Access is not	Inter-	Entry to the water will be made by jumping	Low

	considered to be any greater risk than occurs in general recreational diving.	mediate	from the boat (less than 1m). Access back on to the boat is via a dive ladder. The boat will carry a means of recovering an injured diver from the water at all times.	
Breathing Gas	The depths being dived are less than 35m.	Inter-mediate	All diving will be conducted with air being used as the breathing gas. All dives will be planned using the BS-AC 88 tables. All divers will cease dives upon reaching 50bar.	Low
Emergency facilities	The nearest decompression chamber is located in Plymouth. In the event of an accident first aid will be given by a trained member of the diving team. The skipper will contact the emergency services and arrange evacuation	Inter-mediate	The dive boat will carry all standard first aid equipment. The diving team will have a minimum of two members trained in first aid. The dive boat will have an operational marine radio to be able of summoning the emergency services.	Low
Depth	Diving at deep depths of water increases the risk of nitrogen narcosis and decompression sickness	Moderate	The operations are to be conducted in between 0 and 35 meters of water. At these depths there is the risk presented by nitrogen narcosis and there is also risk of decompression sickness. In relation to the prevention of decompression sickness the following measures will be taken. Firstly, divers will build up too diving at such deep depths by completing training dives to this depth. Secondly, dives will be planned with the deepest of the day to be completed first. Third, divers will plan their dives before entering the water using BSAC 88 tables and this will include planning the decompression stops that will be required. Additionally, all divers will use dive computers to back up the pre-dive planning and in cases where the two decompression models conflict the most conservative is to be used. Furthermore, in cases where dives reach the upper limits of a decompression limits divers will proceed onto the greater decompression stop recommendation. As an aid the shot line will be marked at every meter to aid in ascending. The diving supervisor of the day will be made aware of the nearest hyperbaric chamber (Plymouth) and of the procedures to follow in case of an incident which include: emergency first aid, details on contacting the coastguard and relevant organizations to contact for further information (DDRC Plymouth).	Inter-mediate
Weather	The area is relatively exposed to adverse weather conditions.	Moderate	A weather forecast will be obtained prior to diving operations beginning. If the forecast indicates that the weather could be unsafe	Inter-mediate

			Diving operations will not be undertaken. On site a constant check will be kept on weather conditions and diving Operations will be abandoned when weather conditions appear likely to become hazardous.	
Underwater Visibility	Conditions can cause visibility to be poor in the area.		In these situations only experienced divers will be used. They will be in constant visual or physical contact with each other. In a situation that they become separated they will surface immediately	Inter-medi ate
Underwater currents	The area is exposed to underwater currents.	Inter-mediate	All diving work will be conducted at slack water. Support boat will not be moored and will be kept in constant readiness to retrieve divers that could have been swept off site. Each diver will be equipped with DSMB and which will be used if they are swept off site	Low
Diving support vessels	The master of the vessel should be suitable experienced in working with SCUBA divers.	Inter-mediate	The boat proposed for charter is a MCA Code of Practice category 2 Vessel that is experienced at working with divers.	Low
Illumination	Diving in low light situations will increase risk of becoming disoriented under water and can impede use of equipment.	Inter-mediate	All diving will take place during daylight hours.	Low

Appendix Item 4 – Equipment list

In addition to the below shared kit list, all team members were requested to bring their own diving kit (dry suit, glove, hood, fins, regulators, weight belt and BCD etc.) and camping equipment (tent, sleeping bag etc.).

Item	Number
15L Cylinders	10
3L Pony cylinders	2
BSAC Dive Tables	1
Cable ties	2 packs
Cameras	4
Camping Stove	2
Cannon Measuring calipers	1
Drawing Boards	6
Drop Line	1
Electrical / Duct tape	3
First Aid Box	1
Gas Canister for cooker	1
Laminated Site Plans	3
Licenses & identification	2
Mobile Galley	1
Oxygen	2 Cylinders
Permatrace	Pack
Photo scales	6
Sandbags (for shot)	3
Shot Buoy	1
Spare Dive kit	1 complete set
Spare Hose Box	1
Tapes	6
Toolbox	1