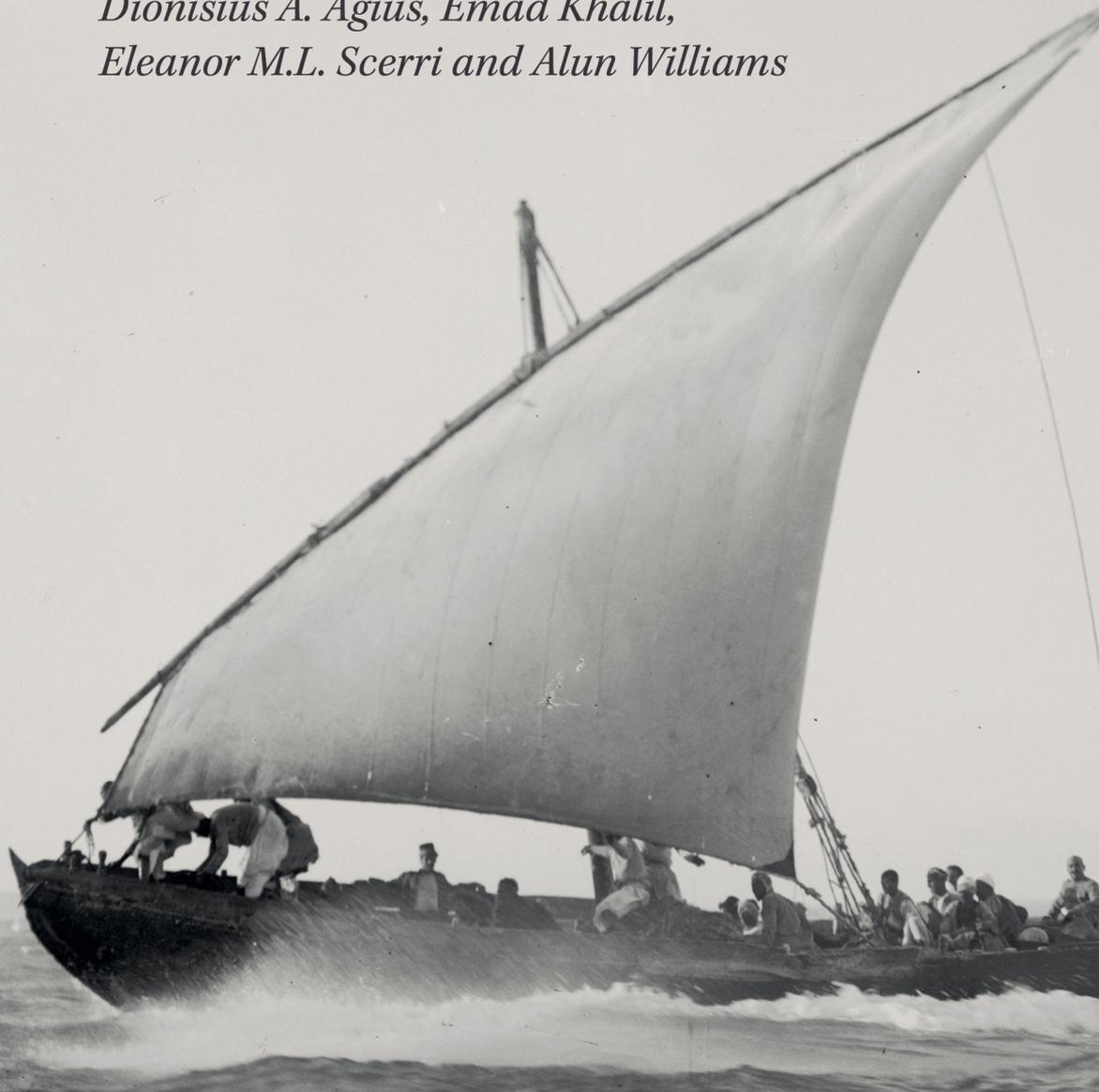


# Human Interaction with the Environment in the Red Sea

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# The Potentials of Maritime Archaeology in the Kingdom of Saudi Arabia

*Emad Khalil*

## 14.1 Introduction

Since the early 1960s, practising archaeology underwater started to become an internationally recognised discipline. Since then, numerous underwater archaeological projects were carried out in Mediterranean and beyond,<sup>1</sup> hundreds of archaeological sites and shipwrecks were discovered and excavated in different regions,<sup>2</sup> and numerous academic departments and research centres were dedicated to the study of underwater archaeology.<sup>3</sup> Moreover, during the past two decades, great advances have occurred in the methods and techniques used in underwater surveys and excavations, which enabled exploring extended areas of the seabed.<sup>4</sup> On the other hand, there is an international trend adopted by cultural heritage organisations, such as the UNESCO and the International Council on Monuments and Sites (ICOMOS), to promote the preservation and public presentation of underwater cultural heritage and to emphasise the importance of education and capacity building in that field.<sup>5</sup> Nevertheless, so far, there has been little interest among the Arab countries, despite their unique and rich maritime legacy, in the exploration, preservation and presentation of underwater cultural heritage. Accordingly, this paper will look at the potentials for maritime archaeology in Saudi Arabia in terms of research and exploration as well as education and training focusing on the Red Sea Saudi coastline.

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- 1 George Bass (ed.), *Beneath the Seven Seas* (London: Thames & Hudson, 2005).
  - 2 Oxford Roman Economy Project, Shipwrecks Database, [http://oxrep.classics.ox.ac.uk/databases/shipwrecks\\_database/](http://oxrep.classics.ox.ac.uk/databases/shipwrecks_database/)
  - 3 UNESCO, Underwater Archaeology Courses at Universities and other Institutions, <http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CLT/UNDERWATER/pdf/Universities%20with%20Programs%20in%20Underwater%20Archaeology.pdf>.
  - 4 Jeremy Green, *Maritime Archaeology: A Technical Handbook* (San Diego: Elsevier Academic Press, 2004).
  - 5 UNESCO 2001 Convention on the Protection of the Underwater Cultural Heritage. <http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/2001-convention/official-text/>

## 14.2 Maritime Archaeology in the Red Sea

Maritime archaeology is defined as the study of human interaction with the sea, lakes, rivers through the archaeological study of material culture, including vessels and their equipment, cargoes and maritime facilities, such as anchorages, harbours and lighthouses. That is in addition to the study of maritime landscapes and traditional coastal communities.<sup>6</sup> On the other hand,



FIGURE 14.1 *The main sites mentioned in the text. Reproduced with kind permission from Eric Gaba—Wikimedia Commons user: Sting.*

6 James Delgado (ed.), *Encyclopaedia of Underwater and Maritime Archaeology* (New Haven: Yale University Press), p. 259.

underwater archaeology is concerned with the investigation and study of underwater cultural heritage which is defined by the UNESCO as "... all traces of human existence having a cultural, historical or archaeological character which have been partially or totally under water, periodically or continuously, for at least 100 years", such as shipwrecks, submerged structures, prehistoric landscape and material culture, human remains and aircrafts.<sup>7</sup> Accordingly, when speaking about maritime archaeological research in the Red Sea, we mean by that the study of archaeological sites of maritime nature whether they are located on land or underwater.

However, before discussing some aspects of maritime archaeology in the Red Sea region, it is worth mentioning that the Red Sea coastline has certain distinctive features which influenced maritime activities in the region throughout history.

The Red Sea extends from the north-west to the south-east for about 2000km between 12° N to 32° N. Its width ranges from about 145km in its northern part to 362 km opposite to the Eritrean coast, while its connection with the Gulf of Aden at the Strait of Bab El-Mandab is about 32 km wide. The countries that border the Red Sea are Egypt, Sudan, Eritrea, Djibouti, Saudi Arabia, Yemen, Jordan and Israel, out of which Saudi Arabia alone extends for more than 1500 km along the Red Sea coast. In addition to its Red Sea borders, the Saudi coastline also extends for more than 500 km along the Arabian Gulf.<sup>8</sup>

There are three distinctive features which characterise the Red Sea coastline and had direct influence on maritime activities including the location of harbours and anchorages along its coast. These features are: the headlands and promontories, the coastal islands, and the coral reefs.

1—Promontories or headlands protruding from the coast created confined bays protected from the northern prevailing winds and coastal currents, which enabled such bays to function as safe natural anchorages. Some of the best example for such arrangement is Ras Banas and the Foul Bay in Egypt where the harbour of Berenike is located.

2—The Red Sea is characterised by hundreds of islands, most of which are within a distance of just few kilometres from the coastline.<sup>9</sup> Many of these islands are surrounded by coral reefs, which make their shores unsuitable for safe anchorage; however, the islands and the adjacent reefs operate as natural

7 UNESCO 2001 Convention, Article 1.

8 Mohamed Khamis Al-Zouka, *Goghrafait Al-Baħr Al-Aħmar* (Alexandria: Dar Al-Ma'rafa Al-Game'ya, 2003), pp. 17–20.

9 Gamal Ĥamdān, *Shakhsīyyet Misr: Derasa fi 'abqareyet Al-Makan*, Vol. 1. (Cairo: 'alam Al-Kutub, 1980) pp. 501–505.

breakwaters enabling boats to shelter in their lee sides during rough weather. Saudi Arabia contains along its Red Sea coasts over 1000 coastal reefs and islands including some of the largest and environmentally richest islands in the Red Sea such as the Farasan Islands.

3—Long coral reef platforms extend adjacent to the Red Sea coasts varying in width from a few metres to several hundred metres. The coral growth is particularly promoted by the high temperature and salinity of the Red Sea waters as well as water clarity, which enables sunlight to penetrate the water to the depth of over 40 m.<sup>10</sup> These reefs make long stretches of the Red Sea coast unusable for ship anchorage, as they represent a great danger for ships approaching the coasts particularly in rough weather. It is also a major obstacle for attempts of coastal sailing at night in the Red Sea. Hence, coral reefs are probably the main cause of shipwrecking in the Red Sea throughout history.

Harbour sites on the Red Sea coast, however, are generally located at the outlets of wadi systems where floods occur during rainy seasons. The Red Sea region occasionally experiences heavy rains which run through numerous wadi systems to be finally deposited into the sea.<sup>11</sup> Water and sediments deposited into the sea help create areas clear from coral reefs as they result in decreasing the salinity and clarity of seawater necessary for coral growth. As a result, bays with sandy beaches form on the seacoast where the wadis debouch, interrupting the continuous line of coral reefs. This can be seen for example in Safaga, Wadi Gawasis and Quseir Al-Qadim (Myos Hormos) in Egypt, and Umluj, Rabigh and Jeddah in Saudi Arabia. These bays were utilised as the main anchorages and harbour sites along the Red Sea coast. It is also worth mentioning that many of the wadis themselves were used as transport routes from inland towns to Red Sea coast.

It is believed that early evidence for maritime activities in the Red Sea dates back to the Middle Stone Age in association with human settlements on the coast of Eritrea.<sup>12</sup> Moreover, from at least the third millennium BC onwards the Red Sea was sailed by the Ancient Egyptians, Phoenicians, Greeks, Arabs and Indians.<sup>13</sup>

10 Al-Zouka, *Goghrafait Al-Baħr Al-Aħmar*, pp. 49–51.

11 Ĥamdān, *Shakhsīyyet Misr*, pp. 487–499.

12 Geoffrey N. Bailey and Nicholas C. Flemming, "Archaeology of the continental shelf: Marine resources, submerged landscapes and underwater archaeology", *Quaternary Science Reviews* 27 (2008): 2153–2165.

13 Lucy Blue, "The Red Sea", in *The Oxford handbook of maritime archaeology*, eds. Ben Ford, Donny Hamilton, and Alexis Catsabis (Oxford: Oxford University Press, 2011), pp. 496–512.

During the Ancient Egyptian period, archaeological evidence indicates that the Red Sea was utilised as a maritime highway connecting the regions that bordered its coastline.<sup>14</sup> Hence, the Pharaohs in Egypt established a number of Red Sea anchorages and harbours through which maritime voyages were carried out to Sinai, the southern Red Sea and East Africa.<sup>15</sup> During the Hellenistic and Roman periods, the Red Sea was part of one of the most significant maritime trade networks in antiquity which involved sailing to Arabia, East Africa and India. Under the Ptolemies, a number of harbours, settlements and coastal towns were founded along the African and Arabian coasts of the Red Sea.<sup>16</sup> Regular expeditions to the southern coasts of the Red Sea to capture elephants for war were conducted under the second to the fourth Ptolemies. As the Hellenistic sailors became more familiar with the Indian Ocean, voyages to India and East Africa were carried out. However, the journeys had to follow the coastal route since the Greeks did not understand the workings of the monsoons probably until the end of the 2nd century BC.<sup>17</sup> Under the Romans, trade and transport in the Red Sea and the Indian Ocean took a different dimension. Trade with Africa, Arabia and India was of substantial economic importance to the Roman Empire. It supplied the people of Rome with everyday necessities such as incense and spices, in addition to many luxuries, like ivory, gems and silk.<sup>18</sup> Under Augustus and his successors of the 1st and 2nd centuries, Eastern trade underwent rapid expansion to meet the increasing needs of the Roman market.<sup>19</sup>

The *Periplus Maris Erythraei*, generally considered to have been written in the first century AD, speaks about sea voyages from the Egyptian Red Sea harbours to Africa, India and southern Arabia to obtain various products of great

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- 14 Pierre Tallet, Ayn Sukhna and Wadi el-Jarf: Two newly discovered pharaonic harbours on the Suez Gulf, *British Museum Studies in Ancient Egypt and Sudan* 18 (2012): 147–168.
- 15 Kathryn Bard and Rodolfo Fattovich, *Harbor of the Pharaohs to the Land of Punt: Archaeological Investigation at Mersa/Wadi Gawasis Egypt, 2001–2005* (Napoli: Università degli Studi di Napoli “l’Orientale”, 2007).
- 16 Strabo, *Geography*, Translation by H. L. Jones (London: The Loeb Classical Library, 2001), 16.4.5. Pliny the Elder, *The Natural History*, Translated by John Bostock, et al. (Perseus Digital Library), 6.33 <http://www.perseus.tufts.edu/hopper/text?doc=Plin.+Nat.+6.33.168&fromdoc=Perseus%03Atext%03A1999.02.0137>.
- 17 Günther Hölbl, *A History of the Ptolemaic Empire* (London: Routledge, 2001), pp. 55–58.
- 18 David Peacock, “The Roman Period”, in *The Oxford History of Ancient Egypt*, ed. Ian Shaw (Oxford: Oxford University Press, 2002), pp. 432–433.
- 19 Gary K. Young, *Rome’s Eastern Trade: International Commerce and Imperial Policy: 31 BC–AD 305* (London: Routledge Young, 2001), pp. 38–79.

economic value to Roman Empire.<sup>20</sup> It implies that the Red Sea was heavily sailed during the Roman period and was part of a distinctive long distance maritime transport system.

The line of trade that went to the southern coasts of the Arabian Peninsula was involved in the trade of myrrh and frankincense in return for fabrics, metal, wine and grain.<sup>21</sup> The main harbours of trade that were visited were Muza (probably present Al-Mukha), Eudaimond Arabia (present Aden) and Kane some 200 nm east of Aden.<sup>22</sup>

With the emergence and spread of Islam in the seventh century, sailing the Red Sea took on a new dimension. The annual pilgrimage to Mecca as well as extensive commercial activities during the Islamic era resulted in the development of numerous anchorages and harbour particularly along the eastern coast of the Red Sea.<sup>23</sup>

Nevertheless, despite its wealthy history, the Red Sea remains one of the least investigated regions. The study and research of its maritime archaeological sites has been quite limited to date if compared to the Mediterranean for example. Most archaeological research projects in the Red Sea were carried out along its western shore and particularly in Egypt. Moreover, the majority of projects focused on investigating terrestrial maritime sites rather than underwater sites. Examples of archaeological projects carried out in terrestrial sites of maritime nature on the Red Sea coast include:

- The excavation of the Roman and Islamic harbour of Myos Hormos—Egypt.<sup>24</sup>
- The excavation of the Roman harbour of Berenike—Egypt.<sup>25</sup>
- The excavation of the Ancient Egyptian harbour at Wadi Gawasis—Egypt.<sup>26</sup>

20 Lionel Casson, *The Periplus Maris Erythraei* (Princeton: Princeton University Press, 1989), pp. 13–15.

21 Young, *Rome's Eastern Trade*, pp. 34–35.

22 Casson, *The Periplus*, pp. 45–47, 63–67.

23 Gerald R. Tibbetts, “Arab Navigation in the Red Sea”, *The Geographical Journal*, 127.3 (1961): 322–334; Dionisius A. Agius, *Classic Ships of Islam: From Mesopotamia to the Indian Ocean*, (Leiden: Brill, 2008), pp. 215–244.

24 David Peacock and Lucy Blue (eds.), *Myos Hormos—Quseir Al-Qadim: Roman and Islamic Ports on the Red Sea, Volume 1, Survey and Excavations 1999–2003*, (Oxford: Oxbow Books, 2006).

25 Steven Sidebotham, *Berenike and the Ancient Maritime Spice Route*, (California: University of California Press: 2011).

26 Bard and Fattovich, *Harbor of the Pharaohs*.

- The excavation of the Ancient Egyptian harbour and ship remains at Ayn Sukhna and Wadi el-Jarf—Egypt.<sup>27</sup>
- The investigation of the harbour of Adulis—Eritrea.<sup>28</sup>

On the other hand, the number of underwater archaeological sites that was discovered and investigated in the Red Sea is very limited. The main reason behind that is the lack of systematic archaeological surveys along the Red Sea coastline. Moreover, the environmental nature of the Red Sea also plays an important role in that respect. Warm waters and heavy biological growth negatively affects the preservation of shipwrecks and organic material.<sup>29</sup> Also the fact that at the edge of the coastal coral platform water depth often drops steeply, in many cases beyond safe diving limits, makes it quite difficult to discover shipwrecks using standard SCUBA air diving techniques. On the other hand, the abundance of coral heads and reefs represents an obstacle to the use of remote sensing equipment close to the shoreline. Therefore very few ancient shipwrecks were discovered to date in the Red Sea. Examples of shipwreck sites that were discovered in the Red Sea include:

- The 18th century shipwreck discovered near Sharm El Sheikh—Egypt.<sup>30</sup>
- The Sadana Island shipwreck—Egypt.<sup>31</sup>
- The remains of a Roman wreck discovered near Res Banas—Egypt.<sup>32</sup>
- The Black Assarca Island shipwreck—Eritrea.<sup>33</sup>

It is worth mentioning, however, that almost all shipwreck finds in the Red Sea were the result of accidental discoveries by sport divers rather than systematic archaeological surveys. Accordingly, the sites were subject to various degrees of looting before their investigation by archaeologists.

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27 Tallet, Ayn Sukhna.

28 David Peacock, Evan Peacock and Lucy Blue, *The Ancient Red Sea Port of Adulis, Eritrea Report of the Eritro-British Expedition, 2004–5* (Oxford: Oxbow Books, 2007).

29 Blue, *The Red Sea*.

30 Avner Raban, "The shipwreck off Sharm-el-Sheikh", *Archaeology*, 24.2 (1971): 146–155.

31 Cheryl Ward, "Chinese Porcelain for the Ottoman Court: Sadana Island, Egypt", in *Beneath the Seven Seas* (ed.) George Bass, (London, Thames & Hudson: 2005), pp. 186–191.

32 <http://www.divetheworld.com/Diving/Shipwrecks/redseawreck/index.htm>.

33 Blue, *The Red Sea*.

### 14.3 Maritime Archaeology in Saudi Arabia

With more than 1500 km of coastline, hundreds of islands and natural anchorages, and a long history of maritime activities, there is no doubt that the shores of Saudi Arabia have great potential for maritime and underwater archaeological exploration and research. The nature of the Saudi western coastline with its numerous bays and natural harbours would have been heavily used by ancient vessels travelling along the Red Sea throughout ages.<sup>34</sup> Moreover, it is evident that harbours of the western coast of the Arabian Peninsula were actively involved in Indian Ocean trade and that relations were lively between both sides of the Red Sea.<sup>35</sup> Hence, over the past three decades several coastal town and potential harbours along the Saudi Red Sea coast, some of which are associated with sites mentioned in ancient texts, were investigated by historians and archaeologists.<sup>36</sup>

One of the important Nabatean-Roman harbours on the Saudi Red Sea coast, often mentioned by ancient historians, is *Leuke Kome* which was a port of trade and a customs point. The present location of *Leuke Kome* was believed to be



FIGURE 14.2  
*Sherds of monochrome glazed, blue-and-white Chinese porcelain found at the Island of Um-COsaila.*  
 PHOTOGRAPH BY THE AUTHOR.

- 34 William Facey, "The Red Sea: The Wind Regime and the Allocation of Ports", in *Trade and Travel in the Red Sea Region: Proceedings of Red Sea Project 1*, (eds.) Paul Lunde & Alexandra Porter (Oxford: Archaeopress, 2004), pp. 7–17.
- 35 Ali Ibrahim Al-Ghabban, Béatrice André-Salvini, Françoise Demange, Carine Juvin and Marianne Cotty, *Roads of Arabia: Archaeology and History of the Kingdom of Saudi Arabia*, (Paris, Musée du Louvre, 2010), pp. 407–408.
- 36 Ralph K. Pedersen, "A Preliminary Report on a Coastal and Underwater Survey in the Area of Jeddah, Saudi Arabia", *American Journal of Archaeology*, Vol. 119.1 (2015): 125–136.

in the vicinity of the site of 'Aynunah on the north of the Saudi Red Sea coast.<sup>37</sup> Never the less recent studies suggest that *Leuke Kome* it located at the Saudi harbour of Al-Wajh, just opposite to the Egyptian harbour of Myos Hormos.<sup>38</sup> Hence, a comprehensive archaeological investigation of those sites is yet to be carried out. It is worth motioning, however, that during a recent visit to the Island of Um-'Osaila, c.10km south of 'Aynunah, the author noticed few sherds of eighteenth century monochrome glazed, blue-and-white Chinese porcelain similar to that which was found on the 18th century shipwreck of Sadana Island near Safaga in Egypt.<sup>39</sup>

A thorough investigation of the site could reveal new evidence on the role those anchorages and harbours played in eastern trade in different time periods.

Numerous other harbours and anchorages flourished along the Saudi coast from late antiquity throughout the medieval period. For example, the harbour of Yanbu, c. 270km south of Al-Wajh, developed under the Ayyubid rule and then under the Mamluks until it became the second largest commercial harbour in northern Arabia after Jeddah and the main harbour receiving the pilgrims of Egypt and the Levant.<sup>40</sup> Another key harbour in this area was Al-Jar c. 70 km south of Yanbu. Since the early Islamic period, it was known for receiving food and supplies coming from Egypt, Yemen and Africa and heading for Al-Madina (c. 140 km to the east). Hence, the harbour flourished until it was overshadowed by Yanbu during the Ayyubid period.<sup>41</sup>

The significance of Jeddah as a major commercial harbour and the maritime gate to the holy city of Mecca needs no emphases. It was established as the port of Mecca in reign the Caliph Uthman ibn 'Affan (576–656) to replace the harbour of Al-Sho'iba (c. 50km south of Jeddah). In addition to its seasonal role during the Hajj period, receiving ships carrying pilgrims as well as other cargoes, Jeddah also functioned as an entrepôt of eastern trade between India/Yemen and Egypt. Nevertheless, the entry to Jeddah was often described as difficult due to the presence of coral reefs and shallows which required skilful seamanship and detailed knowledge of the region.<sup>42</sup>

37 Steven E. Sidebotham, *Roman Economic Policy in the Erythra Thalassa: 30 B.C.–A.D. 217*, (Leiden: Brill, 1986), pp. 124–126.

38 Dario Nappo, "On the location of Leuke Kome", *Journal of Roman Archeology*, 23 (2010): 335–348.

39 Cheryl Ward, "Shipwrecked porcelain in the Red Sea", *Oriental Art* 47.2 (2001) 66–69.

40 Moḥamed Al-Ḥārthy, "Al Thoghūr Al-Baḥariyyah Al-Ḥejāzziyyah", MA Thesis, Um Al-Qurā University, 1422h, pp. 94–108.

41 Al-Ḥārthy *ibid.*

42 Facey, "*The Red Sea*".

To the south of Jeddah lies the ancient harbour of Al-Sho'iba, which preceded Jeddah as the harbour of Mecca. In fact, the characteristics of Al-Sho'iba make it safer and more suitable as a harbour than Jeddah. The fact that it is clear of coastal coral reefs and the water is deep close to the shore, enable large ships to safely anchor close to the shoreline; however, it was replaced with Jeddah due to its proximity and easy access to Mecca. Nevertheless, Al-Sho'iba is known for its association with the event of renovating Al-Ka'ba (probably in 605 AD) using timber from a Byzantine ship that was wrecked near the site.<sup>43</sup> Also it is believed that the migration of the early Muslims from Mecca to East Africa c. 615 AD was from the harbour of Al-Sho'iba.

Due to the significance of this stretch of the Saudi coastline, an underwater archaeological survey was initiated in 2012 by Philipps-Universität Marburg in collaboration with the Saudi Commission for Tourism and Antiquities.<sup>44</sup> The survey targeted potential sites in the area from Al-Sho'iba northwards until Rabigh to the north of Jeddah, a distance of c. 200km. The goal of the project was to make preliminary discoveries that could demonstrate the archaeological potentials of the area and hence establish the logistics for a long-term investigation. Accordingly, the survey looked at potential harbour sites along the coast and examined possible underwater areas which are believed more likely to represent a hazard to ancient ships. The underwater survey was carried out



FIGURE 14.3 *Part of the salvaged material from the Ottoman shipwreck at Al-Qunfudah.*  
<http://www.abriyadh.com/718887>

43 Al-Hārthy, "Al Thoghūr" pp. 115–118.

44 <https://wedigboats.wordpress.com/2013/05/29/the-marburg-nautical-archaeology-survey-in-saudi-arabia-a-synopsis-of-the-march-2012-season/>

using SCUBA diving techniques and relied on visual recognition of archaeological material. The survey resulted in the discovery of a coral built jetty and several submerged amphora sherds which were dated to the third and fourth centuries AD. However, it is worth mentioning that local divers often mention a number of shipwrecks that are known to exist in that area, and are subject to looting. Nevertheless, these wrecks are yet to be located and investigated by researchers.<sup>45</sup>

Another shipwreck discovery was made during carrying out harbour works in Al-Qunfudha, c. 330km south of Jeddah.

In 2011 the remains of an early twentieth century 56m long Ottoman warship were discovered and partially salvaged by the local authorities. It is believed that the ship was among several others sunk by the Italian forces in 1906.<sup>46</sup> However, the discovery has not been scientifically published and the site has not been comprehensively surveyed.

Perhaps one of the most well documented projects carried along the Saudi coastline was the investigation of the submerged prehistoric landscape in the vicinity of the Farasan Islands in south-western Saudi Arabia, using acoustic survey, coring and diving. The multinational project, which was led by the University of York in collaboration with several other institutions, aimed to assess the local environmental and climatic conditions that may have existed at lower sea level, and study prehistoric archaeological material in the region. It also involved carrying out systematic dating and sampling of the coastal Holocene shell mounds on the Farasan Islands as means for interpreting traces of coastal settlement associated with palaeoshorelines.<sup>47</sup> The research conducted at the Farasan Islands is part of a more comprehensive project concerned with the palaeoarchaeology of the southern Red Sea coast.<sup>48</sup>

These examples of maritime archaeological sites and projects in Saudi Arabia only demonstrate the great potentials of that field of research along the coastline of the Kingdom. All historical and ancient anchorages and harbours could be subject to thorough terrestrial and underwater archaeological investigation. However, it is not only through the discovery and investigation of sites

45 Pedersen, "A Preliminary Report".

46 [http://www.aleqt.com/2011/10/02/article\\_585757.html](http://www.aleqt.com/2011/10/02/article_585757.html). <http://archive.aawsat.com/details.asp?section=43&article=643061&issueno=11996#.VMuFnFWSySo>.

47 Geoff N. Bailey, Nic C. Flemming, Geoffrey C. P. King, Kurt Lambeck, Garry Momber, Lawrence J. Moran, Abdullah Al-Sharekh and Claudio Vita-Finzi, "Coastlines, Submerged Landscapes, and Human Evolution: The Red Sea Basin and the Farasan Islands", *The Journal of Island and Coastal Archaeology*, vol. 2.2 (2007) pp. 127–160.

48 <http://www.antiquity.ac.uk/projgall/bailey334/>

that maritime archaeology can advance in Saudi Arabia. In fact, capacity building for local archaeologists and researches through education and training is a must for the development of maritime archaeological research.

#### 14.4 Education in Maritime Archaeology

Maritime and Underwater Archaeology, as scientific disciplines, have been offered in academic institutions around the world for several decades. The general aim for education and training programmes in maritime and underwater archaeology is to provide students and trainees with the tools necessary for them to pursue professional or academic careers, which would contribute not only to the discovery and study of sites, but also to their protection and preservation.

According to the UNESCO, education and training at different levels in maritime and underwater archaeology are offered in more than thirty countries around the world including just one Arab country, Egypt.<sup>49</sup> So, despite the numerous efforts of archaeologists and historians to study aspects of maritime history, archaeology and ethnography of the Arab region,<sup>50</sup> only one country has local education and training programmes in those disciplines. As a result, most Arab countries rely, almost entirely, for the study of their maritime and underwater cultural heritage on the limited work carried out by foreign archaeological missions. In other words, the Arab contribution to the exploration, preservation and presentation of the region's maritime and underwater cultural heritage is quite limited, if not insignificant in some cases.

The Kingdom of Saudi Arabia, in that respect, has a great potential to become a focal point for education and training in maritime archaeology in the Gulf region. The Kingdom has the necessary resources to develop and run different levels of capacity building programmes in that field. It has more than 20 universities and academic institutions including a number departments dedicated to the study of history, archaeology and related disciplines. Moreover, Kind Abdulaziz University in particular contains two faculties dedicated to Marine Science and Maritime Studies which can contribute effectively

49 UNESCO, Courses in Underwater Archaeology at Universities and other Institution (UNESCO: Paris, 2011) <http://unesdoc.unesco.org/images/0015/001514/151452e.pdf>.

50 Anwar 'Abdel Al-'Aleem, *Al-Melāḥa wa 'oluww Al-beḥār 'end Al-'Aārab*, 'Alam Al-Ma'refa 13, (Kuwait: National Council for Culture and Arts, 1979). Agius, *Classic Ships of Islam*. Hassan S. Sheḥāb, *Al-Marakeb Al-'Arabiyyah*, (Kuwait: Kuwait Foundation for Scientific Development, 1987).

to capacity building in maritime archaeology.<sup>51</sup> Moreover, King Abdullah University of Science and Technology (KAUST) is particularly interested in coastal and marine researches and it has the necessary facilities required to conduct underwater archaeological research, yet archaeology as such, is out of its research scope.

Saudi universities should consider developing specialised courses at undergraduate and postgraduate levels in underwater archaeology, coastal zone management and related disciplines. Moreover, the Saudi Commission for Tourism and Antiquities (SCTA), which is the official local authority responsible for conducting and supervising archaeological research in the Kingdom, has vast experience in surveying and excavating terrestrial archaeological sites. Hence, extending its activities to coastal and underwater sites would be a major step forward in developing maritime archaeology in the Kingdom. This would require training groups of Saudi archaeologists in methods and techniques of underwater archaeology, a step which was initiated by the Philipps-Universität Marburg archaeological mission. The work of foreign archaeological missions represents a great opportunity for training Saudi archaeologists and researches on the techniques of coastal and underwater archaeology; an opportunity which should be seized by the local authorities. Nevertheless, the knowledge behind the practice will remain unappreciated unless aspects of maritime archaeology are taught within organised courses. Moreover, education and training programmes in maritime and underwater archaeology in Saudi Arabia should be designed with different target groups in mind:

#### 14.4.1 *Students of Archaeology and Relevant Disciplines*

This would be done by introducing courses on maritime archaeology within the undergraduate syllabi of archaeology and relevant disciplines (history, tourism, heritage management, etc.) taught at Saudi universities. Moreover, developing a graduate degree in maritime archaeology would play a key role in providing graduates from different backgrounds with a basic understanding of contemporary theory and practice in aspects of maritime and underwater archaeology and its role in the wider context of cultures. It is an international trend in many universities and institutions around the world that graduate courses in maritime archaeology are open for graduates from different backgrounds, and not necessarily from archaeology or related disciplines. The reason behind that is mostly related to the interdisciplinary nature of maritime and underwater archaeology. As a result, graduates in different disciplines (i.e. engineering, oceanography, marine science, law, etc.) are encouraged to study maritime archaeology.

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51 [http://www.kau.edu.sa/home\\_ENGLISH.aspx](http://www.kau.edu.sa/home_ENGLISH.aspx)

Applying the same principles in Saudi Arabia would contribute to the development of generations of Saudi researchers and professionals capable of carrying out research as well as managing and preserving their country's maritime and underwater cultural heritage. Courses taught within such programmes should discuss the Arab maritime heritage in the Red Sea and the Arabian Gulf, Arab ships and seamanship, underwater cultural heritage management, surveys and excavations methodology and techniques, etc.

#### 14.4.2 *Professionals Working in the Field of Cultural Heritage*

In addition to university courses, training programmes in underwater archaeology should be offered to professionals dealing with cultural heritage in Saudi Arabia to promote and develop their professional skills. Those include antiquities inspectors, museum curators, coastguards, navy officers, etc.

It is worth mentioning, however, that during the past years, a number of such courses have been organised and delivered under the patronage of the UNESCO in different regions around the world including Latin America, Africa and the Asia Pacific region.<sup>52</sup> Having similar courses dedicated to the Gulf region in general would play a key role in developing that discipline in that part of the world and would be the basis for getting local professionals involved in the exploration and preservation of underwater cultural heritage.

#### 14.4.3 *The SUCBA Diving Community*

Saudi Arabia has an active diving community which includes both local and expatriate sports divers. Several diving centres operating along its coastline offer diving courses, daily and live aboard diving trips. On the other hand, it is well known that most underwater archaeological sites worldwide are accidentally discovered by divers.<sup>53</sup> On the other hand, sports divers are also often involved in the looting and damaging underwater archaeological sites. Hence, providing Saudi divers with basic understanding of the value and nature of underwater cultural heritage will have great impact on the preservation of such sites let alone on their discovery. Sport divers accidentally coming across an underwater archaeological site should be able to know how to mark the

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52 <http://www.unescobkk.org/culture/uch/capacity-building/courses/> <https://en.unesco.org/news/second-foundation-course-underwater-archaeology-caribbean-take-place-st-eustatius>. [http://www.unesco.org/new/en/member-states/single-view/news/unesco\\_training\\_course\\_on\\_underwater\\_cultural\\_heritage\\_for\\_the\\_african\\_region\\_to\\_take\\_place\\_in\\_turkey\\_from\\_13\\_23\\_may\\_2015/#.VMkprVWSySo](http://www.unesco.org/new/en/member-states/single-view/news/unesco_training_course_on_underwater_cultural_heritage_for_the_african_region_to_take_place_in_turkey_from_13_23_may_2015/#.VMkprVWSySo)

53 Bass (ed.), *Beneath the Seven Seas*. Keith Muckelroy, *Archeology Under Water: An Atlas of the World's Submerged Sites*, (New York: McGraw-Hill, 1980).

location of their find, how to report it to the relevant authorities and how to play an active role in the protection of the site. Such skills are taught within courses offered to sports divers by a number of NGOs around the worlds, such as the Nautical Archaeology Society<sup>54</sup> and the World Underwater Federation.<sup>55</sup> Hence, it would be of a great benefit to underwater cultural heritage in Saudi Arabia if the local authorities represented by the Saudi Arabian Maritime Sports Federation, could arrange for such courses to be offered to sports divers, starting with dive guides, diving instructors and tour leaders involved in the diving business. This would play an important role in the exploration and preservation of maritime and underwater archaeological resources, and would help illustrate the educational and recreational benefits of non-intrusive access to underwater archaeological sites in the Kingdom.

#### 14.4.4 *Museum Education*

“A museum is the people’s university”; a statement which has often been quoted in publications for several decades.<sup>56</sup> Hence, museums worldwide are playing an important role in public awareness of heritage related issues and in the public contribution to the preservation of cultural heritage. This is done through museum educational programmes directed towards different age groups and particularly towards school children.<sup>57</sup> Museums and heritage centres in Saudi Arabia should adopt various educational programmes which aim to raise awareness and stimulate the interest of school children in their country’s culture and heritage. In that respect, it is worth mentioning that museum education programmes do not necessary have to take place in museums, but it could be done through innovative outreach schemes which aim to provide programmes, resources, and opportunities for students of different ages at their own schools. Such programmes would be of a great value to relate what is taught at schools with the country’s cultural heritage, and help students understand and appreciate cultural heritage and the ways to preserve it for the future. Such education programmes could include, hands on collections of real artefacts, presentations, activity books, workshops, competitions, storytelling, documentaries, etc.<sup>58</sup> It could also provide students with informa-

54 <http://www.nauticalarchaeologysociety.org/>

55 <http://www.cmas.org/>

56 <http://www.newspapers.com/newspage/24651556/>

57 Stella Chryssoulaki, Alexandra Bounia and Despina Andriopoulou, *Museum Education and New Media*, *ICOM Education 23* (Committee for Education and Cultural Action, Ministry of Education & Religious Affairs, Culture & Sports: 2012).

58 George E. Hein, *Learning in the Museum*, (New York, Routledge: 1998).

tion about archaeological excavation and research in an interesting and amusing way, which could be done as part of extra-curricular activities. This kind of education is very effective when it comes to teaching students about the dangers of looting and the importance of preserving cultural material. Obviously, museum education programmes for school children require full coordination between the antiquities and the education authorities so that museum professional and school teachers work together within a comprehensive strategy.

#### 14.5 Conclusion

Based on the above discussion, it becomes evident that a national strategy for carrying out comprehensive and systematic archaeological surveys of the Saudi waters and shoreline is a necessity. It would aim for discovering, assessing and mapping maritime and underwater archaeological sites along the Kingdom's coast. This could be done utilising the expertise and resources of both local and international institutions. Such a project would also represent a great opportunity for training local archaeologists and researchers on different aspects of that new field of research. On the other hand capacity building by providing education and training in maritime archaeology at different levels would contribute not only to the discovery of new sites, but also to their preservation and protection. It would also be reflected on public awareness of, and interest in, the countries maritime heritage.

Furthermore, Saudi Arabia could become the leading country in maritime archaeology in the Gulf Region and a focal point for research and education in that respect. It is essential however to combine the efforts of all stakeholders in order to introduce the Saudi archaeological community to the new field of maritime archaeology.