Surveying, cataloguing and disseminating the submerged cultural heritage

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ALESCO
MAT September 2013
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Abstract
Access to the Underwater Cultural Heritage (UCH) has always been challenging. The Maritime Archaeology Trust has been working to identify, record and inventorise the submerged cultural heritage since 1991. When material is discovered, management plans have been proposed and implemented. This could be by preservation in situ, excavation or by providing access to the public. Public access has been presented in the form of diver trails, booklets, photographs or videos. Publications aimed at children, adults and the research community have also proved very valuable at disseminating information and over the past 10 years the Maritime Archaeology Trust has developed a wide range of education and outreach activities. Education resource packs are built around the subject and taught in schools. These are complemented by a Maritime Archaeological Bus that can travel to any school and by interactive internet based tools that have been used to reach a modern audience. This presentation will outline how the Maritime Archaeology Trust has developed pioneering initiatives, working internationally from Europe to Arabia to record, teach and disseminate information about the submerged cultural heritage. In particular, it will show how we have used the subject as a method of sharing knowledge of our common heritage across borders and helped to build capacity in nation states. In particular this experience has been used on a European platform with the Archaeological Atlas of the Two Seas project (A2S), in Qatar to help the Qatar Museums Authority (through the University of Birmingham), build maritime archaeological capacity and education, and in Saudi Arabia where we are looking to investigate submerged landscapes and encourage public outreach under the Direction of the University of York. A wide ranging objective is to involve a broad community of non-specialists. Volunteer, terrestrial researchers and diving enthusiasts are being encouraged to contribute to the international programmes and participate in fieldwork activities. The inclusive nature of our initiatives is increasing the skill sets for a cross section of people who can help enhance our itinerary of UCH assets. The projects show how involvement, education and technology can be combined effectively to help manage our UCH. This is a model that is applicable across the globe.
Introduction
From the earliest times, ships have been the largest and most sophisticated pieces of technology produced by nation states. The seabed in the Mediterranean contains an assemblage of cultural assets that reflect social and technical development since the last Ice Age. A warship patrolling the coast line can act as a statement of power while the evocative image of a vessel in full sail is a testimony to human skill and endeavour (Fig 1). Such sightings may be rare today but below the surface of the water thousands of shipwrecks remain in what has become the best stocked museum in the world. Some of these wrecks lie almost intact in their serene, watery grave while others are broken and damaged; reflecting the tragedy that resulted in their loss. This hidden archive tells the story of a shared past that shaped the modern world, but if we go further back in time when sea levels were lower, we find archaeological landscapes that played host to prehistoric people as they migrated around the globe.

Figure 1: Dhow under sail in the Arabian Gulf

Unfortunately, the resource is hard to visualize and it is difficult for the non-diver to appreciate. This is all the more regrettable as the public have a clear appetite for the submerged cultural heritage in the form of both shipwrecks and submerged landscapes. This fact is demonstrated by the high number of television programmes commissioned to record stories relating to both human losses at sea aboard ship and the drowning of ancient sites of human settlement (Fig 2). The interest is also reflected by the large community of volunteers and avocational archaeologists who, when given the opportunity, are keen to get actively involved. The cocktail
of a rich resource and an enthusiastic public has proven very successful, and it is becoming apparent that this combination has the potential to deliver a great deal more.

Figure 2: Pearl diving from Dhows has played a significant role in the history of many Arabian countries yet there are few historical records. The discovery of a wrecked pearling vessel could provide many new insights into a distinctive cultural activity.

The Maritime Archaeology Trust (MAT) has, for over two decades, been uncovering the secrets of the underwater world and exploring ways the fascinating results can be used for the public benefit. It has endeavoured to get the information out to a wide ranging public and to link our common heritage to the lives of local people. This has been achieved by using marine archaeology as a tool to help people work together and to engage them with their common past. In addition, books and booklets have been produced, education packs have been developed to work with school children and a travelling exhibit onboard a maritime bus has been created to reach less accessible locations.

**Atlas of the 2 Seas: an European Case Study**

The success of the MAT outreach program has not arrived overnight but has been the result of many years of experience and dedication by its staff. It was this experience that was drawn on and developed further within the Atlas of the 2 Seas project. The overall aim of the four year project has been to map the submerged cultural heritage and disseminate information about underwater archaeological sites in the shared seas of France, England and Belgium. The partners from the three nations have been achieving this by sharing national resources and expertise in order to promote underwater archaeological research. The lead partner is the Association pour la Développement de la Recherche en Archéologie Maritime (Adramar) from Brittany in France, the Belgium partner is Flemish Heritage and the British partner is the
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HWTMA. The project is supported by the Direction des Recherches archéologiques sous-marines (DRASM) in France.

A main objective was to present the unified results through a common portal to the World Wide Web, in exhibitions, educational resources and via our Maritime Bus (Fig 3). Gathering the data through research and fieldwork has been another key feature within the project. Maritime archaeologists split their time between research in the archives and surveying in diving suits to gather the information that was needed. Research was particularly important as the ships under study invariably had links with more than one nation. This meant information needed to be gathered and disseminated collectively.

Figure 3: The Maritime Bus that takes archaeological exhibits to schools and events.

Research
The focus of research in the Atlas of the two seas project was on ships that had links with many countries and as such they had a common heritage. This included the SS Londonier which was a Belgian steamer under charter to the French government and lost on 13th March 1918. The SS Azemmour; departed London for Nantes on 18th March 1918 and was torpedoed on 20th March by the UB-59 to the south of St. Catherine’s Point on the Isle of Wight. The French 3rd rate warship L’Invincible was launched at Rochefort, France, in 1744, captured by the English in 1747, refitted and lost in the eastern Solent in 1758. Le Hazardeux, a French 3rd rate ship of the line, built in 1698. In 1703 the ship was captured by the Royal Navy, recommissioned Warship Hazardous and lost in November 1706. HMS Wakeful was a Royal Navy W-class destroyer. She was built under the 1916-17 but torpedoed and sunk in Belgian waters following departure from Dunkirk during Operation Dynamo on 29 May 1940. Another significant wreck was the Smyrna; launched as a wool clipper trading to Australia. On 28th April 1888 on route to Sydney a collision with the steamer Moto in thick fog resulted in a hole torn in the side of the Smyrna. She sank in over 50m of water where she remains in a well preserved state (see image below).
In addition to shipwrecks, submerged landscapes have also been a focus of attention. In the UK, the 8,000 year old drowned landscapes in the Solent at Bouldnor cliff were put under scrutiny as were the 70-80,000 year old archaeological assemblages in 20m of water off Fermanville in northern France. At the time of occupation, both sites would have been part of a continual European landmass that included Great Britain.

All data gathered is being stored in a standard set of files providing consistency and ease of access which is linked to a Geoportal. The Geoportal is to be trilingual and shared by the partners from the three countries. It is a gateway to databases within each organisation and a signpost to wider catalogues such as the National Monuments Record in the UK.

**Fieldwork**

There are many hundreds of thousands of shipwrecks, submerged cities and submerged landscapes hidden from sight around the globe but the management and recording of shipwrecks is still a young discipline. Every site is different and has different requirements. Some sites are stable while others are under threat from the natural environment or human impacts (this applies both to shipwreck and to submerged landscapes). Some sites are rich in historical material and have the capacity to provide a great deal of information about little understood periods of the past, while others are more modern and well documented. However, we are still a long way from identifying the totality of the resource, limiting our ability to make the best informed judgements about significance or prioritise different levels of investigation. So there is a need to get more baseline data from more sites.

With the advent of widespread geophysical data sets, initial location of archaeological material on the seabed has grown substantially and this is a tool that can be used for prospecting. When looking for submerged sites geophysical data is collected and examined to record and position images of sites. Once heritage assets are identified, the next stage is to determine which ones warranted further investigation either to calibrate the geophysical record or to gather more diagnostic and scientific data. At this point experienced archaeological dive teams are deployed to visually inspect the remains and to record the features that would help identify a site. Where possible, trained volunteer divers have helped with the recording and conducted surveys...
themselves. The results needed to be sufficiently detailed for archaeological research but also presentable so they could be easily understood and appreciated by the wider communities to whom this heritage belongs. To achieve this, fieldwork has concentrated on the collection of video footage along with measured sketches and still photographs as well as more detailed archaeological plans (Fig 5).

![Figure 5: member of marine archaeological team collecting video footage in the Gulf.](image)

The information gathered has helped the identification of some sites, provided baseline data for the state and stability of other sites, and resulted in acquisition of material that has been used to exhibit to the wider public or integrated into education resource packs for schools. This is a very important for the perception of submerged cultural heritage and decisions about its future management as while this material remains below the waves, it is seen to be inaccessible to the public.

![Figure 6: Upstanding deadeyes on the wreck of the Smyrna](image)
Arabian initiatives
The experience gained in the UK and when working in partnership with other nations was called on as we collaborated with the University of Birmingham to help develop the underwater Qatar National Historic Environment Record. This was being developed for the Qatar Museums Authority (QMA). The initial remit was the visually inspection of contact points and investigation other sites of archaeological interest following analysis of geophysical data. In total 30 underwater sites were investigated.

During the course of the project the MAT and University of Birmingham project members worked with QMA staff to help train and make them aware of the significant SCH that remained beneath the water. The team also worked with The Ministry of the Environment, National Geographic Television, local volunteers and the Doha Dive Club.

Figure 7: Shards of pottery that could have been associated with a ship wreck were found by a mixed team of MAT archaeologists and QMA staff in Zubara Bay.

Teams of local volunteers took part throughout the fieldwork (Fig 7). The intention was to train Qatari archaeologists and involve Qatari citizens in the project wherever possible. The results from the work undertaken and any new discoveries were used to support a programme of outreach and education. During the project this took the form of four presentations to Compass School (440 children), talks to the Qatar Dive Club and a series of meetings with the Qatar Museums Authority and Department of the Environment to explain the ongoing work programme (Fig 8).
Figure 8: 440 children took part in a Maritime Archaeological Day at the Compass School, Doha, Qatar.

Fieldwork investigations in Saudi Arabia in collaboration with the University of York and the King Saud University under the auspices of the Commission for Tourism and Antiquities, fieldwork has been carried out to investigate submerged landscapes on the Farasan Islands in the southern Red Sea (Fig 9). A great deal of archaeology has been located along the coastline, primarily shell middens, and there is an programme of outreach in place to involve members of the community with plans to disseminate the information more widely to the public and local schools.

Figure 9: Exploring a possible habitation site underwater in the Farasan Islands, Red Sea.
Dissemination, Education and Outreach

Maritime archaeology is a subject that cuts across many disciplines and appeals to people in all walks of life. This has been recognised by the MAT which has led to the development of an outreach programme that is delivered through exhibitions and a travelling bus. The results from project research are used to create education and outreach programmes which extends to all sectors of society. One particular focus has been the production of teaching resource packs, teaching notes and activity books for schools. Physics, chemistry, mathematics, history, geography, sea-level rise, resource management, social mobility and climate change are just some of the topics that can be accessed through the process and study of the maritime cultural heritage. The education resources are supported by visits to instruct classes while workshops are given to help practitioners, specialists and educators. School visits are complemented by activity days which include the use of our purpose built Maritime Bus.

Activities are also organised for the public at events festivals or open days while local groups, societies and conferences receive more formal presentations. Outreach also extends underwater where dive trails have been created with accompanying books, booklets and displays. The wide range of subjects applied to answer questions about the past has been appreciated for many years by archaeologists but it is only recently that educators and more established sections of our education system are beginning to realise the possibilities.

Publications relating to the submerged cultural heritage have been produced for both an academic and non-academic audience. The hard copy output is complemented by digital publications on the web through the MAT website and with the use of new interactive tools such as the Interactive Site-Viewer which has been used to give access to the digitised HMS Invincible archive or the web based GIS platform that allows visitors to explore shipwrecks using a rendered, surveyed plan as a guide (Fig 10). Another useful tool is Wikitude where information about the local submerged heritage can be heritage can be accessed by anyone with an ‘Android’ phone when they are in the vicinity of information hot spots (Fig 11).

Figure 10: Page from Wreck-Map. This interactive guide gives access to images, videos and interpretive information relating to a wreck
Figure 11: Information about local web sites is displayed on an Android phone using the Wikitude software

As with the education programme in Qatar, the Atlas of the 2 Seas project worked with schools in each partner country has been linked around research of the UCH. The project facilitated proactive communication between schools from the different countries enabling them to conduct individual research around a common theme and be part of an international underwater archaeological investigation.

Conclusions & future possibilities
The progress made during the last 22 years of the MAT is contributing significantly to the understanding of our submerged cultural heritage. Fieldwork has led to the discovery of a range of new data that has been assessed with the desk based research. Geophysical survey is helping to locate ship wrecks, provide dramatic images and is revealing new areas of interest. Diving on these anomalies and recording them is providing high levels of detail, all of which is being made widely accessible.

This ongoing work is demonstrating how international cooperation and a streamlined methodology can recover a wealth of information. It is showing us that the more we look, the more we find and the more we are able to access the secrets from this hidden world. To get the greatest benefit from such data there would be a need to extend initiatives like those outlined above. This could be achieved effectively and economically with more participation from the diving community under the guidance of trained maritime archaeologists. Such a programme would contribute towards a holistic understanding of the cultural heritage while increasing the skill sets for a cross section of people who, if given the chance, could help enhance knowledge of our submerged cultural heritage assets. The results would increase opportunities for academic study, help raise awareness and supply engaging material for education resources. It would also provide baseline data that could inform cultural heritage managers and marine spatial planners as nations continue to exploit their common seas. These pioneering initiatives aim is to increase capacity to research and study underwater archaeology while raising the profile of the subject internationally.

Where the submerged cultural heritage is presented effectively the subject’s wide appeal can unify and engage. It has the ability to attract large audiences and where this is achieved, its level of significance to the wider non-diving community will increase.