

# Documentation and mapping of underwater cultural landscapes case study: Ancient Lycia - Kaş

**Sinem GÜREVİN<sup>1</sup>, Yasin Çağatay SEÇKİN<sup>2</sup>**

<sup>1</sup> snmgurevin@gmail.com • Department of Landscape Architecture, Faculty of Architecture, Istanbul Technical University, Istanbul, Turkey

<sup>2</sup> seckincagatay@gmail.com • Department of Landscape Architecture, Faculty of Architecture, Istanbul Technical University, Istanbul, Turkey

*Received: May 2019 • Final Acceptance: July 2019*

## Abstract

The scope of documentation and mapping of underwater landscapes consists of different disciplines, such as, landscape architecture, archeology, history, geometrics and underwater research. Kaş has witnessed ancient civilizations and has countless remains that are waiting to be found and understood. The main objective of this research is to reveal these ancient remains and make them a part of the academic literature. When they have become acknowledged and mapped, a guideline could be provided for preserving and managing our heritages. Since prehistoric times, humans have been using Earth's water for transportation, nutrition, and trade. Due to the relationship between human and water, people have overcome far distances and cultures become able to interact with each other. Since water covers the seventy-one percent of the world, excluding underwater while studying cultural landscapes, would be ignoring an extensive piece of the whole. Kaş was selected as research area because its culture and interaction with sea dates backs to prehistoric times. The chosen sites include the dive sites located in the central area and nearby islands. First, the history, geography and the importance of Kaş were researched. Preliminary survey maps formed with reference to underwater topography, currents, prevailing winds, and refuge locations for vessels. Thereafter, carefully planned dives were followed through. Within the extent of research, the findings and artifacts are documented and marked with their exact coordinates on an underwater map. Finally, the research is moved forward with studying protection and managing underwater cultural landscapes and conclusions have been made for Kaş.



doi: 10.5505/ituja.2019.37097

## Keywords

Cultural landscapes, Underwater, Mapping, Submerged.

## 1. Introduction

This study assesses Kaş in underwater cultural landscape structure. The aim of this research has been, how to research and reveal the submerged underwater cultural landscape areas and to detect underwater cultural heritages, mapping and documenting them with a scientific approach, so that they can be admitted to academic literature and become a part of our culture. When these cultural landscape areas are recognized, the preservation of our heritages would be possible. This documentation can also be used as the substructure for a management plan of underwater cultural landscapes.

A detailed literature study was conducted within the scope of the research. During the literature review process, the historical records and the existing data banks about the underwater existence of the region were examined, the people in the region were consulted, the aerial photographs and satellite images were examined, and the underwater examinations with the water surface scans were carried out. Then, underwater research started. Since the researcher has had many previous dives in the area over a decade, pilot areas were appropriately selected. Certain remains were preferred in the pilot areas with convenience sampling method and documented with numerous dives. All obtained data were evaluated and compiled as a whole and mapped.

As a result, the present problems have been identified and solutions have been generated. In addition, the conservation and management of cultural landscape areas and its relationship with tourism were evaluated.

Cultural landscape, which is one of the main subjects of the landscape architecture discipline, determines the range of this study. Landscape is a complex concept that can contain many different meanings according to time, culture and place. Landscape architecture can include disciplines ranging from geography and tourism to archeology and anthropology. The

distance between cultural resources and nature can only be eliminated by cultural landscape approach. Recognizing the relationship between natural resources such as archeology, geography and history, which constitute cultural resources, helps to understand the complex socio-economic system.

Cultural heritages are non-renewable cultural resources and shed light on the cultural landscape with the anthropogenic and natural changes of the past. The cultural heritages are effective in the development of the quality and identity of urban and rural areas, as well as being a source for tourism.

The cultural landscapes that cover the seas are formed by the combination of the concept of archeology with sea and land (Westerdahl, 1992). The ships and the crews of the ships shape the culture of the seas. Archeology continues on both water and land. The only thing that distinguishes them is the diving mask.

Numerous archaeological remains have been found in the terrestrial areas within the boundaries of Kaş and researches are continuing for more. The history of the region, the interaction of people with the sea and even the fact that some ancient cities in the region are under the water, show that a comprehensive underwater research should be added to the researches on land. The ruins and shipwrecks that divers and fishermen have come across over the years confirm that the region has important submerged cultural heritages. However, these values continue to be eroded by storms and currents in time. They are also exposed to theft in the last hundred years due to the development of diving techniques and diving technologies. In order to be able to protect the underwater cultural heritage in the Kaş District of Lycia and to be able to add those to our cultural values, it is very important to present the artifacts found in this area with the information of the remains on a map. Such a study was never done before in Turkey and reveals the original value of this research.

The fact that the cultural heritages of the research area underwater are shown on the map with its exact coordinates and current status will help us to protect and recognize our cultural values. Due to the scope of the research, it will be possible to support the ongoing studies of the cultures that have been found so far and to reach new information.

This research aims to reveal the historical landscape, development and change of the region. As the findings indicated on the map with their historical information, it helps to understand the whole of the research area in chronological order.

## 2. Underwater cultural landscape

Nowadays, because of climate change, scientists often mention the increasing effect of rising temperatures on sea level. When the world was not exposed to human influence the difference in the sea level, was occurred much more slowly by allowing the adaptation of living things. But now, it is happening at a rapid pace because of human effect. Since our world, which is about 4.5 billion years old, has been constantly changing, it is seen that the sea level increases between 40 and 130 meters together with the change from region to region. Given that people throughout history usually live at the edge of the water, the original traces of many civilizations to altered to underwater today.

The historical traces that were buried in the waters, not only give information about the first civilizations and the origins of humanity, but also give information about the climate change and its effects. Marshall Islands that are located near the Equator in the Pacific Ocean stands as a textbook example for climate change effect. Marshallese have adapted to their environment, building a culture on more than 1,200 islands spread across 750,000 square miles of ocean. But today, due to changing climate conditions, tropical cyclones, damaged reefs and fisheries, worsening drought and rising sea level compose a

treat to their lives. People of Marshall Islands are forced to relocate or to construct a new island or raising an existing one. Soon, their culture of thousand years will become a submerged cultural heritage, and their future generations will need to study underwater remains to learn about their culture. As this example shows, with the remains found underwater, people learn about their interaction with environment, lifestyles and cultures.

Starting from this point of view, the concept of underwater cultural landscape was fully developed by Christer Westerdhal in 1992. In this concept, Westerdahl tried to understand underwater archeology more in a holistic way with his studies. "The maritime cultural landscape signifies human utilization (economy) of maritime space by boat, settlement, fishing, hunting, shipping, and its attendant subcultures, such as pilotage, lighthouse and seamark maintenance" (Westerdahl, 1992:5-6). Historical monuments on land benefit the understanding of the remains encountered in the seas and vice versa. As a result, more accurate information about history and cultures is reached with the evaluation of all the remains together.

"The archaeological concept combining sea and land would be the maritime cultural landscape. It means that the starting point for the subject of maritime archaeology is maritime culture" (Westerdal, 1998).

The cultural landscape is the result of the transformation of the natural environment through time, by people living in certain regions for centuries. In underwater cultural landscapes, submerged traces of humans and civilizations are examined. In some cases, these may be objects from wrecks or wrecks themselves; in some cases there may even be flooded cities with the rise of water.

There are a lot of cultural traces underwater. These are mostly shipwrecks that sunk because of natural, technical or accident-related reasons. These ruins, which have unique value, not

only give information about the period - civilization they belong to, but also display how that culture spread. More studies need to be done about these cultural traces found underwater. Researches on this issue have begun to progress and has not yet reached their potential.

Studying the past is a broad and comprehensive subject, and traces of the past can be found on land or underwater. These traces must have a historical, architectural or scientific value in order for the remains to be important cultural assets. When the found remains can be included in a socio-cultural order based on a discipline, they become ruins with cultural value.

In its most basic form, it would be correct to define the remains that carry the historical, scientific or architectural traces of human culture as underwater cultural sources. Within this definition, from the smallest to the largest of the sea vehicles and submerged air vehicles and their cargos, underwater cities and structures, and even human remains may be underwater cultural resource.

However, it should be noted that it would be wrong to think that man-made objects with archaeological and cultural values are the only traces of humans under the water. Today, thanks to technological developments, there is countless structural hardware under the water. Underwater materials such as cables and pipelines are not part of the underwater cultural resources.

All cultural resources, which are used to define the identities of societies, are regarded as a value belonging to humanity. Cultural heritage is a factor that expresses the shared histories of individuals in a society and strengthens the sense of unity among them. It ensures the continuity of the experiences and traditions that people have accumulated throughout history. Underwater cultural heritages cover all traces of the sea floor as a result of human influence. Thus, the underwater cultural landscape also includes underwater cultural heritage.

The underwater cultural heritage has been formed by the human-marine relationship that has been going on for thousands of years, they have left untouched because the technology was not existed to identify and reach these legacies. In this day and age, with the recent technical developments, human beings are able to examine the underwater environment and its content.

Although the relations of societies and individuals with the sea are as old as the history of mankind, the development of marine societies has gained momentum especially since the 1500s. Underwater cultural heritages have spread throughout the world for hundreds of years such as ships, cargo, aircrafts and so on. There are also many sunken ancient cities, such as the ruins of Alexandria in Egypt. Throughout the history of the world, natural disasters caused thousands of ships sinking into the sea and have buried many cities in the coastal areas. Many of these ships, structures and other cultural elements cannot be seen from the water surface, and these remains have been safely preserved under lakes - seas - oceans and have survived to the present day.

As mentioned before, cultural landscapes are the areas created by human influence, people have left their traces in these regions and shaped them. As the return of this relationship, the traces left by people from the cultures of the past periods not only helps people understand the past, but also the culture of life.

First of all, depending on the geography they are located in, they help the personal development of the individuals who are interested in cultural landscapes and offer them new activities. Consider an area with archaeological heritage found in an area that is not accessible by car, this region directs people who want to reach it to nature sports and this orientation brings with them the desire to respect and protect the nature. The best example of this situation can be considered in Lycia, the main study area of this study.

The ancient Lycia Region is one of

the ten best hiking trails in the world. Along the Lycia Way, which is 535 kilometers long, there are many beautiful natural landscapes accompanied by ancient ruins. As you can reach all the ancient cities of Lycia in this way, many remains from the later periods can be seen along the way. However, while walking a route such as the Lycia Way, it is almost impossible not to admire and respect nature, and this communication with nature makes people who respect and protect the environment and the past.

It is also possible to talk about the same fascination and respect in the underwater cultural landscape that the relationship underwater has gone one step further. Because, with the help of improving technologies, now people are able to experience underwater that is out of our comfort zone. This kind of involvements can cause enormous changes in the lives of individuals.

People who want to observe the underwater cultural landscapes first hand will have to do start with diving training and learn to be safe under the water. Understanding diving as using only certain technical materials to go underwater and return would be making an enormous mistake. Diving is also being a part of the marine culture. Most divers are respectful to the sea and underwater life; in addition they do their best to protect this environment.

Obviously, although there are not many people to disrupt the underwater, there are still some individuals who harm under the sea and cultural heritage. The most important of these damages is the stealing of the remains, because of their material value or only to get a souvenir from underwater. People also give the greatest harm to the sea creatures and the remains by touching them or polluting the sea. However, many divers are acting as a community to protect the underwater and organizing activities for protection and cleaning.

When the issue of pollution is cited, it will not be right to stay only at the individual point, it is a known fact that

private establishments and parties have polluted the nature and the seas to a great extent. In addition to this situation, the underwater cultural landscape areas have been significantly damaged due to the increasing construction and insufficient infrastructure. Although the waters of Kaş, which owes much of its beauty to its cleanliness, are not like before, these faults are still relatively reversible.

Finally, boats and fishermen should be mentioned. The anchors of the boats damage the underwater cultural heritage more if the locations of heritage sites are not known. Anchors on a fish nest or remains give irreversible damage. In the case of fishermen, fishing nets and cages are also added to this situation. These nets and cages damage both the remains and all living things and their habitat without discrimination.

### **3. Methodology for the underwater cultural landscape research**

A theoretical resource research was conducted as first step in the methodology. With the help of the resources, a proper way was found to do an underwater documentation. Also main components of the theory were reviewed, such as maritime cultural landscape theory or underwater archeology.

The methodology followed in the research after determining the main case area, was a general survey. Many sources were studied thoroughly and the important data collected. After the literature research with books, maps and aerial photographs, many interviews were conducted with local people including fishermen and divers. The main questions that were asked during with interviews were:

- Are there any remains or wrecks in the area other than the ones that are known with dive spots?
- What are changes that you have observed in the long term?
- What are changes that you have observed in the short term?
- What do you think about the cause of these changes?
- What do you think can be done in order to improve Kaş and underwater?

After all the theory studies, field study was the subsequent step. The archaeological research techniques alone are not enough in researching the cultural heritage that is placed under the water. Although the path followed in underwater archaeological researches contains points that overlap with a normal archeology excavation, it also includes different disciplines due to its environment. The underwater cultural landscape studies occur with the disciplines of archeology, underwater research and diving progress together. Before being able to breath under water, there was not exact way to search beyond the land to the sea. The developments in the research and diving techniques have helped the improvements for exploration and investigation of underwater cultural heritage.

The field study part of the research was started with surface sea survey. Since it was not possible to have all requirements, the water surface scanning was carried out just to generate an example. Subsequently, underwater research was initiated by diving. In this process, the sonar devices have helped to determine the areas that have traces for remains. Many dives were executed and the ruin samples were photographed and measured. Afterwards, the data obtained were examined, documented, evaluated and mapped in case areas.

#### 4. Case study

Kaş district of Antalya, located in ancient Lycia, is designated as the case study area in the research of the mapping of the underwater cultural landscape. There are many reasons why the Kaş was examined, but the most important one is incontrovertibly underwater cultural values of the area.

Many cultures and civilizations lived in Kaş but according to the oldest archaeological remains the first ancient city in the area was Habesos. This area was later called Antiphellos. The reason for this name is the ancient city of Phellos, located above the district of Kaş. Antiphellos is one of the important port cities in the history of Lycia. During the Anatolian campaigns of Alexander the Great, he ruled this region, but after the death of Alexander,

the region experienced a transition between the Seleucids and the Ptolemies. In all historical sources, this city stands out in the Roman Period and refers to the bishopric center in the Byzantine period. In the Byzantine period, area was exposed to Arab raids but later became part of the Anatolian Seljuk's. After passing to the Anatolian Seljuk's, the region in which the center of Kaş began to be called with the name Andifli and the name still stands for the central district.

According to the information given by the Kaş District Governorate and the Municipality of Kaş, after the collapse of the Anatolian Seljuk, the Tekeoğulları took over the region and joined the territories of the Ottoman Empire during the time of Yıldırım Beyazıt.

Antiphellos was a small port settlement established in the 4th century B.C. It was the port of Phellos. Antiphellos came forefront with the decline of Phellos in the Hellenistic Period. This situation also continued in the Roman period. Thanks to the cedar tree and sponge trade, it had become a rich port city, which could be self-sufficient in time.

The fortification walls, which built against Meis Island by the shoreline, can be seen in part today since they have become part of today's buildings. There is an ancient theater in the western part of the city, which overlooks the sea, it has been well preserved so far and it has been restored in recent years. The ancient theater is seen in Figure 1.

The King's Tomb with lions, which can be considered as symbol of Kaş is



Figure 1. Ancient Theater, Kaş (Gürevin,2016).

located at the end of the Long Bazaar (Uzun Çarşı) Street. This tomb is an elevated sarcophagus consisting of three sections. The lower grave chamber, called Hyposorium, is about one and a half meters high, and the ground is collapsed. It has a flat base with a height of 80 centimeters. At the top of the sarcophagus, there is a stone cover with a Lycia type pointed arch, carved from a separate rock. There are two lion heads standing on their paws on both sides of the cover. The tomb takes its name from these lions. The short side of the cover is divided into four plates. Hyposorium carries a detailed inscription of Lycia tomb on whom the right of burial would be given, but this article cannot be read.

The most prominent ruins in Kaş are located in the western part of the present settlement. There are not any existing roads to Kaş in the Limanağzı Region; this location can only be reached by walking or small boats. On the slopes of the Sebeda Castle, the tombs side by side face the sea.

The rock tombs can be seen along the north and west slopes of city. There is also a cistern very close to the central port of the district. This cistern is dating back to the 5th century B.C was used to store water in the beginning but then used for wine, olive oil and vegetables. The cistern was made by carving a single block of stone in size of 12x6

meters and the ceiling rests on seven carved columns. It is the only cistern remaining from a series of cisterns in the area extending up to the ancient theater. Various amphorae, plates and vessels were found during the excavations in the cistern.

There is also a Hellenistic temple in the central part of Kaş. Overlooking the ancient harbor, this temple is the only Antiphellos temple that has survived. The only seen part is the lower boundary of the walls built using cut stone. The temple, which it belongs not yet known, was repaired during the Roman period and the excavations started in 2012 by Antalya Museum Management.

There is a dor type tomb called Akdam that was built in 4th century B.C., it is place to the northeast of the Ancient Theater. The structure was constructed by cutting natural rock. It has a height of 3.5 meters and has 24 female figures dancing by holding hands. On Hastane Street, there is a temple built using regular cut stone. It was determined that the foundation stones of the building were from the Roman Period. (<http://www.antalyakulturturizm.gov.tr>).

In Figure 2 Antiphellos' settlement plan can be seen. When we examine this plan, the northern necropolis is seen on the slopes of the hill, which is today known, as the Sleeping Giant.



**Figure 2.** Antiphellos City Plan (Texier, 1862).

In the Far East, the eastern necropolis was found, while the settlement of Antiphellos moved from the center of Kaş to the Çukurbağ Peninsula. The acropolis and monumental tombs are located south of the northern necropolis. The church is located to the east of the city center. While the theater overlooks the sea in the west, there are two bathhouses in the south by the sea.

These are all foremost cultural heritages of Kaş that are placed on land.

As mentioned in the methodology, many interviews were done through the research process. One of these interviews was specifically enlightening. It was with Mehmet Aytuğ, who was a former Lycia Way guide and dive master. He told that there were many more wrecks and remains, but those areas are now prohibited for diving. He also told that some invasive species, which have come from Red Sea, are becoming a great threat to local species. He said that the underwater of Kaş used to be full of life but it is getting worse every year. He thinks that, the change in the people profile also changes Kaş in every aspect. He believes that people are needed more knowledge and caring to get better.

This kind of interviews helped us to

evaluate the differences in the last two decades more distinctively and proved that a preservation and management plan is a necessity.

After all these studies, underwater surveys had begun. At this stage, it was a necessity to investigate the factors causing underwater heritages. While the majority of the underwater ruins were caused by the sinking of the sea vessels, the remaining part was formed by the submerged structures and the cities.

Seafarers have experienced the biggest fears of storms since ancient times. However, storms in the formation of residues are not the only factor, however topography, current and wind in general should be examined. In addition, in recent years people with different reason underwater in the form of conscious remains. These factors are examined in layers below.

Kaş's topography has hard rocky cliffs that are an obstacle development and transportation. The rocky structure of the land continues underwater. All of the dive sites in the study area are composed of rocky areas, sometimes they are the extension of the coasts, but sometimes they are reefs formed by the rocks in the sandy underwater regions.

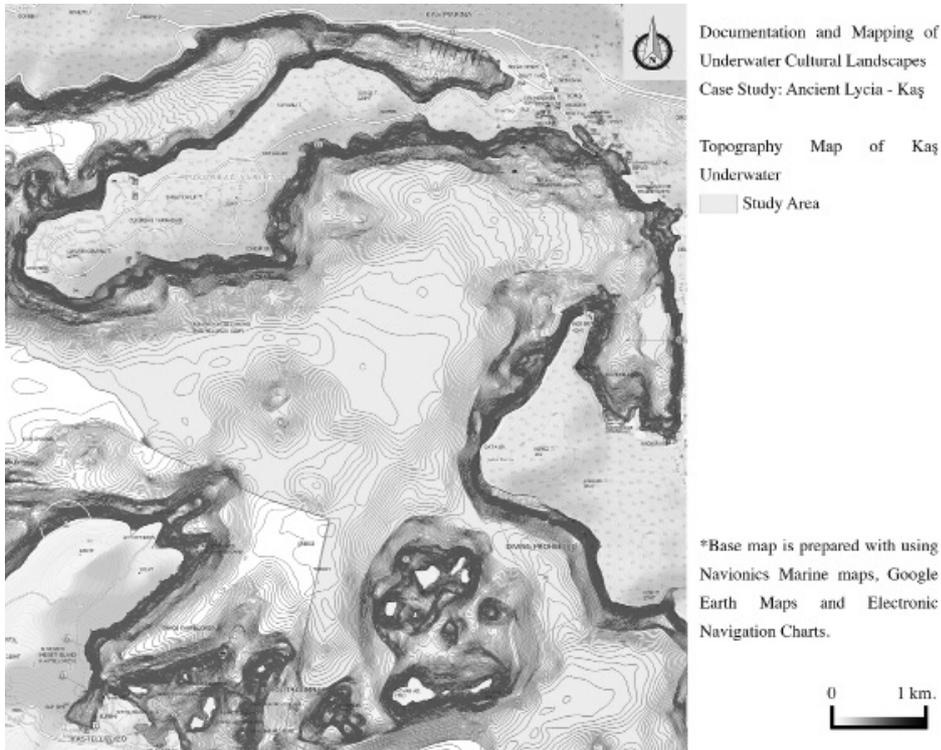


Figure 3. Topography Map of Kaş Underwater (Gürevin, 2018).

The coasts of Kaş, which are geographically called Dalmatian type, have karstic structure. The relationship between the sea and the land is highly indented - this is why there are many islands and peninsula in the region. As a result of this coastal type, the continental shelf in the Kas region is narrow but the sea depth is extended.

When the topography of the seaside of Kaş is examined, it is seen that there are many different sizes of islands as well as hills rising underwater. Although it is not known whether these rock formations were above or below the water surface in the past, the combination of harsh weather conditions and topography still pose a threat to the watercrafts. To summarize it is accurate to notify that topography has constantly influenced the culture of the region since its first settlement.

Underwater topography map of the research area can be examined with Figure 3. Base of the maps, which are formed in this research, are prepared with using Navionics Marine maps, Google Earth Maps and Electronic Navigation Charts.

Wind, thermohaline and wave currents are usually seen in the research area. Sudden changes in the topogra-

phy affect the streams in the waters of Kaş.

These currents change their intensity depending on the storm periods. In addition, İnce Burun, located in the Limanağzı Region, constitutes bursts in the rocky cliffs between Heybeli Islands and Pina Island and in the cliffs to the southwest of Kovan Island.

Another factor that affects the sea is wind. The winds from the west, due to the geographic features of Kaş, are frequently seen, including northwest and southwest. Likewise, the winds from the east also has severe disturbs.

It is not possible to ignore the effect of winds gusting within the research area on the formation of underwater remains in the region. Even today, it is seen that the extreme winds gusting during the storm periods, the waves in the sea damage the coastal roads and attached boats.

When the physical conditions distressing, it is justifiably necessary to question how these situations can be solved. When these conditions of Kaş are examined, it is obvious that sea vessels need to find shelter at different points for different prevailing winds. The most important factor in shelter points will be that when the vehicles

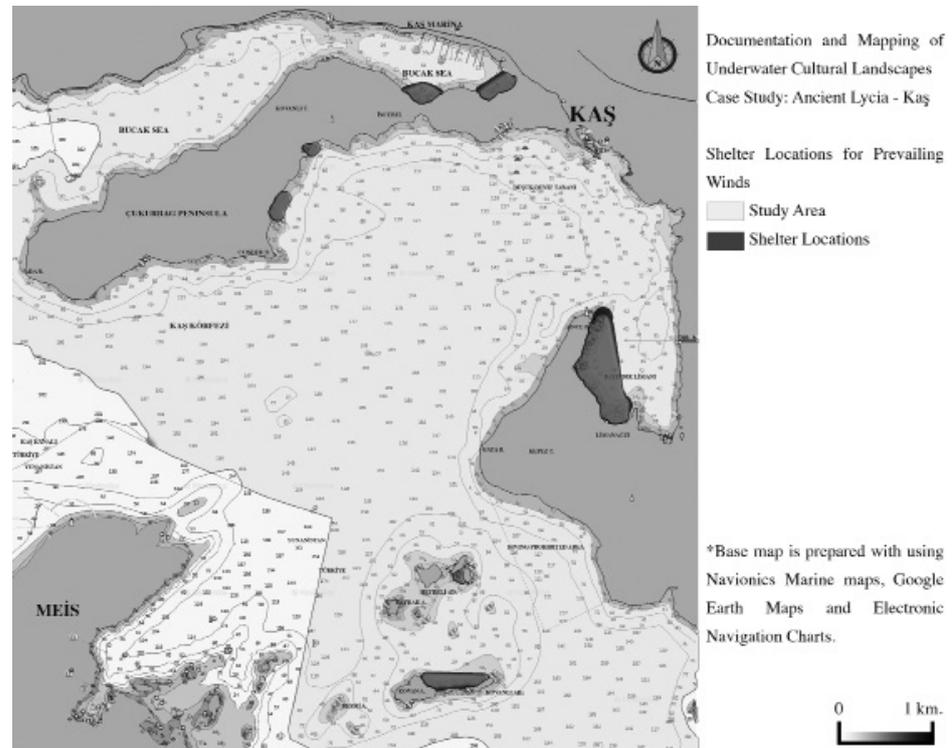


Figure 4. Shelter locations for prevailing winds (Gürevin & Yiğitler, 2018).

have any problems in the region where they take shelter, it will not throw to the shore but to the open water without any human interaction. For example, a sail must take the head of the boat to the shore and take the wind from the

head while anchoring in a heavy storm or anchoring in a buoy. Thus, when the anchor or buoy becomes ineffective due to environmental conditions, the boat can drift towards the cliffs on the shoreline and become damaged or

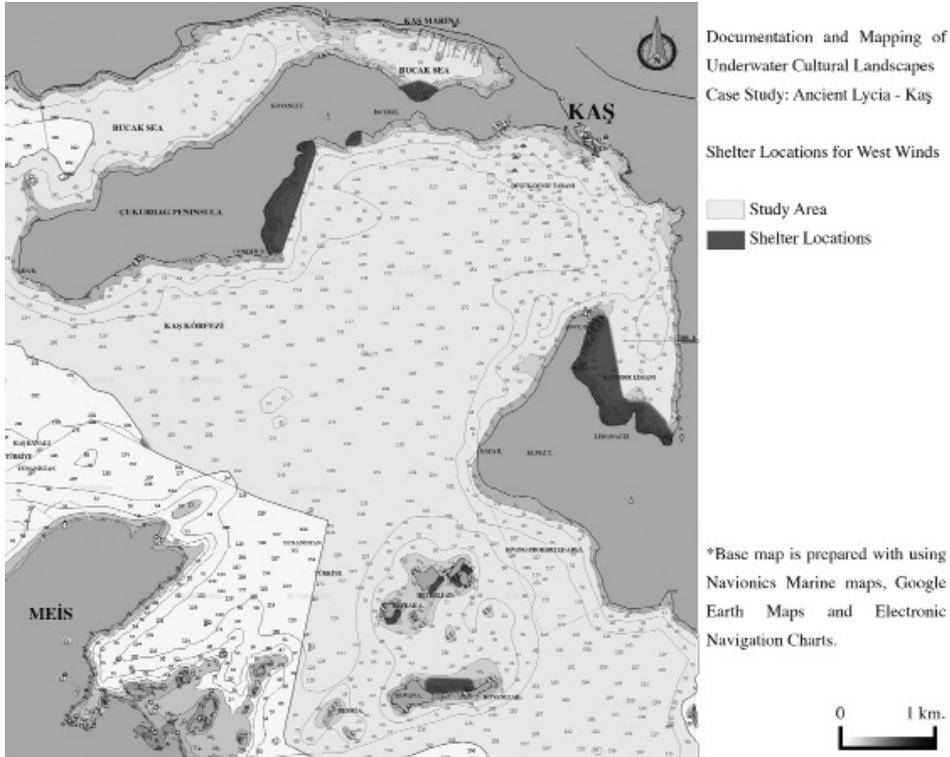


Figure 5. Shelter locations for west winds (Gürevin & Yiğitler, 2018).

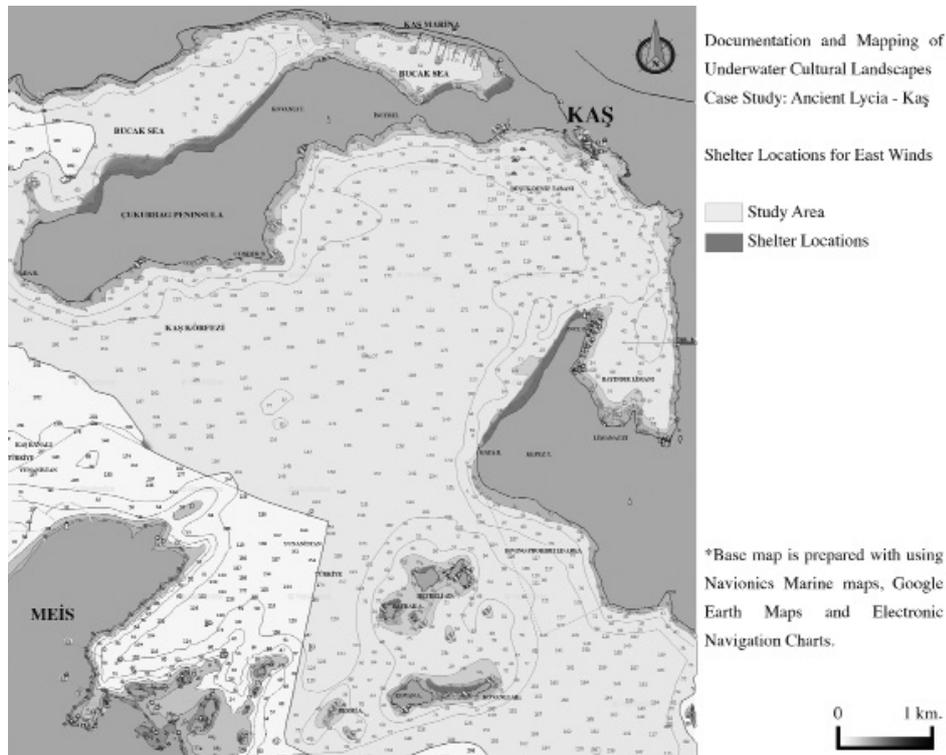


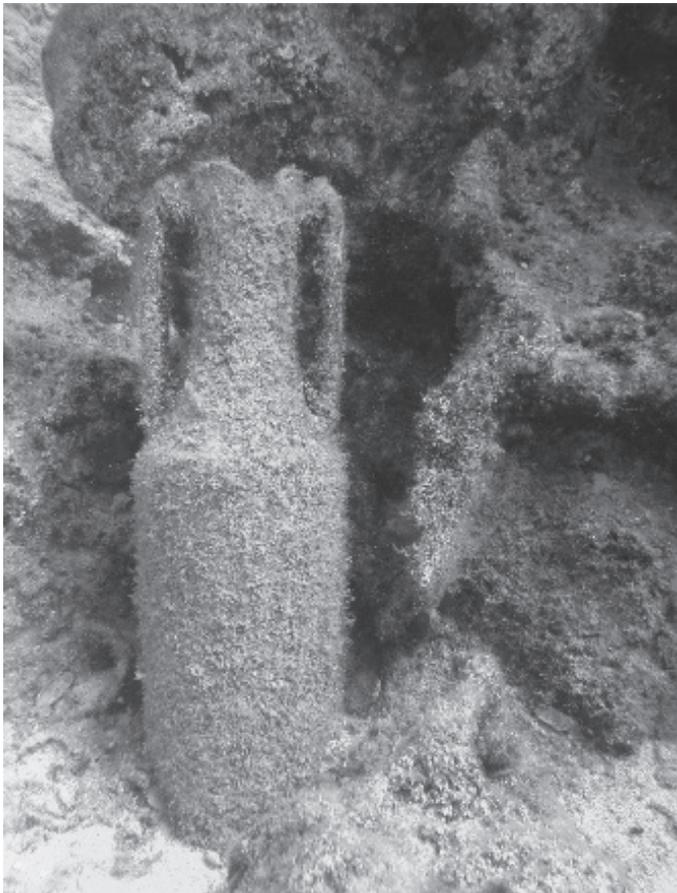
Figure 6. Shelter locations for east winds (Gürevin & Yiğitler, 2018).

even sinking into the open sea.

Refuge points in the research area for different weather conditions were marked on the maps and the positive and negative aspects of the refuge in these areas were examined. Figure 4 displays shelter locations for every prevailing wind. Figure 5 shows shelter locations for west winds and Figure 6 shows shelter locations for east winds.



*Figure 7. Amphora at Neptune Dive Point (Gürevin, 2018).*



*Figure 8. Amphora at Neptune Dive Point (Gürevin, 2018).*

Even in the course of researching cultural landscapes in dry land is challenging, an underwater survey can be faced with much more difficulties.

We needed to find a boat with sonar scanners, which would allow us to scan from the surface first. We managed to overcome this challenge by accompanying our different friends when they went to the research areas. Another challenge was to establish the right team. We always took support from Altay Yiğitler on the surface, he is both a technical dive instructor and captain, and since he has been living and working in Kaş for a long time, he helped us with everything, never denied sharing his knowledge and time. On the subject of the diving partner, we had to find volunteers for this study, who can cover the cost of their dives, spend their holidays underwater for our research, and most importantly be a reliable, good diver. Of course, as it can be understood from this point of view, it was not possible to have a great deal of time to do documentation diving. We dived during the dive season and found the remains of the ruins, and then waited for the appropriate time to dive for documenting the remains with a dive partner.

In this process, it will not be correct to no mention that there were minor difficulties such as failing underwater cameras, prolonged dive times and missing technical equipment. All of these difficulties sometimes caused to repeat our dives. These times sometimes coincided with very hot days or very heavy storms, but the work was completed thanks to the sacrifice of everyone.

Every single factor, data and underwater maps were examined primarily in the selection of pilot areas. With the help of preliminary survey maps, the focus points are relieved. Since all dives were performed in diving points in Kaş, attention was paid to the presence of traces from different cultures in selected regions. As a result of these researches, four diving points were selected as pilot regions.

These regions are;

- Lighthouse diving point, Limanagzi - Ince Burun
- Kovanlı dive site, Kovan Island,

### Five Islands

- Canyon dive site, Kovan Island, Five Islands

- Neptune diving point is the Çukurbağ Peninsula.

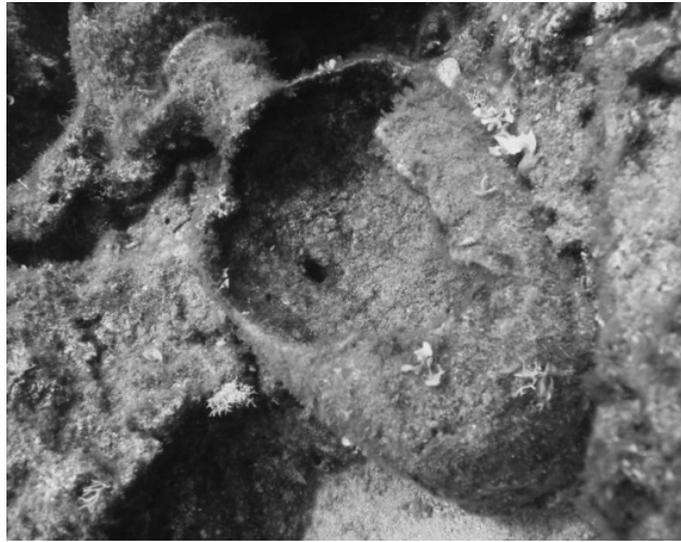
A brief documentation of one of the pilot sites could be about Neptune diving point. Neptune diving point is located in Çondur Cape of the Çukurbağ Peninsula. There is a rocky formation at the top of this dive site, which starts at 8 meters deep. These rocky reef stages continue down to 45 meters in progress. In the southern part of the reef there are many amphorae belonging to the ancient periods.

As a dive partner was not available in the study of the remains at Neptune region, it was completed by accompanying recreational group dives in the region. For this reason, six dives were carried out for approximately two months to document the remains and to obtain the coordinates.

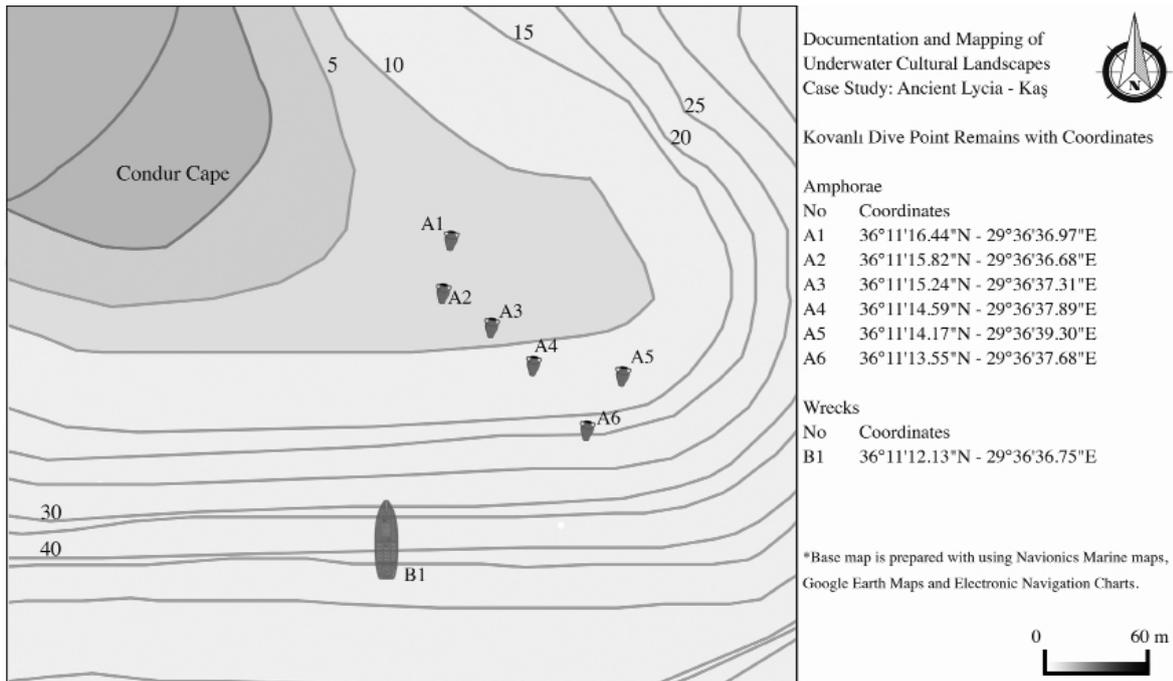
This dive site also has an artificial reef. In 2011, a 29-meter long TCSG-119 coded coast guard boat was sunk to create a new reef to enhance the populations of fauna and flora at the dive site. This shipwreck was left 21 meters depth at first, but due to strong storms it had got loosen and slide to the band of 35 - 40 meters.

The first Neptune dive was conducted on 11 June 2018. On 11 June, the

weather was partly cloudy and about 27 °C. The wind started to get more intense when the dive started; it was blowing at about 15 kilometers per hour. The boat was reached the location around 10:45 and we began to get ready for the dive. We started diving at 11:05 by jumping from the boat. In this dive, the main goal was to determine which remains should be documented. The dive lasted for 42 minutes and the water temperature was 21°C on the surface and 19°C in the maximum depth. The maximum depth of dive was 30.8 meters and our average depth was 16.2 meters.



**Figure 9.** Amphora at Neptune Dive Point (Gürevin, 2018).



**Figure 10.** Neptune Dive Point Remains with their coordinates (Gürevin, 2018).

After emptying the air in our bouncy control device and going under the water, we started to move south, towards southeast. We encountered the first amphora at 7 meter without getting too far from the boat. After taking note of the approximate location of this amphora, we continued towards the reef in our southeast. We met the second amphora at 19 meters. The reef starts at that point. There were many amphorae in the reef. Some of them were assembled together and fragmented. We encountered a large number of amphorae between 20 and 30 meters. A total of six points were marked to document with the subsequent dives. As we encountered an inverse current on the way back, we moved towards the boat at a depth of about 12-13 meters. When we approached the boat, we came to the surface after finishing our safety stop for 3 minutes at 5 meters. Afterwards, we accompanied 5 more dives and completed the documentation of the remains.

Figures 7 – 8 – 9 are photographs of the remains documented during the dives. Figure 10 shows the coordinates for the remains of Neptune diving point on the map.

## 5. Conclusion

This research was an application of a cultural landscape analysis to the submerged cultural landscapes in Kaş. The results have shown that the underwater cultural landscapes have extremely high potential for educating and moving us forward.

For the formation of social identity, the awareness of the past is undeniable. Social emotions, together with society, have gained meaning, and the feeling of continuity of society is valuable for each of the individuals who make up the society. The general conclusion, derived from the sources examined within the many researches, reveal that feeling happiness and stability in their lives creates happier societies.

Cultural values are parts of a whole that constitute the past of society. For this reason, cultural resources which constitute the social memory and which are based on the general culture of the people living in the region are very important. However, as men-

tioned above, these sources can be located on the land as well as under the waters.

The sources of cultural values have been destroyed and emerged throughout history. While the destruction in the wars was one of the reasons for the destruction of the culture, the economic problems, the different political views and the perspective of the religions to the cultures are also important in this regard. Destroying traces of ancient cultures has made it easier for new cultures to dominate.

While all these obstacles exist, it is very difficult to maintain cultural resources, especially if they are underwater as in this research. Because these areas are more easily exposed to theft and looting, and those located near the coasts are also threatened by urbanization.

Even today, underwater cultural resources cannot be adequately examined or preserved by academics, or by a different institution. Sometimes personal interests are prioritized, but most of the times there is no support for research.

In addition, the underwater cultural resources contribute to life. A shipwreck becomes a nest of many fish and provides an ecosystem development around it. Thus, it increases the population by creating a living environment for creatures underwater. At this point the issue that needs to be considered is whether the shipwreck has a polluting effect or not. The wrecks from the previous periods with cultural value, since they did not use energy resources like today, have very few pollutant effects. In order to increase the underwater life, objects that have been intentionally submerged in order to create a reef are first cleaned and their fuel is discharged, thus minimizing the polluting effects.

The access to cultural values in the underwater world made them vulnerable to false threats as well as to help us understand history, cultures, and civilizations. For this reason, preservation of underwater cultural heritage means protection of our historical values.

The subject of conservation of underwater cultural landscapes includes many variables. Because while keeping

the values under water, some of the threats occurring on the land are decreasing but many different problems can arise.

The remains of cultural landscapes underwater are not only threatened by people but also by nature. While these areas are generally less known, they may be more easily exposed to theft and looting in accordance with the intentions of those who know it. The reason for this is that it cannot be safely protected a cultural area under the sea as it is on land. Nevertheless, with the effect of the sea and storms, some remains are condemned to disintegrate or disappear.

Beside these mentioned problems, the idea of on-site protection will add value to the region where the cultural heritage is located and will cause the water in the region to be taken under general protection and increase the tourism. It should also be noted that some remains begin to deteriorate as soon as they come into contact with air.

The most useful measure to protect the underwater cultural landscape areas is to inform the local people in the region and to ensure that their values are appreciated. Although, there is nothing can be done against the dangers of nature.

As seen from the explanations, the present conditions raise a question about whether the remains that are part of the underwater cultural landscape areas should be protected in site or exhibited in a way that they can be brought to the surface suitably and be accessible to more people. The most sensible thing to follow in this case is to implement the process of decision-making in the underwater cultural heritage.

We offer on site protection for our research area. Because, the natural structure and the remains constitute a cultural landscape area as a whole.

The pilot research zone, Kaş, has an improved protection program from the World Wildlife Foundation to protect living species. Although this program is not prepared to protect the underwater cultural landscapes, the buoys created within the program help to prevent the boats anchoring to the places where the remains are located.

However, a more extensive preservation and management plan should be developed to protect the underwater cultural landscape areas and tourism in the region should not be ignored while this plan is being developed.

Whether landscape areas are designed or naturally exist, in order to maintain its continuity, it requires natural resources such as air, water and soil. It is in an indestructible connection within the surrounding natural systems. This connection is the main feature that distinguishes cultural landscapes from other cultural heritages. This is the reason why almost every other cultural heritage cannot be moved. The relationship of cultural landscapes has with environment, sometimes needs it to be repaired but always requires to be managed. Management and planning of cultural landscapes can be achieved by working together of many different disciplines.

Strategies can be developed for the management of cultural landscape areas with the cooperation of landscape architects, historians, archaeological landscape experts, forestry, design, architecture, engineering, cultural geography, wildlife, seed – pollen experts, landscape maintenance and management experts. Management of each cultural landscape requires a different method, a different strategy. Because the environment, climate, geographic and historical characteristics may vary. While some cultural landscapes may be a small region in the middle of a metropolis, some may be underwater, others can be a rural area spread over thousands of acres.

The management of cultural landscapes begins with the identification of the region, which is regarded as a cultural landscape area. After that, the most important step is to prevent the factors that may have caused damage. In order to ensure continuity of the site, a good management plan should be prepared. These areas generally require ongoing management in the field, and as the outset of this management, a landscape architect, who specializes in landscape protection, is required.

If we want to explain the management of cultural landscapes further, the subject can be started with the in-

terpretation of the cultural values in the landscape. The interpretation of landscape areas includes ideas, meanings, concepts and dynamics that compose the space. For example, while the relic is important for an archaeologist, the aesthetics and beauty of the area is important for a historian, for an artist or for a traveler. Cultural landscapes are a whole and a reflection of the cultures that create them. For this reason, all the components that generate them are important and must be protected. So we have to identify, document and map them to constitute a start point.

As a result of all these researches that have been gone through, it is obvious that the culture in Kaş is shaped and developed by topography. It is significant to reveal and understand all the traces of these previous cultures, in order to reveal the values of the region and to share with everyone. To understand existing culture, our setting and ourselves in which we live, we need to understand the growth and history of our culture with its causes and consequences.

### References

- Babits, L. E., Van Tilburg, H. (1998). *The Plenum Series in Underwater Archaeology – Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*. New York: Springer Press.
- Bowens, A. (2009). *Underwater Archaeology The NAS Guide to Principles and Practice*, The Nautical Archaeology Society. UK: Blackwell Publishing.
- Connor, D.W., Hiscock, K. (1996). Data collection methods (with Appendices 5 - 10). In: *Marine Nature Conservation Review: rationale and methods*, ed. by K. Hiscock, 51-65, 126- 158. Peterborough: Joint Nature Conservation Committee. (Coasts and seas of the United Kingdom. MNCR series.)
- Çevik, N. (2015). *Likya Kitabı*. İstanbul: Suna – İnan Kıraç Akdeniz Medeniyetleri Araştırma Enstitüsü.
- Çevik, N. (2012). *Taşların İzinde Likya*. İstanbul: Arkeoloji ve Sanat Yayınları.
- Ford, B. (2011). *When the Land Meets the Sea – The Archaeology of Maritime Landscapes*. New York: Springer LLC.
- Musard, O., Le Du-Blayo, L., Francour, P., Beurier, J., Feunteun, E., Tallasinos, L. (2014). *Underwater Seascapes From geographical to ecological perspectives*. New York: Springer LLC.
- Pulak, C. (2006). *Uluburun Batığı, 3000 Yıl Önce Dünya*. İstanbul: Ticareti Sergi Kataloğu, 57 vdd.
- Texier, C. (1849), *Description de l'Asie Mineure*. Paris: Didot frères.
- Texier, C. (1862) *Asie mineure description géographique, historique et archeologique des provinces et des villes de la Chersonnèse d'Asie*. Livre 1. Didot. Paris: Didot frères.
- Thomsen, A. (2002). A. Thomsen, *Die lykische Dynastensiedlung auf dem Avşar Tepesi*. Bonn: Habelt.
- Westerdahl, C., 1992, *The Maritime Cultural Landscape*, *The International Journal of Nautical Archaeology*, 21(1):5-14.
- Westerdahl, C., 1998, 'The Maritime Cultural Landscape On the concept of the traditional zones of transport geography'. *Sozialgeschichte der Schifffahrt*.
- UNESCO (2001). *Convention on the Protection of the Underwater Cultural Heritage*. Authentic text of the Convention by the General Conference of the United Nations Educational, Scientific and Cultural Organization during its thirty-first session, Paris. (<https://unesdoc.unesco.org/ark:/48223/pf0000126065.locale=en>)
- Antalya Municipality (<https://antalya.ktb.gov.tr/TR-68035/gezilecek-yerler.html>)
- National Geographic (<https://www.nationalgeographic.com/environment/2018/11/rising-seas-force-marshall-islands-relocate-elevate-artificial-islands/>)
- Turkish Naval Forces Office of Navigation, Hydrography and Oceanography ([http://www.shodb.gov.tr/shodb\\_esas/index.php/tr/urunler/haritalar/elektronik-seyir-haritalari](http://www.shodb.gov.tr/shodb_esas/index.php/tr/urunler/haritalar/elektronik-seyir-haritalari))
- Navionics (<https://webapp.navionics.com/?lang=en#boat-ing@6&key=oad%60F%7BkbzD>)
- Google Earth (<https://www.google.com/earth>)