

# Dredged Up

from the past

Autumn 2011

Archaeology Finds Reporting Service Newsletter

## Protocol Update

Welcome to Issue 9 of Dredged Up, the newsletter of the BMAPA/TCE/EH Protocol Implementation Service.



*Awareness visit at Cemex's Leamouth Wharf*

We are delighted to announce that funding through a joint partnership between BMAPA, The Crown Estate and English Heritage has been provided to continue the Awareness Programme for the next 18 months. The programme includes awareness visits to wharves and 3 further

issues of the newsletter. Several visits have already taken place. If you would like to book an awareness visit, contact the Implementation Service on:

[protocol@wessexarch.co.uk](mailto:protocol@wessexarch.co.uk)

Since the last issue, many interesting finds have been reported through the Protocol, demonstrating the wealth and diversity of archaeology on the seabed. See page 2 for details.

Cannonballs are often reported through the Protocol. They can provide important information about maritime activity in the past. See pages 4-5 to find out more.

Since the Protocol began, over 800 individual finds have been reported through the Protocol. These finds can inform future research and are frequently referenced in reports. Pages 6-7 discuss how these finds are supporting further archaeological research.

### Team News

Gemma Ingason returns following a year of maternity leave. She rejoins Katie Card and Sarah Phillips working on the Protocol, with Euan McNeill managing the project.



*From the left: Gemma, Katie and Sarah*

Remember, if you have any questions about finds, finds reporting or the Protocol, don't hesitate to get in touch with the team at Wessex Archaeology.

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[protocol@wessexarch.co.uk](mailto:protocol@wessexarch.co.uk)

## Finds from 2010/2011 so far

In November 2010, Harry Gilham at Brett Aggregates Cliffe wharf discovered this break-action air rifle. It was dredged from Licence Area 340 off the south-east coast of the Isle of Wight. The rifle dates to post-1950 and it is likely to have been lost overboard from a ship.



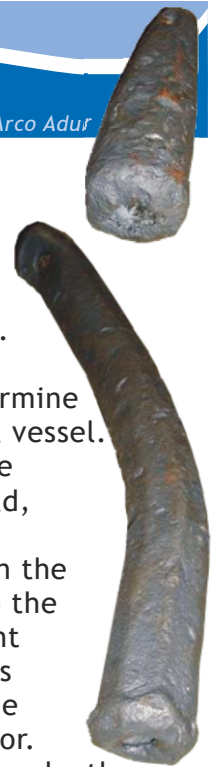
A fragment of mammoth bone was discovered by M. Bednarski on board *Sand Falcon* from Licence Area 102. Andy Currant at the Natural History Museum identified it as part of the jaw bone from an exceptionally large mammoth. Mammoth and other animal remains are often found in waters around the coast of the UK, deposited more than 10,000 years ago when these areas were dry land and Britain was part of mainland Europe. So far this year six prehistoric animal finds have been reported through the Protocol.



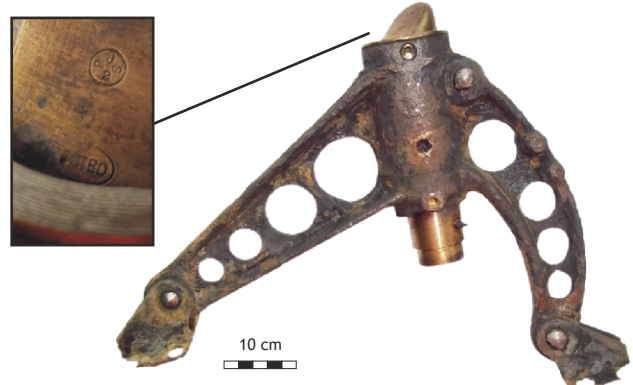
At Brighton Wharf, M. Pettitt spotted a fragment of pot which had been dredged by *Sand Harrier* off the coast of the Isle of Wight.

The fragment is from a Dundee Marmalade pot and dates to the late Victorian period (19th century) or possibly the early 20th century. It is likely to have been discarded as rubbish from a Victorian or later vessel. However, if further associated material emerges from Area 137 it may then indicate the site of a shipwreck.

Darryl Mason on board *Arco Adur* reported two sounding leads from Area 240. For over 2000 years sounding leads have been used to determine the depth of water beneath a vessel. There is a small dimple on the underside of the sounding lead, which was filled with a waxy substance called tallow. When the sounding lead was lowered to the seafloor, some of the sediment would stick to the tallow. This could assist crew to determine the composition of the seafloor. This knowledge, along with the depth readings, helped with the navigation of the vessel. It is likely that these sounding leads were lost overboard whilst in use.



Finally, we commend Greenwich Wharf for sending in detailed photographs of a find from Licence Area 122/1A. Close-ups of the serial numbers and stamps allowed staff at the RAF Museum to identify this as a piece of aircraft. The find, discovered by Paul Scrace, is part of the locking mechanism for the undercarriage of an aircraft, possibly from World War Two. This locking system rotated when the pilot selected 'gear up' or 'gear down'. A stamped mark on the artefact is similar to one on a Spitfire and it is probable that this is from a Spitfire variant of some sort. This can only be confirmed if more associated finds from this area are reported. Staff receiving aggregate from Licence Area 122/1A should be extra-vigilant for material of this type.

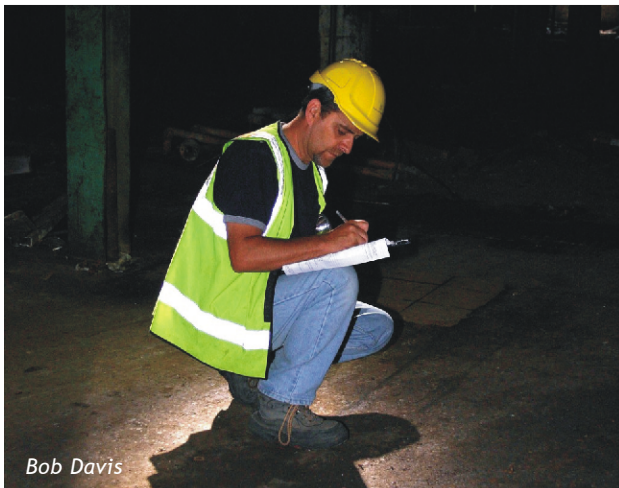




## Meet the Specialist

We frequently contact specialists to help us identify finds reported via the Protocol. Here is a selection of those specialists.

**Andy Currant** is the Curator of Fossil Mammals at the [Natural History Museum](#) London. He has worked with the museum's fossil mammal collection for nearly forty years. Andy spent many years excavating in caves and is a specialist on small mammals. His current studies explore the nature of the fossil record - how things become preserved in the first place, and the extent to which we can and do use them in our research. Fossils are by their very nature extremely dead! - but they are the traces of once-living animals; things that lived, breathed, bred and died. Andy helps us identify animal bones. In particular he has been invaluable in giving detailed information about the many mammoth bones collected through the Protocol.



Bob Davis

**Bob Davis** is a Buildings Consultant at [Wessex Archaeology](#). He helps to identify some of the more unusual items reported through the Protocol. Bob has worked in archaeology for 25 years including illustration, environmental, photography and survey. Before this he worked in the construction industry on projects including historic houses, where he gained his knowledge of buildings. Bob's skill in identifying tools and fittings comes from his time as an auto machine turner.

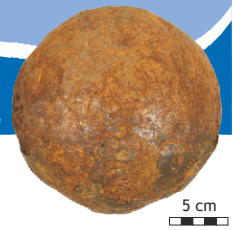
**Andy Simpson** is a qualified archaeologist and has been a Curator at the [Royal Air Force Museum](#) since 1989. One of his key tasks is to research and update the detailed individual history of all 250 or so aircraft in the museum's collection. He advises on potential acquisitions, organises loans and acquisitions for the collection and aids the public, colleagues and researchers in their enquiries. He works with the exhibition staff in the museum to update the museum aircraft displays. Outside of work, Andy has a particular interest in late Roman Britain and is actively involved with fieldwork with the [Hendon & District Archaeological Society](#).



Andy Simpson

When reporting a find via the Protocol, remember to provide as much information as possible about the find. Please provide a full description of the materials and any distinctive markings, written measurements as well as scaled photographs and, most importantly, don't forget to tell us where the find was from. This way we can map the distribution of the finds to build a picture of what lies on the seafloor.





## Focus on Finds - Cannonballs

Cannonballs are one of several forms of munitions found on the seafloor. Always follow company guidelines on the safe treatment of munitions when they are discovered. For more information see BMAPA's Guidance Note: Dealing with Munitions in Marine Aggregates, June 2006. In the past six years, forty cannonballs have been reported through the Protocol, with six cannonballs already reported this year. Cannonballs can provide valuable information about maritime activities.

A cannonball is a type of projectile shot from a firearm, the size of which requires it to be mounted on a support<sup>1</sup>. Due to their robust design, cannonballs often survive on the seabed and may be recovered by archaeologists from a wreck site. Marine aggregate extraction can also recover isolated cannonball finds often not associated with a wreck and usually surrounded by mystery. How did they end up there?

Without dredging, it is unlikely that isolated cannonballs would be found. However, this means that archaeologists have to examine the find away from its context. Understanding the context, i.e. find location and associated material, can often provide clues about how the cannonball ended up there.

An obvious way they may be scattered on the seafloor is that they may have been fired, either during battle or in training. Sometimes by looking at the cannonball it is possible to tell if it has struck something. The recovery of ship timbers or other wreckage in the same area as cannonballs could indicate the site of a sea battle and the location of a shipwreck.



Different sizes and types of cannonballs and other projectiles have been reported through the Protocol.

Solid **Round Shot** was made with varying diameters and weights depending on the size of gun from which it would have been fired, which can be an indicator of age or nationality. Cannonballs could smash a hole in the hull or be fired when heated to red-hot, to start fires on board to disable an enemy ship.

Captured vessels were a valuable spoil of war, and could be easily repaired and redeployed in the captor's fleet. **Bar/Chain Shot** were developed to target the rigging of vessels to prevent escape and aid capture. This shot has two smaller cannonballs linked via a bar or chain that would spin when fired.



**Canister Shot** is a container that would break open on firing and spray the enemy ship's deck with smaller shot. Also known as 'man killers', these projectiles caused damage to vulnerable crew manning the upper deck of vessels.



**Shells** are a case of metal or other material which held powder and shot. Originally designed as hand-thrown grenades, they were developed as explosive projectiles for cannon or mortars<sup>2</sup>. Shells may look like cannonballs at first glance but they are typically lighter. Take care, as they may still contain explosives.

Military training is another reason why cannonballs are on the seafloor. Historic records show that in the British Navy of the 18th and 19th centuries there was a clear training programme for gunnery. During the first month at sea of a deployment, there were training exercises twice a week; during the second month there was training on the guns once a week. Training occurred once every two months after that. Each training exercise had a maximum of 6 firings<sup>3</sup> to conserve gun powder.





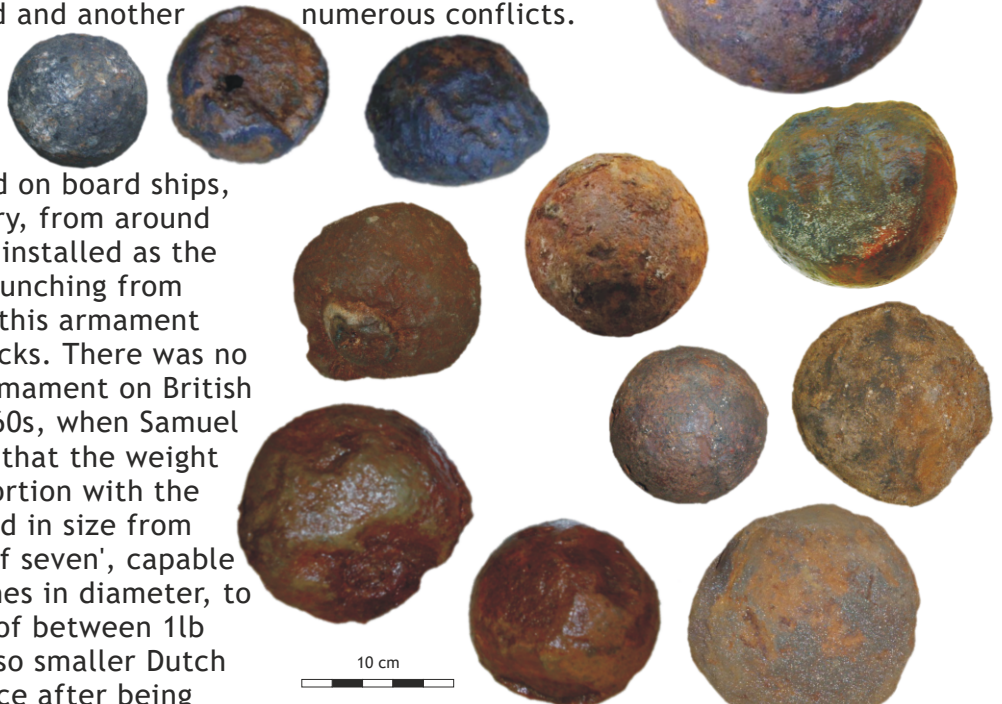
Cannonballs may also be evidence of 'lagan'. Lagan is when cargo is deposited in water and marked with a buoy for collection later. It could also be used to weigh down other things, including sinking dead bodies for sea burials. 'In 1661 the trumpeter of the *Adventure* was "sewed up in canvas, with a culverin shot at his head and another at his feet" and sent over the side at daybreak.'<sup>4</sup>

### Armament

The first guns were placed on board ships, both merchant and military, from around 1340. By 1500, guns were installed as the main method of missile-launching from ships and within 20 years this armament was arranged over two decks. There was no attempt to standardise armament on British naval vessels until the 1660s, when Samuel Pepys set a new principle that the weight of guns should be in proportion with the ship's tonnage. Guns varied in size from a 42-pounder or 'cannon of seven', capable of firing a shot of 6.7 inches in diameter, to the robinet, firing a shot of between 1lb and 1 1/3 lb. There were also smaller Dutch guns put into British service after being taken as prizes.

Sixteen cannonballs have been recovered from the East Coast region. This was an area of high naval activity, particularly during the four Anglo-Dutch wars which were fought between 1652 and 1784. More information about this conflict can be found in the Protocol Annual Report 2007-

2008 (pp10-11). The second largest number of cannonballs were reported around the Isle of Wight, which is an area of heavy maritime activity over a very long period encompassing numerous conflicts.



It is important that cannonballs are reported as quickly as possible via the Protocol, as they may relate to important naval activities of Britain's maritime history.

- 1 *The Armouries of the Tower of London*, The Ordnance, HL Blackmore.
- 2 Caruana, A. B., *The History of English Ordnance 1523-1875*, Volume 1.
- 3,4 Davies, J.D., 2008, *Pepys's Navy - Ships, Men & Warfare 1649-1689*, Barnsley, Seaforth Publishing p143 & p168.

When reporting cannonballs, please remember to note the diameter and weight of the cannonballs so that they shot can be matched to the type of gun from which it may have been fired. It would also be of interest to have the vessel trackplot for the day the finds were discovered, so that we can map any patterns of distribution, which may aid the discovery of a new shipwreck.





## The Value of a Find

During the past five years, over 800 individual finds have been reported via the Protocol. These finds have been recovered from all around the coasts of England.



Evidence from shipwrecks illustrates the range of maritime activities, location of shipping routes and areas of previous conflicts. Aircraft fragments add to RAF records of World War Two casualties. Animal remains and flint tools reveal a lost landscape where thousands of years ago man hunted prehistoric animals such as mammoth and aurochs.



Mammoth tooth

Finds reported through the Protocol add value to our understanding of Britain's maritime heritage. There are many ways the information and artefacts collected through the Protocol are useful, now and in the future.

### Development-led work

It is a licence requirement for industries working at sea that they assess the archaeological potential of the area prior to starting work.

The Protocol team frequently talks to colleagues requesting information about the locations of Protocol finds for their Desk-Based Assessments (DBAs). A DBA collects and summarises in a report all the archaeological and historical information previously known about a defined area. The Protocol provides one source of information about archaeology on the seabed. This then helps to determine the potential impact that marine industries can have on the archaeology.

Even when areas have been surveyed in detail, using geophysics, archaeological material can remain hidden. This is particularly true for prehistoric material, which is often buried below the seabed, within layers of sand or gravel. Accurate positions of finds discovered through the Protocol are essential for mapping archaeology on the seafloor; this allows archaeologists to return to an area for further research in the future.







## Public Access

English Heritage incorporates all the information about Protocol finds into their Public Archive called the [National Record for the Historic Environment \(NRHE\)](#). A large percentage of this archive is now available online through their PastScape website at

<http://www.pastscape.org.uk/>

Searching by Licence Area produces a list of all finds reported from that area, e.g. 'Licence Area 340' currently shows 8 results.

The screenshot shows the PastScape website interface. The main heading is 'PastScape' with the English Heritage logo. Below the heading, there is a search bar and a 'Quick Search Results' section. The results are displayed in a table with columns for Monument Name/No, Resources, and Description.

Monument Name/No	Resources	Description
MONUMENT NO. 1499015 VENTNOR	<ul style="list-style-type: none"> <li>Monument Pictures</li> <li>Monument Maps</li> <li>Monument Investigation</li> <li>Monument Sources</li> <li>EH Visitor Information</li> </ul>	Two cannon balls found at the United Marine Aggregate's Bedhampton Quay, Havant, within dredging material from Licence Area 340 off the east coast of ...
MONUMENT NO. 1499145 VENTNOR	<ul style="list-style-type: none"> <li>Monument Pictures</li> <li>Monument Maps</li> <li>Monument Investigation</li> <li>Monument Sources</li> <li>EH Visitor Information</li> </ul>	Timber was found at the United Marine Aggregate's Bedhampton Quay during dredging operations in Licence Area 340 off the east coast of the Isle of Wight...
MONUMENT NO. 1542720 VENTNOR	<ul style="list-style-type: none"> <li>Monument Pictures</li> <li>Monument Maps</li> <li>Monument Investigation</li> <li>Monument Sources</li> <li>EH Visitor Information</li> </ul>	A cannon ball was found at Brett Aggregates Cliffe Wharf after dredging operations either by Beaver or MV Thames either from licence area 441 which is...
MONUMENT NO. 1496791	<ul style="list-style-type: none"> <li>Monument Pictures</li> <li>Monument Maps</li> <li>Monument Investigation</li> <li>Monument Sources</li> <li>EH Visitor Information</li> </ul>	Metal debris found in material dredged from licence area 340, approximately 10km east of the Isle of Wight. At least five pieces of metal debris have ...

Other archaeological reports or research are available to the public via various online databases, such as the Aircraft Crash Sites study commissioned by English Heritage following several aircraft finds reported through the Protocol. Read more about the project at

<http://blogs.wessexarch.co.uk/aircraftcrashsitesatsea>

This provides a valuable resource for amateur archaeologists or anyone with a general interest in maritime archaeology.

## Education and Outreach

Protocol finds often end up in teaching collections, either with heritage organisations or museums, and are used to raise awareness about archaeology to industry or taken into schools as a handling collection for pupils.



School workshop at Downton Primary School

For example, Wessex Archaeology's Learning and Access Team use artefacts to support Protocol awareness visits by illustrating the types of finds that staff may come across at wharves or on vessels.

As mentioned in previous issues of Dredged Up, Wessex Archaeology took the finds out on the road for 'Explore the Seafloor', as well as using them to bring history lessons to life through WA's educational programme Time Travelling by Water. Recent workshops helped children imagine what it was like to be a World War Two airman and explore the amazing technological development of ships during the Victorian period, by allowing children and teachers to get hands-on with real archaeological evidence.

Your finds are valuable - keep reporting them so we can tell everyone what exciting things lie beneath the waves!





Wessex Archaeology



essential materials  
sustainable solutions

bmapa



ENGLISH HERITAGE

## Pinging for data - Geophysics in aggregate areas

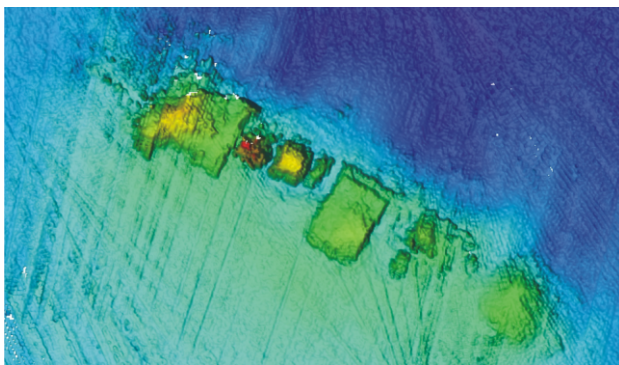
Geophysical Survey is a method used to collect data about the seafloor. Various techniques are used to create images and map the physical properties. There are several acoustic methods for surveying. Sound waves are sent to the seafloor, and the return signal is measured creating an image. Different types of sound waves produce different images.

**Sidescan Sonar** is useful for identifying features on the seabed.

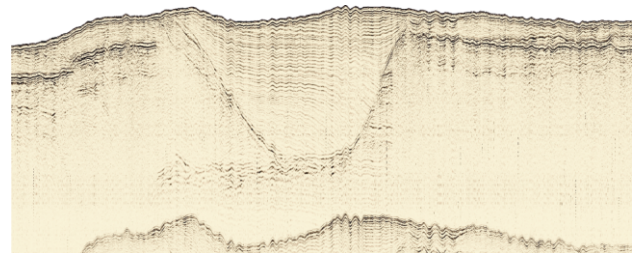
**Multibeam Bathymetry** shows the terrain of the seafloor.



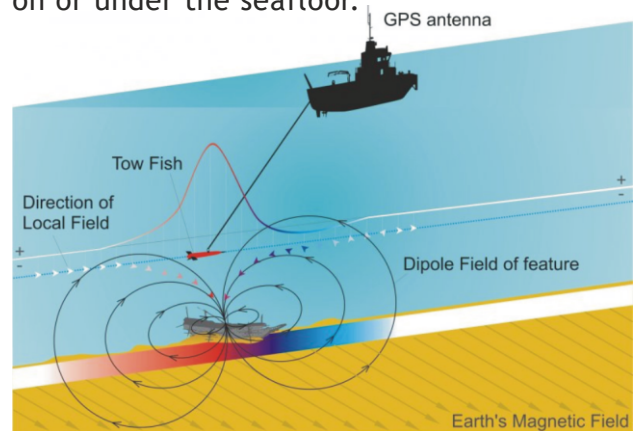
Dornier 17



**Sub-Bottom Profiler** penetrates beneath the seafloor.



**Magnetometry** does not use sound waves but instead detects variations in the Earth's total magnetic field caused by the presence of ferrous (iron) material on or under the seafloor.



Geophysical Survey is used by archaeologists in three main ways for the marine aggregates industry.

1. Geophysicists look at a Pre-Licence Survey, conducted to look at the geology and archaeological potential before a licence is granted and dredging can begin.
2. Once a licence has been granted, a typical condition of dredging is using geophysical surveys to monitor Active Dredging Areas (ADAs). Sandwaves move and this can reveal previously hidden archaeology. Bathymetry and sidescan sonar are used to monitor the areas.

Geophysical survey is an important tool to map the seafloor. This information, combined with artefacts reported via the Protocol, helps archaeologists understand more about the archaeological potential of these areas.

3. Following the discovery of significant finds, data may be reviewed or a Specific Survey conducted to determine whether these finds are associated with a shipwreck or aircraft crash site. An intact aircraft such as the Dornier 17, shown above left, can produce excellent survey images.