

The Western Australian Museum and maritime archaeology

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Introduction

Western Australia (WA) occupies the western third of Australia with a total area of 2.5 million square kilometres is one of the seven states of Australia ruled under a federal system of government. WA has a population of around 2.6 million of which 92% live in the SW part of the state.

Australia was first inhabited by Aboriginal people between 60,000 and 42,000 years ago who crossed a water-bridge from SE Asia, a voyage of considerable distance of around 100 km.

Australia was first sighted by the Dutch in 1606 who were trading in the Indonesian archipelago as the Dutch East India Company (VOC). The European contacts with Australia were the result of the discovery, by the Portuguese, of the sea route to the Indies in 1499. The Europeans were interested in breaking into the spice trade which was controlled by the Venetians and was via an overland route through the Middle East. With the problems of the religious wars and the high costs of transporting spices overland, the Portuguese searched for an alternative way to the Indies by sea.

For almost 100 years they held the monopoly on the trade with the Indies, but the advent of the religious wars in Europe between the Catholic rulers and the Protestants led to a problem of access to the spice trade. As a result the Dutch and the British both sought to break the Portuguese monopoly. In the 17th century the VOC, developed a trade network that extended from the Persian Gulf in the West to Japan in the East. Their voyage to the Indies initially followed the Portuguese route, but later changed to sail directly across the Indian Ocean from the Cape of Good Hope to Batavia in the Indies. It was a long and difficult voyage and ships suffered from the tropical heat, lack of wind and, inevitably, disease.

In 1616 the VOC pioneered a new route to the Indies, sailing south from the Cape to follow the Roaring Forties, and then to turn north to Batavia. This inevitably led to the discovery of the western coast of Australia. In 1616 Dirk Hartog made landfall on the WA coast and this began the gradual mapping of this coast which was known in the 17th century as the Great Southland. Inevitably, ships using the Brouwer Route came unexpectedly on the Southland and were wrecked. The first was the English East India Company ship *Trial*, in 1622 and then four VOC ships, *Batavia* (1629), *Vergulde Draeck* (1656), *Zuytdorp* (1713) and *Zeewijk* (1727).

The VOC largely ignored WA as there was nothing for them to trade and the coastline was largely inhospitable. The British established settlement in Australia started in 1788 following the discoveries on the East Coast of Australia by Captain Cook. This was largely a convict settlement set up by the British whereby convicts were transported to the colonies

deal with the growing crime in Britain. WA was settled in 1829 and transportation came later in 1850 and lasted 18 years.

In 1891 the WA Museum was established as the Perth Museum with a collection of geological specimens. In 1899 the WA Government built the States Library, Art Gallery and Museum. Over the years the museum developed to a multi-faceted museum with regional branches and an extensive curatorial research dimension.

The Western Australian Museum now has two metropolitan branches in Fremantle: the Maritime Museum and the Shipwreck Museum. The Western Australian Museum - Maritime is located on Victoria Quay, and contains galleries with themes such as the Indian Ocean, the Swan River, fishing, maritime trade and naval defence. One of the museum's highlights is the yacht *Australia II*, which won the America's Cup in 1983. The Museum is located in the historically significant Maritime Heritage Precinct, which includes the entrance to Fremantle Inner Harbour and associated installations; Forrest Landing, the remnant of the original limestone bar used by Aboriginal men as a crossing point at the mouth of the Swan River; the migrant Welcome Walls memorial; and the World War II submarine slipway area.

Immediately adjacent to the Western Australian Museum — Maritime on the WWII slipway is HMAS *Ovens*, an Oberon class submarine that is open for guided tours and commemorates the World War II Fremantle allied submarine base, which was the largest submarine base in the southern hemisphere, with 170 submarines of the British, Dutch and US navies conducting patrols from there.

Nearby in Cliff Street, Fremantle, the Western Australian Museum — Shipwreck is recognised as the foremost maritime archaeology and shipwreck conservation museum in the southern hemisphere. The museum is housed in 1850s-era Commissariat building and contains a reconstructed hull from the *Batavia*, which was wrecked off the coast of Western Australia in 1629. It also houses the horizontal trunk engine recovered from the iron steamer *SS Xantho* which sank in 1872. This unit, the only known example of the first mass-produced, high speed and high pressure marine engines, can now be turned over by hand. With its CEO also responsible for the historic wrecks off the coast of Western Australia, many shipwrecks appear in the Museum's exhibits. In 1980, the Museum also commenced the development of a "Museum-Without-Walls" program via its "wreck trail" or "wreck access" programs at Rottnest Island. These "trails" now appear at many places along the coast.

In addition the WA Museum has three regional museums at Albany, Kalgoorlie and Geraldton.

The Western Australian Museum has an extensive research program, with museum scientists and curators specialising in the fields of aquatic zoology, archaeology and anthropology, conservation, earth and planetary sciences, history, maritime archaeology, maritime history, and terrestrial zoology. The museum also has a specialist materials conservation team.

The Aquatic Zoology department is responsible for documenting and researching the marine, estuarine and freshwater fauna of Western Australia. The department includes sections that study Malacology, Ichthyology, Crustacea, Marine invertebrates and Worms.

The Anthropology and Archaeology department specialises in cultural anthropology and

archaeology. The department's research, collections and public programs focus on understanding what it is to be human, cultural diversity, exploring complex relationships between society, culture, language, sociality and economy. The department specialises in the study of Ancient Egypt, Aboriginal cultures (particularly the South West, Pilbara, Desert and Kimberley regions) and indigenous cultures of the Ancient World.

The Earth and Planetary Sciences department study and collect in the areas of Fossils (invertebrate, vertebrate, plant and trace fossils), Minerals, Rocks, Gems, Meteorites and Tektites. The department's collection holds taxonomic and stratigraphic (rock layers and layering) material that is representative of Western Australia's palaeobiological (the biology of fossil animals and plants) evolution and geological history from 3.8 billion years ago, right through to just a few thousand years ago. There are over 1.5 million items in the department collections.

The History department specialises in developing collections reflecting the material life of Western Australians, and researching the story of the people and places in Western Australia in all its diversity. The department also holds the ECU Museum of Childhood Collection, a nationally significant collection of 24,000 items is reflective of Western Australian childhood.

The Maritime Archaeology department primarily researches shipwreck archaeology from the Western Australian coast, including the famous Batavia shipwreck. Its staff members are involved in developing artefact management and cataloguing strategies, outreach and wreck-access programs, site-inspection techniques, and studies of diverse maritime sites, such as iron ship archaeology, characterised by its SS Xantho program and underwater aviation archaeology. The department also conducts masters level programs in maritime archaeology in collaboration with University of Western Australia.

Maritime History specialises in collections of images and artefacts representing the individuals, communities, and organisations that contribute to the maritime history and heritage of Western Australia.

The Materials Conservation department is responsible for ensuring the 4.5 million items in the museum's collections are permanently preserved for reference, research and exhibition through the use of preventive and remedial conservation techniques in accordance with international and national standards of best practice. The Materials Conservation department also possesses a research division in its overall structure which develops conservation techniques and methodologies.

The Terrestrial Zoology department maintains large collections of a wide variety of terrestrial animals, including both terrestrial invertebrates and vertebrates, as well as marine mammals. The department includes sections that study: Subterranean Biology, Ornithology, Mammalogy, Entomology, Vertebrate Biogeography, Arachnids and Myriapods and Herpetology.

The Department of Maritime Archaeology

The WA Museum in the boom years of the 1960s and 70s established a new division of Human Studies to compliment the existing division of Natural Science. The new division was

made up of the departments of History, Archaeology, Anthropology and Maritime Archaeology. It was the discoveries of the shipwrecks on the WA coast that resulted in the establishment of the Department of Maritime Archaeology and subsequently from the work of the department, resulted in the development of firstly the Shipwrecks Museum and secondly the a new Maritime Museum which complemented the former. The story of these developments is described below.

Shipwrecks on the WA coast

In 1963, following the discovery of two VOC (Dutch East India Company) shipwrecks, the government of Western Australia amended the *Museum Act* to protect all shipwrecks that were lost before 1900. This was the first legislation, anywhere in the world, that specifically protected underwater cultural heritage. This legislation, however, was not amended at the whim of government; it was the result of a number of private individuals lobbying the government to protect these sites that were being looted.

In early 1963, the Western Australian newspapers abounded with reports of looting and conflict on the wreck sites, particularly the *Vergulde Draeck* which lay just over 100 km north of Perth. Following these events, a group of the finders approached the State Government suggesting that they were prepared to relinquish their rights as finders, provided the Government enacted legislation to protect the sites. The Government agreed, and amended legislation to protect all shipwrecks and was the first underwater cultural heritage legislation in the world.

Legislation

The history of the Western Australian Museum's involvement in maritime archaeology started in 1963. It was then that the Western Australian Government passed an amendment to the *Museum Act 1959 (WA)* giving to the Museum responsibility for shipwrecks that were dated prior to 1900, and were lying below the low-water mark in the territorial waters of the State. This legislation came about, firstly, as a result of an initiative of the finders of the *Vergulde Draeck* and the *Batavia*, who passed their rights, as finders, to the Government; and, secondly, because these sites were being looted and vandalized, causing a public outcry. The Act gave the Museum authority to control and administer the wreck sites on the Western Australian coast. At that time, the concerns were purely for the Dutch shipwrecks and interest in the post-settlement wreck sites was to come later.

Significantly, the amended legislation included a provision to reward the finders of shipwrecks but this was not made retrospective; thus, the finders of wrecks already discovered, including the *Batavia*, *Vergulde Draeck*, *Zeewijk*, *Zuytdorp* and the Cottesloe Wreck (*Elizabeth*), were not eligible for such a reward. This proved to be a highly contentious and on going issue, both for the finders and in the perception of the general public, and the matter was only finally resolved in 1994 by the findings and recommendations of the Western Australian Government Select Committee on Ancient Shipwrecks. The Committee recommended that any person who reported their discovery of a wreck site should be rewarded; and that the early finders of wreck sites, who had been deprived of rewards, should be properly acknowledged and rewarded. The legislative

pathway was complex and without precedent.

Remember that this was the first legislation anywhere in the world to protect underwater cultural reaffirming the position taken in the early Western Australian initiative to protect sites and underwater cultural heritage and it was being applied at a time when there were conflicting issues between the States and the Commonwealth on sea bed rights. The enactment of the new *Museum Act 1969* (WA) saw the incorporation of the 1964 amendments with some modifications.

In 1972, after negotiations between the governments of the Netherlands, the Commonwealth and the State, the Australia Netherlands Committee on Old Dutch Shipwrecks (ANCODS) Agreement was signed. Under this Agreement the Netherlands Government, as heir to the United Dutch East India Company (VOC), agreed to transfer to the Australian Government any rights of claim the Netherlands might have to the VOC shipwrecks. The Agreement required that a committee be formed that would oversee the operations of the Museum and that representative collections would be selected for the Netherlands and Commonwealth Governments, with the understanding that the bulk of the collection would remain in the Western Australian Museum.

In 1973, there was a further legislative change and the historic wreck provisions were removed from the *Museum Act* and incorporated into a new *Maritime Archaeology Act 1973* (WA). Meanwhile, concern was being expressed in legal circles about the validity of the State Act, which came to a head finally, in 1977, following a challenge in the case of *Robinson v. Western Australian Museum*, when the High Court of Australia ruled that the State Act was invalid. As a result of this decision the Commonwealth's *Historic Shipwrecks Act 1976*, which had been prepared before the High Court challenge was heard, was proclaimed to apply in the waters of Western Australia.

In fact, there were a few days between the High Court decision and the proclamation of the new Act when the wrecks in Western Australian waters were not protected under any form of legislation. Ironically, this hiatus occurred in the middle of the First Southern Hemisphere Conference on Maritime Archaeology, which was being held in Perth. Following this landmark decision, the *Historic Shipwrecks Act* proclaimed in the Commonwealth Waters off the Western Australian coast had jurisdiction from the low-water mark to the edge of the Exclusive Economic Zone.

Western Australia's *Maritime Archaeology Act* applied in State waters, which included rivers and enclosed bays and sites above the low-water mark. The complexity of the dual jurisdiction, as it applies in Western Australian waters, lies in the fact that the concept of State waters still exists, extending out three nautical miles from the coast. While the State legislation does not apply to things on or below the seabed, it does apply to things in the water column such as fish. So most State legislation, apart from shipwrecks now applies out to the three-mile limit and is a curious anachronism.

Other Australian States followed a similar process of proclamation, but as they did not have specific legislation covering underwater cultural heritage they enacted 'mirror' legislation to apply to their State waters (legislation that was essentially the same as the Commonwealth Act). In Western Australia, the State Act is vastly different from the

Commonwealth legislation. The protection provided by the *Historic Shipwrecks Act 1976* for underwater cultural heritage differed markedly from that offered by the *Maritime Archaeology Act*. Whereas the State Act protected archaeological sites, the Federal legislation was directed towards protecting shipwrecks and associated relics.

Initially, the *Historic Shipwrecks Act* gave no specified date to define 'historic' in relation to a shipwreck. To gain protection for a wreck, it was necessary to provide a justification to the Minister as to why the site should be protected. This proved to be unwieldy in implementation, particularly as it caused delays between the discovery and the gazettal, during which period the site was not protected. A number of amendments have been made to the Federal Act since its enactment, including one that introduced a rolling date, so that sites 75 years old or more are automatically protected.

The differences between the State and Federal legislation still create mind-bending anomalies though, as in the case where a wreck lies partially in Commonwealth waters and partially in State waters. The Commonwealth section (i.e. the part below the low-water mark) is protected if it is more than 75 years old, but the other part, above the low-water mark, will not be protected under the State Act unless its date is earlier than 1900. While the legislation is undergoing review at both State and Federal levels, another important development has been the UNESCO Convention on Underwater Cultural Heritage. This international Convention was adopted in November 2001, with WA Maritime Museum Director, Graeme Henderson, in the role of chair of the ICOMOS International Committee on the Underwater Cultural Heritage (ICUCH) which instigated the Convention. The Convention requires that countries enact enabling legislation, which, in the case of Australia, will require all States and the Commonwealth to rewrite their respective Acts.

It is, however, a landmark decision in that it clearly indicates that underwater cultural heritage should be protected, reaffirming the position taken in the early Western Australian initiative to protect sites. It is still unfortunate that Australia has been unable to ratify the UNESCO Convention, while many other countries have and indeed the amendment to the State Maritime Archaeology Act, which is completely out of date and now requires rewriting, has been awaiting Government initiative to start the process for over 20 years!

The 1960s and the early beginnings

Following the enactment of the State legislation, the Museum began to establish an administrative structure to look after the shipwrecks under its jurisdiction. Since there was no similar situation elsewhere in the world that could be used as a model, the Museum initially adopted a holding operation on the sites, rather than starting excavation or salvage. Additionally, there were no trained maritime archaeologists and only a few European countries that had experience in this area; hence there was absolutely no precedent for establishing a maritime archaeological programme. In what was acknowledged to be an unsatisfactory situation, the general public complained that nothing was happening, whilst amateur divers felt that they could, and therefore should, do the work. The Museum came under growing criticism over the lack of action.

In 1967, a head of a newly created Division of Human Studies at the Museum was appointed; under his direction, resources were acquired and staff recruited. A watch-keeping

operation was established on the two most important threatened sites, the *Batavia* and the *Vergulde Draeck*, providing accommodation facilities, boats and diving equipment. The Museum also sought advice on how a maritime archaeological programme should be run. In the late 1960s, a Historic Wrecks Advisory Committee was established to help advise on the direction of the programme and counter some of the criticism the Museum was attracting. This Committee, in its various manifestations, exists today as the Maritime Archaeology Advisory Committee and still meets regularly.

In the late 1960s, Mr G. van der Heide from the IJsselmeerpolder Museum in the Netherlands came to Perth at the invitation of the Museum to advise on how best to manage the programme. Staff were sent to the Netherlands to work with the excavation of the shipwrecks in the polders, but at that time no underwater archaeology was being done in the Netherlands, or for that matter any where else in the world except for a few exceptions. This was the beginning of a long and fruitful cooperation between the Museum and scholars in the Netherlands.

In 1969, a limited excavation had started on the *Vergulde Draeck* and, in 1970, a joint Museum and University of Western Australia expedition carried out a survey and limited excavation of the *Batavia* wreck site. In 1970, the Director of the Museum, made a submission to the Western Australian Government that it provide appropriate support for the maritime archaeological programme. The support was forthcoming and resulted in the appointment of a Head of the Conservation Laboratory, and the writer's appointment, in 1971, as Head of the Department of Maritime Archaeology.

The 1970s: The Department is established

With proper conservation facilities and the resources to carry out major excavation projects, the scene was set for a new initiative in maritime archaeology. A custom-built 12 m workboat, the *Henrietta*, was built and new curatorial staff were recruited to complement the existing technical staff. By 1972, the Department numbered about fifteen people. They had a new office in Fremantle, alongside the Conservation Laboratory, and there were field stations on Beacon Island, in the Houtman Abrolhos, and at Ledge Point, north of Perth. The first project was a survey of the *Trial* wreck site after which an excavation of the *Vergulde Draeck* site was undertaken.

By the end of the *Vergulde Draeck* excavation, the departmental team was experienced enough in shallow water surf-zone excavation to start work on the *Batavia*. The *Vergulde Draeck* was chosen first for excavation, because of its proximity to Perth and because the site was under greater threat than the *Batavia*. The *Batavia*, however, was a much bigger project; not only was the site a lot larger and more complex, but the logistics of working in the remote Houtman Abrolhos was extremely demanding. Work started on the *Batavia* site in December 1972, the first of four excavation seasons. In total, approximately 450 days of fieldwork were logged on the *Batavia* project. During the course of the excavation, it became clear that a large intact section of the ship had survived and it was decided to raise this section for conservation. This inevitably led to the question of where the raised section (measuring some 30 m x 10 m x 6 m) could be housed.

Fortunately, Fremantle in the late 1970s was fruitful ground for such a quest. There was

a large, derelict heritage building—the Commissariat Building—that was found to have rooms of suitable size to house the reconstruction. Indeed, it was spacious enough to house a large number of massive exhibition galleries as well as the respective Departments of Maritime Archaeology and Materials Conservation. The refurbishment of the Commissariat Building was carried out by the Public Works Department and won numerous heritage awards for the quality of the restoration. The building was officially opened in 1979, housing the restored *Batavia* hull and portico façade and exhibitions of material from the wreck sites investigated by the Department. At the end of the *Batavia* project, work started on a post-settlement maritime archaeological programme. Initially, when the Museum started its programme in maritime archaeology, the current thinking was that the Dutch wrecks were the most important sites.

The later, early 19th century and post-settlement sites were thought to be relatively insignificant at the time. The Department became increasingly concerned, however, at the public perception that the Museum was not interested in these sites, which was leading to widespread looting of many of them. It was recognized that these sites would prove immensely important to the early European history of Western Australia and of Australia, and a programme of work was developed for them. This commenced with excavations on the *Eglinton*, followed by the *James Matthews*, *Rapid* and *Lively*. In 1974, a wreck inspection programme was established that monitored reports of wrecks and inspected the sites. In 1978 he led the very successful Wreck Inspection North Coast (WINC) expedition, which examined sites in the far north of the State.

Into the 1980s: development and diversification

The Department's Dutch wrecks programme did not finish with the excavation, conservation and reconstruction of the *Batavia*. It continued with work on the *Zeewijk* site, where several seasons of excavation and survey were carried out. Later, the Dutch wreck programme turned to the *Zuytdorp*, an incredibly difficult site to work. On another front, a programme was started looking at iron and steam shipwrecks. This led to the First Australian Seminar on the *Management of Iron Vessels and Steam Shipwrecks*, which was held in 1988. The important excavation of the steamship *Xantho*, with the subsequent recovery of the vessel's engine, started yet another interesting and exciting initiative for the Department. The dismantling of the concreted and corroded engine, and its subsequent conservation process, has provided new insights into the study of iron shipwrecks and their conservation.

Land archaeological work associated with maritime activities is another branch of research within the Department. Research was undertaken relating to the guano industry in the Abrolhos, as well as studying the whaling industry, particularly at the Norwegian Bay Whaling Station at Point Cloates and pearling in the Monte Bello Islands. The Department has been involved in numerous land archaeological projects, particularly where they interface with the maritime milieu.

In 1981 Australia's first wreck access programme was started, which has since developed into an outreach programme. The objective of such programmes is to provide information for the public as well as opportunities for them to look at and enjoy shipwrecks. Through public involvement and introducing the concepts of an 'Underwater' Museum where

the wreck sites are the 'show cases' and the ethos is 'please enjoy—look but don't touch', the Department encourages the concept of protecting sites for future generations. Other avenues for public involvement in maritime archaeology include the Maritime Archaeological Association of Western Australia (MAAWA), an amateur organization founded in 1974. This Association assists the Department in projects and played a particularly important role in the excavation of the *Batavia* and the other early departmental projects.

It also conducts its own projects and has a long and impressive publications record. Another relatively new initiative targeting the public, is the Australasian Institute for Maritime Archaeology (AIMA)/Nautical Archaeology Society (NAS) training courses. As well as providing technical training in maritime archaeology, these courses raise awareness about shipwrecks and the issues relating to the preservation of underwater cultural heritage. The Department has played an important role in the Australasian Institute of Maritime Archaeology (AIMA) since it was first established at the Second Southern Hemisphere Conference on Maritime Archaeology in Adelaide in 1983. Taking a leading role in the formative years of the Institute, the Department still regularly produces and edits the annual *AIMA Bulletin*, now in its 40th year of publication.

The 1990s

In 1994 the Federal Government announced in its cultural policy statement *Creative Nation* that the Western Australian Maritime Museum would be established as a National Centre of Excellence for Maritime Archaeology. Funding was provided for a three-year period to support a number of projects the funding ended in 1998.

In January 1998, there were reports from the Shark Bay Shire that a French coin and lead seal had been discovered on the northern part of Dirk Hartog Island. The coin (an *écu* dated 1766) had been located with a metal detector in the area reputed to have been the site of St Aloüarn's annexation of Western Australia for France in 1772. A team, including staff of the Department of Maritime Archaeology, Centre for Archaeology, University of Western Australia, and volunteers, subsequently returned to the site and using a combination of remote sensing and traditional archaeological methods located and then excavated an intact bottle, complete with a lead closure containing another French *écu* dated 1767. In 1997 reports were received that a grave site on Beacon Island had been discovered and a sword recovered. This site was excavated in 1999 and found to be a mass gravesite containing the bodies of eight people including an infant of less than 3 months old.

Into the new Millennium

In 2002, the spectacular new Maritime Museum was opened on Victoria Quay, complementing the museum in the Commissariat Building. The new Maritime Museum, evolving from the work of the Department, is largely devoted to maritime history, and the Commissariat Building has become a shipwrecks museum devoted to maritime archaeology and conservation.

Further work was carried out at Cape Inscription in 2003 and concentrated on a site survey and further magnetometer work, and an assessment of four-wheel drive damage to the *Persévérant* site, a French whaler lost on the north east side of the island in 1841. In 2004,

the *Correio da Azia*, the earliest Portuguese shipwreck in Australia was discovered. It was an advice boat travelling from Lisbon to Macau in 1816 and was wrecked on Ningaloo Reef. Letters in the Lisbon archives include a report of the loss by the Captain and the report of a vessel, the *Emillia*, that was sent to chart Point Cloates, which at that time was a notorious navigational hazard for vessels sailing to China. Previous Museum expeditions failed to locate the site because of adverse weather and the difficulty of searching this reef area with a magnetometer in a regular search pattern. Fugro, a Western Australia survey company agreed to conduct an aerial magnetometer search of the area where the vessel was thought to have been lost.

The survey found two sites, one of which was the *Correio da Azia*, the other a, as yet, unidentified site. The Deep Water Graveyard south-west of Rottnest Island, was investigated in 2001. UTS Geophysics, a local company, flew an aerial magnetometer survey over a section of the graveyard and produced some astounding results. Eight clear magnetic anomalies were located and an additional survey over the HMAS *Derwent* site showed that this vessel could be detected easily in 200 m of water. The graveyard is host to a wide spectrum of material, from utilitarian barges and dredges to the remains of graceful clipper ships that ended their days as coal hulks in Fremantle harbour before being scuttled. There are a total of 47 identified wrecks in the Rottnest Graveyard.

2010 onwards

New developments within the State have created opportunities for cooperative projects and programmes. While the economy in WA has slowed down due to the end of the mining boom, the Department has had to be innovative in its approach to funding. In particular the linkages with local universities have been highly fruitful. In 2013 the Department in collaboration with the University of WA (UWA) were awarded an Australian Research Council Linkage Grant with a project title: Maritime archaeological reassessment program: examining Australia's first-studied shipwrecks and associated datasets using innovative technologies.

The aim of the project was to make a significant contribution to maritime archaeology and our understanding of the past by returning to shipwreck sites that were excavated over 40 years ago to examine how approaches to maritime archaeological sites have changed over time in terms of both new research questions and new technologies. This 3-year project has investigated a range of sites with the cooperation of research workers from Australian and international organizations. While the project has enormous significance for maritime archaeologists, it also has a significant impact on the Museum. Bringing new discoveries to the public both in the real Museum and in the virtual museum.

The connection between maritime archaeology and a museum

The above account of the work of the Department of Maritime Archaeology within the WA Museum I think underlines the connection between museums and archaeology. Much, if not all, of the developments at the WA Museum in relation to maritime matters were the results of excavation. The excavations led to the development of a whole range of things that benefitted the museum, including the development of new conservation techniques, development of new technologies, public involvement, education, wreck trails, university

research, protection of sites, school courses, virtual museums, management practices, and so on.

The concept of a museum has also grown from what would be considered a traditional museum, in two different directions. Firstly the museum involves the site too, so visitors can visit the wreck site (either by diving or by viewing from the surface) and they see the site at the Museum where objects are conserved and displayed with explanations of what they are. Secondly, the museum and the wreck site can be visited virtually, through the Internet the site can be seen through web pages or with the new 3D technology and be experienced by people who would never visit Australia, thus creating the concept of a whole new audience.

SPEAKER PROFILE:

JEREMY GREEN DLitt (UWA), BSc *Hull*; BA Hons, MA *Oxon*, FAHA

Jeremy Green is Head of the Department of Maritime Archaeology at the WA Museum. He is credited with achievements over five decades in a field that has made Western Australia internationally renowned for best practice in maritime archaeology and raised the profile of the State's extraordinary maritime heritage.

A graduate of the University of Hull, where he completed a Bachelor of Science in Physics and subsequently Oxford University, he spent four years working at the Research Laboratory for Archaeology at Oxford on the development of an underwater metal detector, a proton magnetometer and four systems of underwater photogrammetry. These techniques and instruments were investigated in field conditions in England and in the Mediterranean. Jeremy has been involved in research in over 15 countries and has developed training programs, including UNESCO Regional Workshops to advance underwater cultural heritage in countries such as China and Sri Lanka.

Jeremy holds numerous positions including membership of the Council for Nautical Archaeology, Honorary Research Fellow in the School of Social Sciences at UWA, Fellowship of the Institute of Archaeology amongst others. He has also been Adjunct Associate Professor at Curtin and James Cook University. He has been the recipient of the highest honour that can be awarded by the Australian Archaeological Association, the Rhys Jones Medal.