



Safeguarding the living Graveyards in Sea

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සම්පූර්ණයෙන් හෝ අර්ධ වශයෙන් ජලාශ්‍රිත සන්ධර්භයක ස්ථාන ගත වන සංස්කෘතික, ඓතිහාසික හෝ පුරාවිද්‍යාත්මක අගයන් සහිත සියළුම ආකාරයේ මානව මැදිහත් වීම් ජලාශ්‍රිත සංස්කෘතික උරුමය ලෙස හඳුන්වයි. ඒ හා බැඳුණු විවිධාකාර ක්ෂේත්‍ර අතර ජලාශ්‍රිත පරිසරයක බිඳී ගිය හෝ ගිලී ගිය නෞකා ප්‍රමුඛ වේ. පෘථිවි පෘෂ්ඨයෙන් සියයට හත්තැවක් පමණ වන සමුද්‍ර පතුල මත මිලියන තුනකට වඩා ගිලී ගිය නෞකා සැගවී ඇති බව විශ්වාස කරයි. ඓතිහාසික හෝ පුරාවිද්‍යාත්මක අගයකින් තොර වූ වද ගිලී ගිය නෞකා ආරක්ෂා කිරීම සඳහා පාදක වන බොහෝ හේතු සාධක හඳුනාගත හැක. මේවා බොහෝ විට සමුද්‍ර පතුලෙහි කෘත්‍රීම කොරල් පර ලෙස ක්‍රියාකරන අතර ඒ හා බැඳුණු සුවිශේෂී පාරිසරික පද්ධතියක් නිර්මාණය කරයි. මසුන් ඇතුළු සමුද්‍රික ජීවීන්ගේ ව්‍යාප්තිය හා සෘජුව සම්බන්ධ වන අතර ධීවර කර්මාන්තය හා පාරිසරික සංචාරක කර්මාන්තය මේ තුළින් පෝෂණය වේ. ශ්‍රී ලංකාව සතුවද මෙවැනි ගිලී ගිය නෞකා විශාල ප්‍රමාණයක් පවතින අතර ඓතිහාසික හෝ පුරාවිද්‍යාත්මක වටිනාකමකින් තොරව වුවද මේවා ආරක්ෂා කිරීමේ වැදගත්කම සහ ඒ සඳහා වන නෛතික රාමුව සාකච්ඡා කිරීම මෙම රචනාවේ මූලධර්ම අරමුණ වේ.

ප්‍රමුඛ පද: ජලාශ්‍රිත සංස්කෘතික උරුමය, ගිලී ගිය නෞකා, පාරිසරික සංචාරක කර්මාන්තය,

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Introduction

Underwater Cultural Heritage (UCH) means all traces of human existence having a cultural, historical or archaeological character which have been partially or totally underwater, periodically or continuously, for at least 100 years. (UNESCO Convention of the Protection of the Underwater Cultural Heritage, 2001). Various types of sites are included into UCH. Shipwrecks can be identified as the most prominent type of sites within the UCH.

According to the Oxford dictionaries shipwreck is the destruction of a ship at sea by sinking or breaking up, for example in a storm or after striking a rock. Seventy percent of our planet is comprised of water. These Oceans are become homes for millions of marine life. We sail thousands of ships on these oceans. It is believed that more than 3 million undiscovered shipwrecks are spread across ocean floors around the planet. Large portion of these shipwrecks can be classified as archaeological treasure or parts of the UCH of human beings. Commonly they refer as 'time capsules' of our past containing interesting historical information often better preserved than on archaeological land sites. However with the technological advances in underwater survey techniques using remote sensing methods and deep water excavations using Remote operated vehicles (ROV) reveal most of these historical wrecks which are previously protected by the depth of the water. Often their contents salvaged for profit rather than information on past (Yorke, 2006).

Even without an archaeological value a shipwreck has many other reasons to be protected. They have a great potential for ecotourism. Also shipwrecks act as artificial reefs on seabed. Artificial reefs are man-made structures placed on the seabed and constructed primarily for several reasons. Most prominent reason among them is these artificial reefs combining fish for easy capture and for increasing the productivity of the fish and other organisms in the surrounding coastal waters by serving as breeding and nursery areas for different kinds of marine organism. They have also been successfully used as habitats for oysters, seaweeds, lobster and abalone; to conserve shorelines. Artificial reefs can also utilize for promoting tourism activities such as diving and sport fishing. While shipwreck may settle in watery grave, gradually most come blooming back to life. After several years submerged in salty water, shipwrecks become living cities for marine life. These living graveyards imitate artificial reefs. Sri Lankan cost line records large number of submerged shipwreck, and many other to be discovered.

Some of these sites were identified as archaeological heritage and actions has been taken to protect them in to some extent with available legislations. Most of the other wrecks are in a great danger with salvage activities and many other reasons. Onthis research paper discusses the importance of protecting shipwreck sites as UCH as well as living graveyards in the sea.

Ship in to Living Graveyards

In order to understand the way in which a living graveyard appears it is important to understand the site formation process of a shipwreck site. Its include the initial wrecking stage as well as post-depositional activities include human interference such as salvage wrecks, as well as natural phenomenon such as waves, currents and site environment. Shipwreck can vary from almost completely intact vessels left in state of preservation from when they sank, to a few scattered remains of the see floor.

Maritime archaeologists mainly focus on wreck rather than the physical context of it. However it is also important to understand the environmental settings within which shipwrecks occur to explain the site formation process of a shipwreck site. Site formation process varies from site to site based on the nature of the complex and depending variables that constitute the environmental setting such as the nature of the ship, building materials, condition of its loss and chemical and physical properties of water cause reactions with the metals (Ford, 2011).

“Marine ecosystems are among the largest of Earth’s aquatic ecosystems. They include oceans, salt marsh and intertidal ecology, estuaries and lagoons, mangroves and coral reefs, the deep sea and the sea floor” (Wikipedia). They have a large biodiversity comparing with the terrestrial ecosystems and they are very important for the overall health of both terrestrial and marine environments. Within the marine ecosystems coral reefs play an important role since they hold the highest biodiversity among marine environments. These ecosystems provide food and shelters for the highest number of marine species.

The Great Barrier Reef, located in the Coral Sea, off the cost of north-east Australia is the World’s largest coral reef ecosystem. It’s composed of over 2,900 individual reefs and 900 tiny islands. The Great Barrier Reef is the best example to denote marine coral reef ecosystems in the World.

Also it has the Worlds' best examples for the living graveyards or sunken ships converted in to artificial reefs.

SS Yongala is a passenger ship which wrecked on 23rd March 1911 off Cape Bowling Green, Queensland, Australia. She was caught in to a cyclone while it was navigating from Melbourne to Cairns and sank south of Townsville. All hundred and twenty two passengers onboard were frozen and it is considered as a most tragic incident in Australian Maritime history. After few decades this graveyard came back to life forming an ecosystem unique for the site. She has an extensive array of marine life and considered as a most intact historic shipwreck in the World. Today SS Yongala considered as a heritage site and number of research works has been carried out. Most of the artifacts derived from her have been displayed in the Townsville Maritime Museum. Today the wreck is a popular dive spot for tourist come from the different parts of the World. More than 10,000 divers coming from around the World visit the site every year.

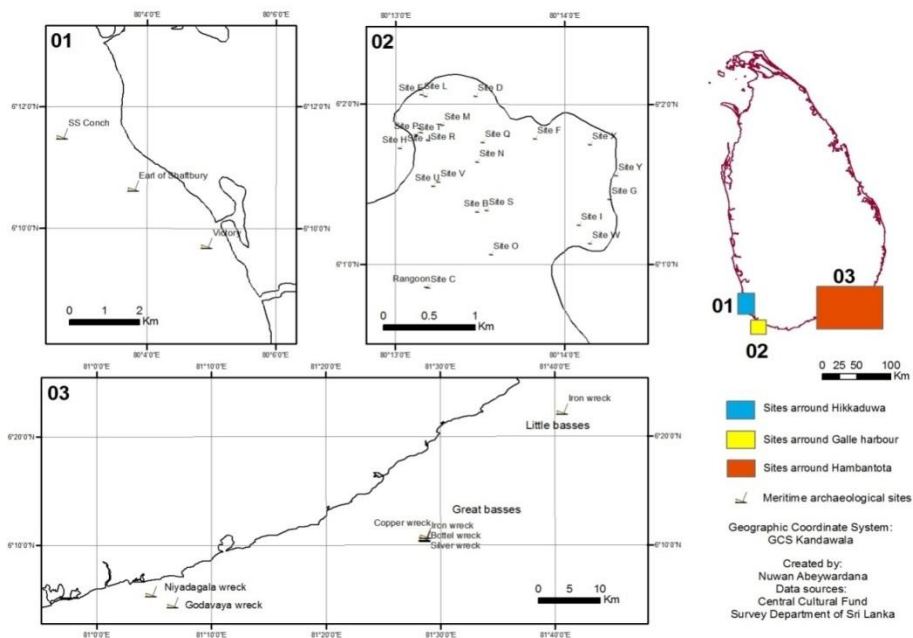
SS President Coolidge was another largely intact luxury liner and a famous diving destination for the tourist all around. Prior to World War II it was operated as a luxury liner providing trans-Pacific passenger and commercial services. Later it was converted in to a military ship which carrying troops in the South Pacific. Importance of the site is that divers can see a largely intact luxury liner and a military ship at once. They can swim through numerous decks and objects like guns, cannons, jeeps, trucks and personal supplies. During few decades Coolidge has become a living graveyard while Coral grows around with beautiful see creatures like reef fish, barracuda, lion fish and sea turtles, forming a natural ecosystem on it.



Figure 1: SS Yongala shipwreck (Photo Credit: 1)

Living Graveyards in Sri Lankan context

As a result of the unique localization and geo-physical structure of the island, none of the Sri Lankan culture, civilization, technology or life styles can be completely isolated from the ocean. Any point on the island is not distant than 120 km from the ocean proving that this small island has a strong relationship with the huge water bed around it from the very first day of its formation. As a result thousands of shipwrecks submerged on sea around the island during the long time period from early historic ages to present day.



Map 1: Major historical and Archaeological shipwrecks around Southern Coastline

There are number of shipwreck sites which have formed artificial reef ecosystems. SS Conch is a good example found 3km from the Akurala beach. Local divers believe that it was wrecked in 1903 and considered as the first oil tanker (oil transportation ship) to sink. Conch is a famous tourist diving destination in Southern Sri Lanka. According to the divers oil tanks of her still visible and the captain's cabin is intact and accessible. Depth on the deepest part of the ship is recorded 21 m from the sea surface. SS Conch can consider as a significant archaeological monument as well as a famous tourist destination in Sri Lanka.

In year 1893 Earl of Shaftsbury was sailing from Bombay to Rangoon. She had crashed on a reef and made a submerged graveyard 2 miles away from Akurala by drowning 6 of the crew. Victory is another shipwreck recorded from the southern sea. Years back local group ask permission from the department of archaeology for salvage wreck for iron and they have done considerable damaged for the wreck.

HMS Herms is a shipwreck locates near Batticaloa at a depth of 42 meters and consider as the first ship which designed to carry aircraft. It was sunk by a Japanese air attack in April 1942 (Sunday Times, July 17th 2011). Beside these historically important wrecks there are large numbers of considerably new wrecks are recorded from the waters of Sri Lanka. MV cordiality is one example; a large ship attacked by LTTE Sea tigers and sank near Pulmoddai. It was attacked in 1997 and six of the sailors died. Ship was sunk with the cargo making a graveyard under the Pulmoddai Sea. Within few years corals started to grow on its surface and gradually attracted thousands of fish. It has transformed in to an artificial coral reef and graveyard became live. Colombo cargo wreck and Colombo Thapropane East wreck are another 2 examples.

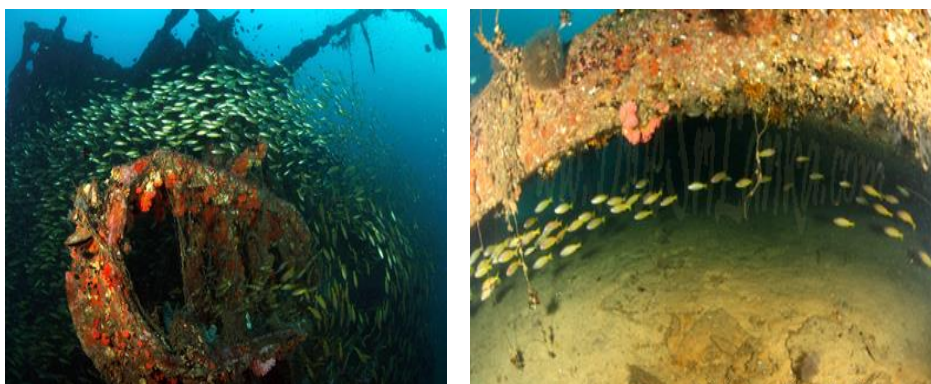


Figure 2, 3: Colombo Thapropane North wreck
(Photo credit: www.DiveSriLanka.com)

Sri Lanka's marine environment includes the territorial waters, Extended Economic Zone (EEZ) and the inshore coastal areas influenced by sea water. The territorial waters and inshore coastal areas identified as the most vulnerable to human activities both within and outside their limits. Maintaining the sustainability of the marine environment and its diverse ecosystem is a challenge for Sri Lanka. Protection of these

shipwreck sites or living graveyards is greatly effect in maintaining the balance of marine eco systems.

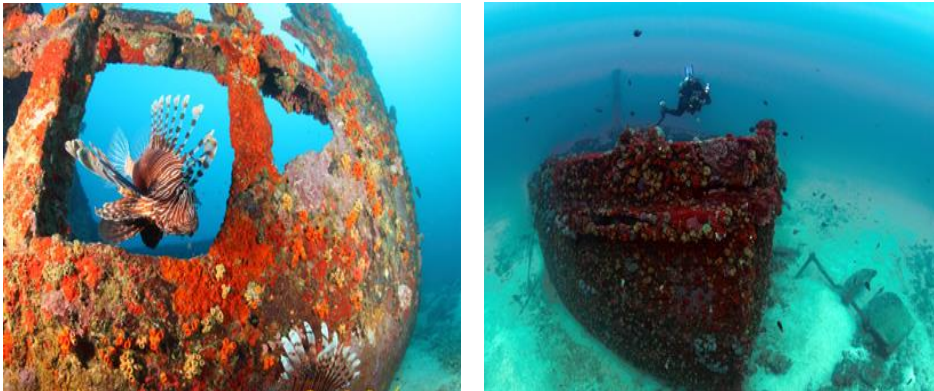


Figure 4, 5: Colombo Thaprobane East wreck
(Photo credit: www.DiveSriLanka.com)

Threat on Living Graveyards

There are many factors cause on damage for this great resource. Marine Salvage can consider as the first priority. Marine salvage is the process of recovering a ship, part of it, its cargo or other property after a particular shipwreck. It includes towing, refloating a sunken or ground vessel, or patching or repairing a ship (Wikipedia). Today salvage of abounded old wrecks for iron is often considered a high priority in this part of the World. In last two decades number of wrecks in Sri Lankan waters has been salvaged by different salvors mainly targeted for its iron.

A salvaged ship can be a complete, working cultural unit accidentally wrecked during a specific movement in time. It can be a complete intact vessel left in a state of preservation or a few scattered remains of the sea floor. However it is a part of our maritime cultural landscape as well as archaeological heritage of the country. In other hand shipwrecks act as artificial reefs on seabed and make breeding places for millions of marine life. Many developed countries like Australia, United Kingdom, United States of America and New Zealand sometimes purposely sink take off ships for create artificial reefs and tourist destinations for wreck diving. (Rodrigo, 2010) In Sri Lanka we have number of shipwrecks which happened during the different eras of our history starting from historical period to present day. Most of these sites have potential to

develop as artificial reefs and popular destination for dive tourism. Unfortunately number of important wreck sites in Sri Lanka already salvaged piece by piece for iron and few other sites has the danger for been salvaged. In that sense it is essential to strength the laws and legislation to protect these living graveyards for future.

Legislative Framework

Most of the shipwrecks that sink in water deep enough to escape immediate salvage activities. As a wreck becomes covered by sand, coral, mud or silt overburden which seals it off from the harmful effects of oxygen, it will eventually reach a state of stabilization, where it can remain intact for hundred or even thousands of years. Since now the greatest potential for damage to any shipwreck site is human intervention (Johnston, 2006). Therefor local and international legislations are needed to provide for the better preservation of the shipwreck sites lies in the seafloor. There are several categorize of laws exist to support in protection of shipwreck sites in Sri Lanka.

Maritime zone law of 1976 is a law to provide for the declaration of the territorial and other maritime zones of Sri Lanka and all other matter connected with. According to the gazette number 248 issued in 15t January 1977 five maritime zones name as Territorial sea, Contiguous zone, Extended economic zone, Pollution prevention zone and Historic waters have been declared. The law clearly described the eligible activities within these zones. The cost conservation act controls activities in costal and inter-tidal zones. Also the National Aquatic Resources and Development Agency (NARA) act deal with the all sort of living and nonliving materials link with the seabed. These set of acts and regulations give a basic framework for protection of shipwreck sites. However they are not specifically mentioned the shipwreck sites.

Historically and archaeologically importance shipwreck sites cover under several heritage-related legislations. Antiquities Ordinance No.9 of 1940: an ordinance to provide better preservation of the antiquities of Sri Lanka is the most important among them. According to the act every ancient monument and undiscovered antiquities shall be the property of the state. The archeological department of the country is the responsible institute for all tangible heritages which has crated before 1890.

In 1998 it has given power to include territorial sea. According to The Antiquities (Amendment) Act, No. 24 of 1998 the authorized body concerned with archaeological evidences of the land and also under the territorial sea of the country is the Department of Archaeology, Sri Lanka. Since there is a vast array of archaeological data scattered all over the country, whenever any development, industrial scheme or project is proposed by the Government, any other institution or person, such scheme or project shall not be approved or permitted until a report is submitted by the Director General of Archaeology, as to the effects the implementation of such scheme, or project may have upon such land or any antiquities within it. Finally every development project in this country should be subjected to Archaeological Impact Assessment (AIA). The project proponent has to allocate a sum not exceeding 1% of total cost of the project for the AIA. These regulations are proclaimed in terms of provisions in the Antiquities (Amendment) Act, No. 24 of 1998 and Antiquity Ordinance 2000.

There are number of AIAs' were carried out in territorial sea in this regard. AIA of the New Colombo Port City development Project (NCPDP), Ambalangoda fisheries harbor project and Galle harbor development project are few examples. There is a draft proposal name as Protection of the Maritime Cultural Heritage Bill. It is proposed to establish a Maritime Cultural Heritage Authority to control, manage and protect maritime cultural heritage of the country. Authority will get the power to issue of license and permits for survey and excavation within a protected area, declaration of protected areas in territorial sea and carryout archaeological impact assessments.

Above mentioned legislation help to protect and management of the historically important shipwrecks in our territorial sea. Even without an archaeological importance shipwrecks have number of reasons to be protected. There for we have a great responsibility to protect these living graveyards from treasure hunters and salvors. In many countries implement especially designed legislation for the protection of shipwreck sites. Protection of Wrecks Act 1973 in United Kingdom is an act to secure the protection of wreck in territorial waters and the sites of such wrecks, from interference by unauthorized persons; and for connected purposes. Wreck and Salvage Law and Protection of Military Remains Act 1986, are other connected laws to protect their living graveyards.

Conclusion

Shipwrecks are graves of gallant sailors who sailed in our waters and who buried with their ships; whatever the nationalities they are. Most of them are part of our underwater cultural heritage and refer as 'time capsules' of our past containing interesting historical information often better preserved than on archaeological land sites. Even without an archaeological value a shipwreck has many other reasons to be protected. They have a tremendous potential for ecotourism. Also shipwrecks act as artificial reefs in seabed and impact on marine biodiversity.

There are many ways ships were submerged throughout the ages. Deadly storms, hidden rocks, iceberg or war fair are among them. Whatever the reason, shipwreck is a lost, a tragedy. Thousands of ships solved by the sea and never to surface again. After many years a shipwreck or a watery grave comes to live again. An ecosystem, a new empire is built. She will transfer to a colossal sanctuary for marine life to feed, dwell and breed. Its mother nature's miraculous wonder to spore nutrition for marine life's from man's mistake. So we all have a moral obligation to protect these living graveyards for future.

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