

Tourism Toolkit

for European Maritime
and Underwater Cultural Heritage



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with contribution from the TIDE Partnership & Interreg Atlantic Area

Final Version

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Foreword

The TIDE Toolkit is a fundamental output of the Atlantic Network for Developing Historical Maritime Tourism project funded by the Interreg Atlantic Area programme. The toolkit has been developed to address the programme's priority of 'Enhancing biodiversity and the natural and cultural assets' with the main objective of enhancing natural and cultural assets to stimulate economic development.

The TIDE project focuses on the sustainable development of onshore and underwater sites of historical interest on the Atlantic Area coastline. The project outputs will aid organisations & practitioners in the Atlantic region tourism development sector to develop new tourism products.

With a focus on maritime history in the Atlantic regions, the sites can relate to shipwrecks, ports, battles, trade, forts, migrations, castles and invasions. A key aspect of the project is creation of new networked tourism products based on rediscovering historical connections between regions on the Atlantic. Digitised content and digital transformation technologies such as AR & VR will be used to enhance and enrich the visitor experiences that are developed.

The core TIDE partnership is composed of a transnational collective of public and private entities including local & regional governments, universities, tourism specialists and digital technology specialists from regions within the Atlantic Area. These regions include various locations in Ireland, Spain, France, Madeira, United Kingdom and Canada. The cooperative is working together to develop and market new types of multi-regional historical maritime niche tourist packages and visitor attractions for the Atlantic by sharing cultural assets across regions, supported by new technologies and transnational collaboration tools.

Together, the partnership aims to a) develop the collaborative digital tools to enable regions to create niche transnational maritime tourism packages based on sharing historical assets; b) create a new breed of maritime cultural visitor attraction by using virtual reality and archaeology techniques to connect to real historical sites; and c) amplify the impact and sustainability of TIDE by stimulating the use of the approach and tools across the Atlantic area.

The experience and expertise of this group have ensured that the Toolkit is rooted in practical realities and the requirements of the end users. Historical assets and sites face many challenges to their integrity which, unless addressed can erode the outstanding value for which they were considered significant.

Those responsible for development and promotion of historical assets are charged with the complex task of anticipating and dealing with these challenges, most often in an environment of limited financial and organizational capacity. Under these circumstances, it is incumbent upon them to invest their efforts in the most critical areas, ensuring that available resources are applied to their maximum effectiveness, whilst protecting the assets they wish to share.

The TIDE Toolkit contains a collection of good practices, knowledge, methods & tools to aid historical site identification and tourism product development. It contains a series of exercises designed to help those responsible for development and promotion of these sites to piece together the elements of a comprehensive management framework. This framework outlines a strategy that ranges from initial site identification, to creation of a narrative, environmental preservation, and enhancement using digital transformation technologies to enrich visitor experiences. It is structured as targeted chapters offering examples and guidelines, followed by exploratory exercises. Each possesses an emphasis on user-friendliness, flexibility, and adaptability to local realities.

The application of these tools can aid tourism and heritage practitioners to effectively deal with some of their major development and management challenges. Our aim is to help those involved in the management of historical assets to improve their capacities and reach their management objectives for the benefit of the global community.

Juanita Blue
Project Manager
ERNACT EEIG



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1

Introduction

The sea leaves an indelible mark on the societies that settle on its shores. Throughout history, it has powerfully conditioned the way of life of different generations of human beings, forming specific cultures that can be distinguished from those inland in many ways: food, craftsmanship, communication, transport, commerce, legends, traditions, gods, festivities, constructions, resources... These maritime cultures have in turn generated a valuable cultural heritage, dynamic, versatile, diverse and very rich, both tangible and intangible, either on their coasts or in their waters. This heritage is fundamental to understand these societies, strengthen their identity and preserve their memory.



Maritime and underwater cultural heritage is not only an important receptacle of history, memory and identity; in addition, it has proven to be a valuable educational and tourist resource through its adequate and respectful promotion.

This guide aims to help identify this type of heritage, its potential, needs and threats, providing tools both for the evaluation of these aspects and for the responsible and sustainable activation of this heritage. The focus will be on the maritime heritage shared by the Atlantic regions and, in particular heritage related to the Napoleonic Era, the Spanish Armada, the World Wars and the migrations of the 19th century.

Although maritime heritage is inclusive of underwater cultural heritage, the latter has its own unique characteristics that make it special and its details are often lesser known. In this guide we have dedicated some points exclusively to this type of heritage, however if these are outside your field of interest, these sections may be bypassed without affecting the whole reading, and continued enjoyment of this toolkit.

We must note that each case is different, so this guide aims to be approximate, offering tools and ideas to face the different challenges that cultural maritime heritage can pose to us; but it will be necessary to adapt them to the conditions of each case. Thus, each party must assess and decide which ideas and tools best fit their goals and resources. Furthermore, the suggestions made here should be complemented by an appropriate strategic plan depending on the direction and objectives of each case. The comprehensive transformation of a heritage asset into a tourist resource is not

the objective of this guide, which focuses on the phases of identifying and assessing the potential of maritime heritage resources.

Each chapter concludes with an exercise designed to help you process, order and apply what you have learned previously. Exercises can be completed as you read, or at any other time. These exercises are designed to help you get started, but also to make you aware of the information gaps that may need to be filled. So do not worry if you do not have all the answers. Conversely, this can help you identify areas where you need more information and point you in the direction of some stakeholders that may be useful in your project. In some cases, it will be enough to carry out surveys, while other solutions could be workshops or meetings, relying on expert advice or working with partners who can complement your work.



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2

Let's get blue! A few concepts before we start

Did you know that nearly 70% of the planet is covered by water?



2.1. Blue economy

The sea and the coastlines are driving forces of the economy. The European Union defines the blue economy as those economic sectors directly or indirectly related to the ocean. These sectors are interdependent: they are based on common competences and shared infrastructures and depend on other sectors using the sea sustainably (COM(2012)494).¹

The EU considers that the blue economy has proportionally greater growth potential than the overall economy (in terms of added value and employment) and that it is very likely to double its percentage by 2030, as long as those activities linked to the blue economy do not jeopardize the health of our seas and oceans, damaging the resource on which this potential growth depends.

The Europe 2020 strategy is aimed at the economic recovery of the European Union (EU) following the recent economic and financial crisis, implementing a series of reforms to address the EU's economic and social structural weaknesses while at the same time, addressing long-term challenges such as globalization, pressure on resources or the aging population, striving for smart, sustainable and inclusive growth.

The growth of the blue economy opens up new avenues in this regard. As the maritime dimension of the Europe 2020 strategy, the blue economy “can contribute to the union's international competitiveness, to its efficiency in the use of resources, the creation of jobs and the birth of new sources of growth, while safeguarding biodiversity,

protecting the marine environment and thus preserving the services provided by marine and coastal ecosystems if they remain healthy and strong” (COM(2012)494)².

2.2. Blue growth

The European Union (EU) defines “blue growth” as “a long-term strategy to support sustainable growth in the marine and maritime sectors”, by recognizing “the importance of the seas and oceans as driving forces of the European economy due to their great potential for innovation and growth”. The European Commission adopted this strategy in 2012 in order to harness the potential of European oceans, seas and coasts for economic growth and job creation. Thus, it is the contribution of the Integrated Maritime Policy in achieving the objectives of the 2020 Strategy for smart, sustainable and inclusive growth, and which maintains the value of the European strategy for the Agenda for Sustainable Development of the EU by 2030. Moreover, the next decade has been named the Decade of Ocean Science for Sustainable Development (2021-2030).

According to EU estimates, the blue economy represents 5.4 million jobs and a gross added value of almost 500 billion euros per year.³

One of the most important sectors that are part of the blue economy and blue growth is that of coastal and maritime tourism.

1. <https://ec.europa.eu/transparency/regdoc/rep/1/2012/ES/1-2012-494-ES-F1-1.Pdf>

2. <https://ec.europa.eu/transparency/regdoc/rep/1/2012/ES/1-2012-494-ES-F1-1.Pdf>

3. ECORYS (2012). *Scenarios and drivers for sustainable growth from the oceans, seas and coasts*.



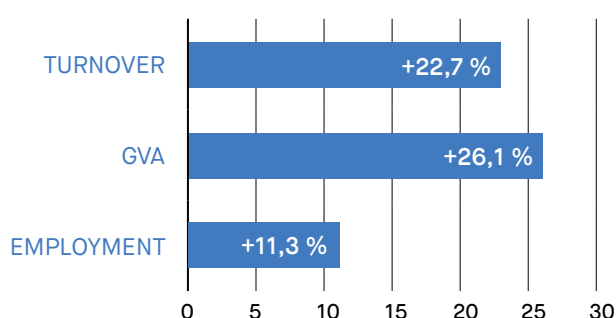
2.3. Coastal and maritime tourism: blue tourism

As part of the EU's blue growth strategy, the coastal and maritime tourism sector has been identified as an area of particular potential. **This sector accounts for one third of the economy linked to the sea and is the largest in terms of employment. In 2017 the blue economy generated 4 million jobs, of which 54% were in the tourism sector, with 36% of the GVA and 32% of the total profits generated by the blue economy.**⁴

Coastal and maritime tourism, also called Blue Tourism, is Europe's most important tourism subsector and sustainable growth in this sector can be especially important for young people, as 45% of workers in the tourism sector are between 16 and 35 years old.⁵

According to the UN World Tourism Organization (UNWTO⁶), international tourist arrivals are expected to increase by a total of 65% from 2010 to 2030, reaching 1.8 billion annual arrivals. Faster growth is expected in emerging and developing regions, and especially in coastal areas.

EU MARITIME AND COASTAL TOURISM 2009-2017



Finally, we must remember that sustainability and respect for oceans, seas and coasts is essential. On

the one hand, activities in seas and oceans directly or indirectly affect a large number of people: more than six hundred million people (around 10% of the world's population) live in coastal areas and 2.4 trillion (approximately 40% of the world's population) live 100 km from the coast and therefore depend on and are vulnerable to the quality, stability and accessibility of the ocean⁷. On the other hand, the maritime and coastal tourism sector depends directly on the conditions of the surrounding area and the quality of the water. Thus, tourism related to these environments must always be a respectful and sustainable tourism, paying attention to the possible impact on the natural and social environment, on natural resources and on local communities, seeking synergies and coexistence with the other sectors that make up the blue economy.

4. The EU Blue Economy Report, 2019.

5. Machado & Evans (2016). *Guide on EU funding for the tourism sector, 2014-2020*.

6. <https://www.unwto.org>

7. Tonazzini (2019). *Blue Tourism. The Transition Towards Sustainable Coastal and Maritime Tourism in World Marine Regions*.

3

Cultural tourism and maritime and underwater heritage



One of the clearest examples of the growing importance of cultural tourism is the exponential increase in research, work and projects that has occurred over recent years on this issue. There are already numerous experiences that show cultural tourism to be a powerful engine for sustainable development, especially in coastal regions.

MARITIME CULTURAL HERITAGE

This is a result of the relationship between human beings and the sea on a physical, cognitive and cultural level and can be of a tangible nature (a fortification, a shipwreck, a fishing hook) or intangible (skills or traditions).

UNDERWATER CULTURAL HERITAGE

Heritage that is fully or partially submerged underwater (whether it be seas, oceans, rivers or lakes).

Although today we tend to regard the sea as a frontier, throughout history it has been a powerful nexus of union between societies. A vehicle for diversity, the exchange of ideas, goods, customs and people and a fundamental axis for the development of different societies. A geopolitical scenario of vital importance in the unfolding of historical events and the main area for technological innovation, up until the space race. There are more and more studies, success stories and awareness of the potential of maritime heritage: underwater parks, land or underwater routes, the restoration of buildings of all kinds and their reintegration into local communities, the recovery of festivities, traditions, events commemorating historical events...

"The Vasa Museum in Stockholm receives more than 1 million visitors every year. These visitors spend an average of EUR 200 per day on hotels, meals and other expenses, bringing an estimated EUR 200 million increase in spending per year to Stockholm. In the UK, the Mary Rose Museum is rated as the top tourist attraction in Portsmouth, closely followed by HMS Victory and HMS Warrior museums ships, receiving over 300 hundred thousand visitors each year, whereas the SS Great Britain is the number one tourist destination in Bristol attracting over 173,500 visitors in 2013 and bringing in an income of £3.7m"

JON HENDERSON

Oceans without History? Marine Cultural Heritage and the Sustainable Development Agenda. Sustainability, 2019.



©Isla Grosa Project.



Archaeologist working. ©Isla Grosa Project.

Next, we will look at some of the main strengths and weaknesses of tourism in relation to the showcasing and dissemination of maritime heritage:

Cultural tourism:

- Stimulates people's interest for their own culture.
- Can help empower communities. Reinforces cultural identity and strengthens community links through a knowledge of their shared history and visitor recognition of some of their main distinctive features.⁸
- It can enhance, both in visitors and in the host area, traits such as a sensitivity for the care of the environment and heritage or tolerance and interest in cultural diversity, promoting opportunities for cultural exchange and promoting "comprehension and understanding among peoples".⁹
- Has great potential for development at local and regional levels.
- Can be an important ally in diversifying the tourism offer, providing "an added value or

8. Fuentes, M. del C. (2015): «Patrimonio y turismo cultural (Primera parte)», NEGRO, S. (Comp.): *Reflexiones en torno al patrimonio cultural del Perú*. Lima.

9. Toselli, C. (2006): «Algunas reflexiones sobre el turismo cultural», Pasos. *Revista de turismo y patrimonio cultural*, 4 (2).

differentiation in the already developed or mature tourist destinations"¹⁰ and breaking with the seasonality that characterizes the most widespread tourism model in coastal areas.

However, it is very important to remember that for cultural tourism to meet these expectations, it is necessary to provide certain conditions such as adequate planning, rigor in the interpretative elements, cooperation between the different agents involved, respect and protection of resources, etc. Otherwise, the results may be detrimental to visitors, the host community and heritage assets alike.

Be careful!

Without proper interpretation, planning and control, we run the risk of:

- Massification, degradation of the quality of services, degradation and destruction of heritage and natural resources → Negative impact of visitor experience, rejection from the host community.
- Trivializing or artificializing the local culture, causing incomprehension, rejection, marginalization or lack of identification in the host community and a lack of authenticity that negatively affects the visitor (feeling of disappointment or frustration).
- Poor planning that can result in: a process of acculturation of the destination; creating or perpetuating extractive models and altering the social balance of the community.

The World Tourism Organization (UNWTO) defines **sustainable tourism** as "tourism that fully takes into account **current and future economic**,

10. Idem.

social and environmental impacts to meet the needs of visitors, industry, environment and host communities.

To achieve sustainable cultural tourism-based development we must:¹¹

- Protect and preserve the cultural resource.
- Effectively manage the cultural resource.
- Promote cooperation between tourism and heritage stakeholders.
- Engage the local community.
- Educate the public and raise awareness.
- Reinvest revenue into heritage.

3.1. The most important thing is the heritage asset

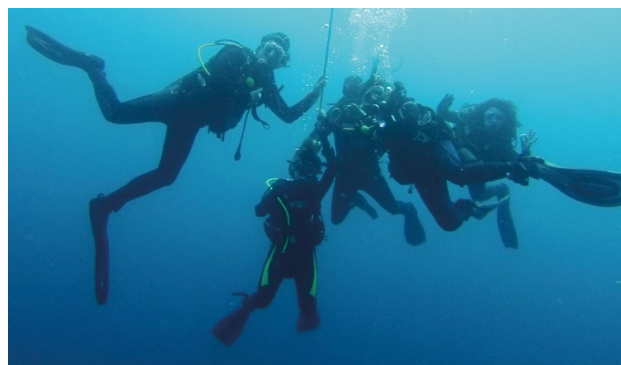
We must remember that, despite the beneficial relationship that can occur between tourism and heritage, the scope and importance of maritime cultural heritage goes far beyond tourism and is an essential part of human culture, knowledge and identity. In addition, heritage resources are not regenerable. Each of them is unique and their degradation implies the irreparable loss of fragments of our history. Not for nothing, access to heritage is considered a fundamental human right. That is why it is so important that the process of interpretation (of mediation with the public) is rigorous and always has an educational component, that it helps to foster a sense of belonging and that it increases awareness of the fragility of the heritage and its need for protection, fostering community involvement. In the case of underwater heritage this aspect is especially important. Being underwater, its visibility and accessibility is a priori much less, and this makes it much more difficult to protect, get to know and defend. “Only what is known is loved and protected.”

11. Vladimirova, M (2015) “Rethinking the framework of interdisciplinary cooperation between cultural heritage, local economic development, tourism and media” *3rd International Conference “Ohrid-Vodici”* 2015.

Heritage can benefit from tourism

- Education → Raising of awareness, community involvement in its conservation and protection.
- Social revaluation → Investment incentives, cultural policies or legislation for its protection.
- A correct distribution of economic resources and the profits generated → Investment in conservation, research, dissemination, etc.

3.2. New visitor profiles, new opportunities



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Maritime cultural heritage has very interesting potential to meet the new demands and needs of visitors today:

THE NEW VISITOR

The new tourist has seen his/her labour rights improved, has fractional holidays and loves to take short trips; he/she lives in a world of haste and immediacy and wants to disconnect; advertising and social media sell him instant happiness, he lives in the age of self-realization, “because I’m worth it” and hypermobility. Increasingly, he is more interested in dynamic activities that go beyond rest, related to a new way of understanding leisure; rewarding,

enriching, formative, participatory activities with a growing level of individualization. He seeks unique experiences and the idea of inner attitude, experience, adventure or experience stands out. To share through social networks with evocative, funny and original images has become a very important for certain groups of people, which sometimes leads to a superficial appreciation of the experience.

Maritime cultural heritage is a little-known heritage that has a lot to offer:

- Great historical events and unique anecdotes connected to the people and the community.
- A sense of mystery, adventure, exploration.
- It provides activities for all audiences.
- It is a diverse and versatile, diachronic heritage (covering different historical moments).
- It stimulates the imagination.
- It generates emotions.
- It connects the past and the present.
- It ranges from cultural, religious to even gastronomic manifestations.
- It can be permanent or itinerant, connecting cities and towns.
- It is transnational.
- It is situated in attractive natural environments.
- It is capable of attracting general audiences, but also audiences looking for experiences with high added value and it has great potential for active tourism.

Although here you will find help to discover the maritime cultural heritage in your area and ideas to showcase it, before finding your own story, you must be very clear who you want to tell it to. **Do you know your visitors?** Prove it with **Exercise 1***. If you don't have all the data, do not worry, blank spaces will help you better understand what aspects to work on. Some can be easily solved, such as by conducting surveys. For others, you may want to seek the support and collaboration of other institutions or partners.

When selecting and evaluating your heritage resources, you should be very clear about what kind of audience you want to engage and what your goals are. Do you want to redistribute visitors from a certain destination? Attract foreign tourists? Bring heritage sites to the attention of the local community itself? Or maybe you would like to address a specific audience like recreational divers? Before you go any further, make sure you know your audience and your goals are clear.

Red Sea shipwrecks are a benchmark for divers from all over the world and the SS Thistlegorn alone (one of the best known) contributes about 4 million euros to the local economy each year.¹²

12. F Kean J. (2009). SS Thistlegorn: *The true Story of the Red Sea's Greatest Shipwreck*.

* All exercises are displayed at the end of each chapter but also on the final Annex, in the case that you prefer to skip them and continue reading.

3.3. EXERCISE 1. Discover your tourist destination

1) How many tourists arrive to your destination per year? _____

2) Would you like this number to increase?

a. Yes

· How much? _____

b. No

3) How well do you know them?

a. How many are families? _____

b. Age (If possible, add a percentage/amount to your answer):¹³

· 0- 9

· 20-29

· 50-59

· 10-15

· 30-39

· 60-66

· 16-19

· 40-49

· ≤ 67

c. Gender (If possible, add a percentage/amount to your answer):

· Female

· Male

· Other

d. Origin (If possible, add a percentage/amount to your answer):

· Local

· National

· International

13. Please note that depending on different factors (i.e. retirement age in your country) you may want to redistribute age groups according to your own objectives and circumstances.

4) Is this the kind of tourism desired for your destination?

a. Yes

b. No

· If not, describe the kind of visitor desired and explain in a few lines what the needs and interests of your desired visitor are.

5) How do your visitors arrive?

a. Bus/Coach

b. Train

c. Car

· Private

· Rental

d. Boat

e. On foot

f. By bicycle

g. Other:

6) When? (If possible, add a percentage/amount to your answer):

a. What time of the year?

· Autumn

· Winter

· Spring

· Summer

b. What time of day?

· Morning

· Early afternoon

· Evening

· Night

· All day

7) How long do they stay? _____

8) How do they move around?

a. Bus/Coach

b. Train

c. Car

· Private

· Rental

d. Boat

e. On foot

f. By bicycle

g. Other:

9) Where do they go afterwards?

a. Home

b. They continue the journey to

10) What are their motivations/ expectations for coming?

11) How do they spend their money?

- a. Average spent by visitor: _____
- b. Percentage of expenses included in package tour: _____
- c. Not included _____
 - International transport: _____
 - Types of expenses:
 - Accommodation: _____
 - Meals: _____
 - Activities _____

12) Does your destination benefit from this spending?

- a. Yes
- b. No

13) Do they focus especially on a particular location or attraction?

- a. Yes
 - Is that a problem?
 - Yes
 - No
- b. No

14) Where do they get the information to prepare their visit from?

- a. Guides
- b. Films/Novels
- c. Internet
- d. Nowhere, they just go on adventure
- e. Other: _____

15) Are they satisfied, are they missing something? Name five things they value and five they miss or are not fully satisfied with.

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16) How would you like your visitors to see you and feel about your destination?

17) GOALS: Now write briefly what your goals and target audience are.

REMINDERS AND NOTES:

4

Identify your assets

The footprint left by the relationship of humans to the sea is very diverse. When it comes to promoting maritime cultural heritage, whether we start from a particular resource or simply want to highlight the cultural maritime potential of a destination, the first step is to better understand the heritage resources as a whole, relating them to each other with the values we want to enhance. Linking all this with the local community is also essential when it comes to activating, reinforcing and adding value to our heritage.

Knowing our history and our own identity is indispensable to define the image that we want to transmit to our visitors, to be clear what we want to tell and how we want to do it.

Whether you already know what resources you would like to work with and what story you want to tell or you are not yet clear, a more complete view of what maritime cultural heritage is and what it encompasses will help to enhance and make the most of the heritage resources of your destination.

What kind of heritage can you find related to maritime culture?

Maritime heritage is very diverse and can be tangible or intangible in nature, on land or underwater.

Although we will talk about different types of heritage below in order to help us better identify resources, we should remember that most of the time these categories are theoretical and that there may be many types of heritage linked to each other and to different aspects of maritime culture.

First, we present one of the most inclusive concepts related to maritime cultural heritage: The maritime landscape.

THE MARITIME LANDSCAPE: In the relationship between human beings and the sea, the landscape combines the land and the sea, the tangible and the intangible, the constructed and the cognitive. It is a physical and conceptual space that combines the natural environment, heritage elements and our own perception. The landscape is constructed when it is observed. It is what we see and feel; the individual and common values and memories that it evokes in

us. It combines nature and the cultural appropriation that human beings have made over time of that space. The landscape defines the way of life of the people who inhabit it and is at the same time defined by the way humans inhabit or have inhabited it.

The maritime landscape provides a physical and intangible context of immense importance when it comes to promoting and relating the different heritage elements. Although this is true for all maritime heritage, it becomes particularly important when we talk about elements intrinsically related to the environment (from which they receive much of their meaning) such as ports, lighthouses, churches, temples, shipwrecks, battlefields or coastal fortifications.

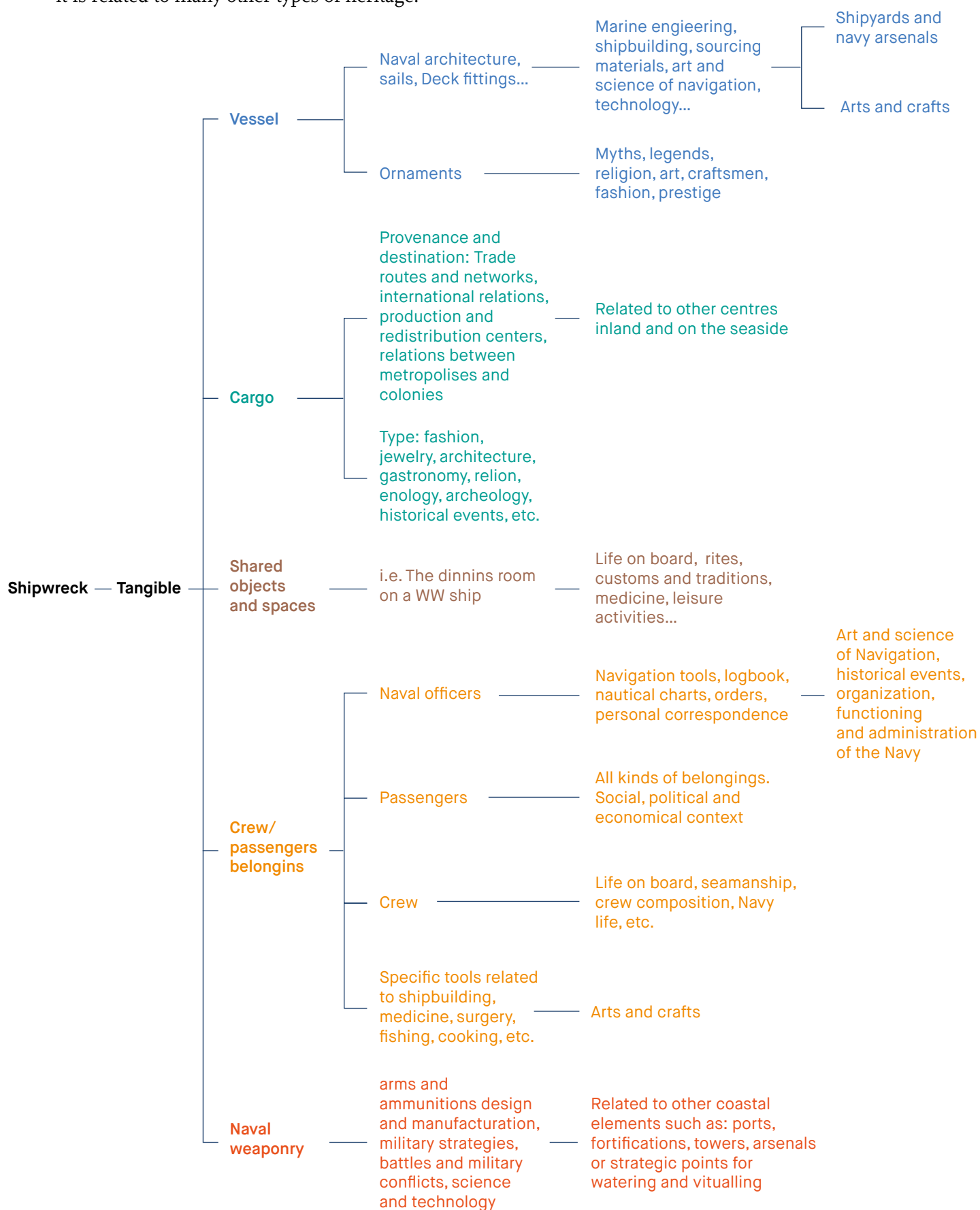
Do not forget the natural environment

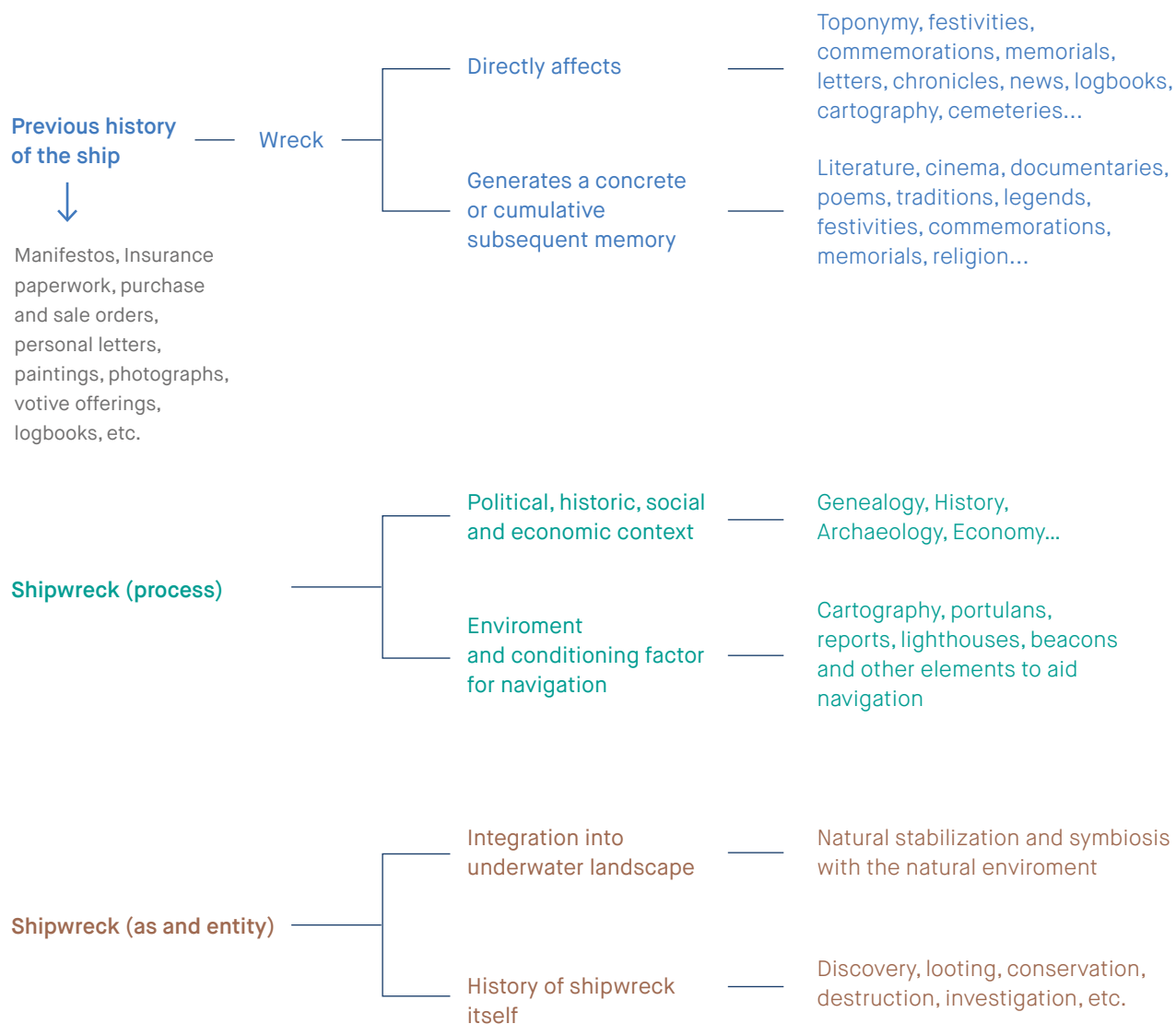
The natural environment, which is part of the maritime landscape, can not only be a fundamental ally to valuing heritage, but is also a powerful attraction to visitors and should always be taken into account within sustainable tourism. Its abandonment can cause irreparable damage to the fauna and flora and will have a negative impact on both visitors and the local community.

Next, we will look at some of the main heritage elements that we can find in relation to maritime culture:

The footprint of a shipwreck.

In this infographic you can see that although a shipwreck might seem to be an isolated element, it is related to many other types of heritage.





4.1. Tangible elements

These are heritage elements that have a physical character (they can be seen and touched). They range from small objects such as a fishing hook to constructions, buildings and building complexes. Some of the most common are:

- Archaeological or historical artefacts
- Archaeological sites on land or at sea
- Wrecks (ships and aircrafts)
- Constructed elements:
 - Structural complexes, such as:
 - Ports
 - Arsenals
 - Shipyards
 - Fortifications
 - Walls
 - Towers and watchtowers

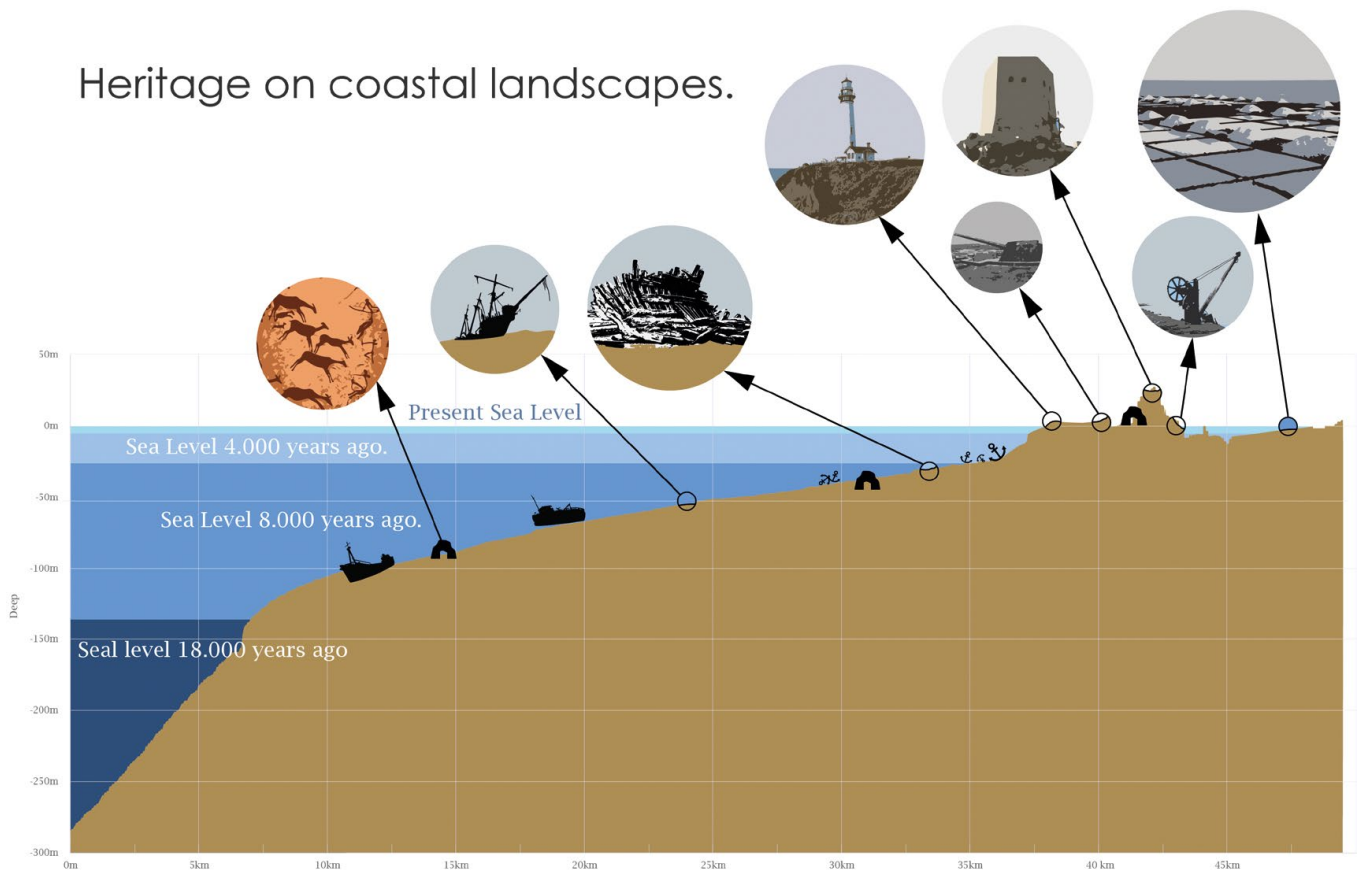
- Lighthouses
- Other buildings directly related to maritime life such as fish markets, officers' schools, marine hospitals, etc.
- Other buildings or spaces indirectly related such as churches or cemeteries

- Documents:

- Letters
- Diaries
- Logbooks
- Newspapers articles
- Chronicles
- Travel stories
- Pilot charts
- Portolan charts
- Nautical charts
- Administrative documents
- Historical photography
- Etc.

- Sound, visual and audio-visual recordings

Heritage on coastal landscapes.



4.2. Intangible elements

There is a part of culture that is not material. And it has to do with the way things are done, such as traditions, expressions, customs, rites, arts and ancestral wisdom associated with the maritime world. This type of heritage is often associated with tangible heritage, but it has a different nature, which makes it extremely fragile. Preserving a guitar is relatively simple, but what about a dance?

Some of the main types of intangible heritage assets are:

- Customs and traditions
- Rites and festivities
- Religions, myths and legends
- Music, dance
- Language, expressions, sayings and localisms
- Gastronomy
- Craftsmanship (riverside carpentry, blacksmiths, master gunsmiths)
- Navigation techniques
- Fishing or hunting techniques
- Games
- Marine knowledge (navigation conditions such as winds, currents, tides, waves, other natural phenomena, etc.)
- Oral testimonials
- Lifestyles

4.3. Maritime cultural heritage is interrelated

When we talk about maritime cultural heritage, we must always keep in mind that societies and individuals living facing the sea find their lives are affected by it transversally. What we call maritime culture permeates virtually every aspect of the day-to-day life of these communities: the way they move, the way they transport goods and people, the

goods that are traded, the resources, the prayers, the songs, dances and legends, the politics, war, death... That is why it is important to understand how heritage, which is the result of this way of living, is interrelated and can also be connected with many other aspects of the life of these societies. This will not only allow us to interpret correctly, but will also enrich our discourse, promote integration into the local community and allow us to present much more real and authentic experiences. Let us look at some examples.



Commercial Docks, Rotherhithe, London (engraved after unknown artist, 1827) Public Domain.

Ports: Ports bring together countless cultural elements linked to the maritime world in which you can read the history and evolution of coastal cities. In addition, they are a melting pot of cultures, a meeting point and place for the exchange of people, goods and ideas. Various ethnicities, languages, traditions and religions live side by side in their docks, and also leave their mark on the local community. They require a number of infrastructures and complementary buildings for their operation (such as warehouses, administrative buildings and dry docks for repairing boats) and, in turn, stimulate the proliferation of other businesses and services in the surrounding area, such as hostels, insurance companies, shops and exchange points, doctors or leisure activities of various kinds.

Their structure, construction and layout depend directly on the natural environment and their history is linked to many other places and populations

either on the same coast or much further away thanks to the navigation and commerce routes. Their sea beds are rubbish dumps where all the broken, discarded or lost objects from all the boats that have anchored there throughout history are deposited (the most complete studies on tobacco pipes from the eighteenth century are from those found on harbour bottoms), and it is not uncommon for shipwrecks to be found in their entrances (and even on their bottoms), as a result of accidents, storms or armed conflicts.

Traditions in maritime spaces like these often include religious rites or processions linked to the sea, and it is common to find specific prayers, related votive offerings or (sometimes on the outskirts of the town) cemeteries with drawings or phrases on the tombstones that refer to professions linked to the sea.

The life of a Navy sailor: Navy officers in the 18th century entered into the service of their country practically as children and would usually remain there until their retirement or death. We can follow their footsteps through their service sheets, records, personal and professional letters, records, requests to embark with their wives, children, or other family members, notary protocols, military mentions, reports from their superiors, requests for marriage leave, pay claims etc. Even once they died, especially if they had been in combat, we can follow the story of their widows and orphans through administrative records and claims of financial compensation or back wages. Sea life was a profession that used to follow a tradition of parents to children so genealogical studies can provide very interesting information not only about individuals but on entire families over different generations.

The Cadiz watchtowers

In 1717, the port of Cadiz held a monopoly over trade with America, which made trade flourish to the point of forever changing the face of the city. Throughout the 17th century and especially the 18th century, the city began to fill up with the so-called watchtowers, to which some attribute North African influence and which in all Spain are exclusive to Cadiz. The watchtowers were towers situated in the residences of the wealthy merchants with the purpose of bringing light and status to the house, but above all, monitoring the arrival of commercial vessels at the port. We know that in 1777 there were at least 160 spread throughout the city, of which today there are some 125 that have become one of the most emblematic and unique elements of the city.

More info: www.torretavira.com



Author: Emilio J. Rodríguez Posada. CC-BY-SA-3.0.



Fort of St. John The Baptist (Porto Moniz), Madeira (Portugal)

The [Fort of St. John the Baptist](#)¹⁵ (Forte de São João Baptista in Portuguese) dates back to the 18th century and was built to protect the north-west coast of the island of Madeira. The original fort was built in 1730 as a response to pirate attacks on the village of Porto Moniz. In 1998, the ruins were acquired by the local city council, which restored its original appearance, based on existing iconography, while its interior was adapted to its new function as an aquarium.

Open since 2005, with the objective of preserving and bringing to the attention of visitors the marine biodiversity of the Madeira Archipelago's seas, the Madeira Aquarium is home to over 90 native species distributed in 12 exhibition tanks. Besides, visitors can enjoy a unique diving baptism experience.

More info: www.portomoniz.pt



The fort of Saint John the Baptist/Aquarium.

In archives such as that of Viso del Marqués (Spain), the files of large numbers of sailors are preserved. Visiting the archives is a must to get an insight into the real lives of seafaring people, beyond the facts of the great historical events.

4.4. How to know your resources?

Whether you intend to showcase a particular element or you have not yet decided what the core or main idea of your project will be, the first thing you need to do is an inventory of the heritage elements related to the maritime culture of your surrounding area. And the first step to decide what and how you want to showcase will be to document these elements in as much detail as possible.

Starting point: Investigate the maritime history of the town and find out what heritage remains have been left with the passage of time, which of them have been abandoned, transformed or lost and what traditions or customs are kept alive. If you want, you can start working with [Exercise 2](#).

THE LIFE OF A SAILOR IN THE ARCHIVES

In archives such as that of Viso del Marqués (Spain), the files of large numbers of sailors are preserved. Visiting the archives is a must to get an insight into the real lives of seafaring people, beyond the facts of the great historical events.

15. www.portomoniz.pt/pt/concelho/caraterizacao/patrimonio

Mary Rose Museum, Portsmouth Historic Dockyard (England)

The Mary Rose Museum contains a large part of the hull of this imposing vessel. But this vessel was also home to a large number of people and the place where their particular stories played out. Thanks to DNA studies, the Mary Rose research team has brought the crew back to life, and visitors can meet them face-to-face; but, moreover, they have brought back their way of life: food, trade, clothing and even their entertainment.

More info:

<https://maryrose.org/life-on-board/>



Mary Rose Museum. Author: Peter Kersten.
CC-BY-SA-4.0.

Do not worry if you do not have all the information, the chances are you will have to rely on institutions, experts or specialists from the local area. Throughout the process there are several agents that you can, and will probably need, to contact:

Experts from the world of academia and research, that may be from universities, museums or research centres. They will be able to guide you and probably already have archaeological charts, inventories and other relevant documentation about the area, finds on land or at sea and other heritage elements.

Local associations. Listen to them. They are often set up to defend, maintain, praise or denounce the abandonment of what they consider to be an important aspect of their identity. They are an active part of the voice and the heart of the community. Their members usually dedicate their time to heritage by vocation and because they feel an emotional connection, so they can be very important allies when it comes to starting work, spreading knowledge of the heritage elements or even when carrying out activities when budgets are tight.

The Navy. The Navy can be an important ally in various ways: sharing its nautical knowledge and experience, accessing its historical archives, collaborating directly on research campaigns, since it usually has the means and equipment for this, sharing archaeological findings that it is not uncommon for them to perform accidentally during manoeuvres.... Remember that, after all, maritime heritage is, in many cases, a direct part of its history and legacy.

Diving centres. They are not always very open to strangers, but of course no one knows the environment like them. Many of the great underwater heritage discoveries have been made by chance by recreational divers.

Local institutions, heritage and environmental managers. Relying on local and national institutions (and even those international ones) is very important for the overall success of the project and can be of particular interest at this stage, as it is very likely that local heritage and environmental managers already have a clear idea of most resources, their state of conservation and needs.

Local or national libraries, archives and newspaper libraries. Professionals at these centres are also often researchers of their collections. In addition, many of their collections are now digitised. A simple search of their catalogues via the internet, or some queries via email can yield a lot of information.

Working with divers at the local community



Laurentic Exhibition.

NAS AWARD

The Nautical Archaeology Society has set up an award to encourage people to record in a non-intrusive way, care for and monitor the underwater heritage: the "[Adopt a Wreck award](https://www.nauticalarchaeologysociety.org/adopt-a-wreck)".¹²

LAURENTIC CENTENARY PROGRAMME, DERRY (NORTHERN IRELAND)

The Laurentic was a luxury White Star Liner commandeered by the Royal Navy for the first World War. In January 1917, laden with 43 tons of gold, the ship struck a mine off the mouth of Lough Swilly. Of the 475 on board only 121 survived.

In 2016 the owner of the wreck, Ray Cossum, approached the museum service with the idea of putting on a commemorative event. He had a small collection of artefacts from the wreck. Other diving schools were contacted, and some local media interviews and news articles help spread the word. Individual divers and members of the public as well as relatives of those who either died or survived the wreck got in touch with

additional information, documents or artefacts that could help build a more comprehensive interpretation. The fact that the exhibition was not for profit enabled them to feel part of a communal effort to promote and preserve a story of international significance, of which their contribution would be highly valued. The exhibition was launched on the 25th on January, 100 years to the day of the sinking. It featured many incredible artefacts from the wreck as well as animations, audio recordings and personal stories. A programme of events accompanied the exhibition, with lots of external expertise on the conditions of the wreck today and its history, as well as the other wrecks of the north west coast of Ireland.

Atlantic History Library Study Centre (CEHA), Madeira (Portugal)



Freepik.

The Atlantic History Library Study Centre (Centro de Estudos de História do Atlântico - CEHA in Portuguese) is a scientific research institution whose main goal is to coordinate the research and

12. <https://www.nauticalarchaeologysociety.org/adopt-a-wreck>

promote the dissemination of the Atlantic Islands' history.

The Atlantic History Study Centre sets the goal to promote, to organize conditions and to increase the scientific research in the study-area of the history of the Atlantic Islands, in particular, the history of Madeira Island.

The aim of the Atlantic History Study Centre is to acquire, to conserve and to divulge the documental basis for research, both in digital and paper support.

More info: ceha.madeira.gov.pt

BE CREATIVE and think outside the box! Whether it is collecting information, researching, highlighting, or promoting it, remember that there is a whole community (physical and digital) of people with a great passion for maritime heritage. And, thanks to new technology, they are just a click away.

Some inspiration

SPANISH NATIONAL LIBRARY COMMUNITY

Through different enrichment projects, this platform facilitates collaborative work on data and digital collections. Anyone can be a part of the team and contribute through tasks that bring immense added value to the library's collections and new meanings and perspectives, rethinking our heritage and generating new knowledge accessible for the future. With the collaboration and collective intelligence actions of everyone involved.

More info: comunidad.bne.es

THE EUROPEANA 1914-1918 PROJECT: UNTOLD STORIES & OFFICIAL HISTORIES OF WWI



German Albatros near Douai, France. Q 50328, Imperial War Museums. Public Domain.

This project collected memorabilia and stories from the period of the Great War (1914-1918). Europeana 1914-1918 was based on an initiative at the University of Oxford where people across Britain were asked to bring family letters, photographs and keepsakes from the War to be digitised. The success of the idea—which became the Great War Archive—had encouraged Europeana, Europe's digital archive, library and museum, to bring other national institutions across Europe into an alliance with Oxford University. The collaboration brought European stories online alongside their British, German, Slovenian, Luxembourgian, Irish, etc. counterparts in a World War One story collection.

More info: pro.europeana.eu/project/europeana1914-1918

4.5 EXERCISE 2. Discovering your history

1) How has the presence of the sea influenced the History of your local area?

2) What was the role your local area played in the great moments of History?

3) How did those events affect your area?

4) What main historical remains are preserved?

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5) How did they come to exist?

6) What do these remains mean in the context of your local area, your country and Europe?

7) How did they influence the local community in their day, how did they affect people's lives?

8) What do they mean to people today?

9) How does this heritage relate to the environment, to other heritage sites in the same area or with similar heritage sites in other areas or countries?

10) What legacy has that part of history left in your community?

11) Do you know any festivities, events or traditions related to the sea that are still alive?

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12) GOALS: We suggest you make a short list of the aspects of your area's maritime history that you think are better known or disseminated and those that have gone more unnoticed or have been given less attention.

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REMINDERS AND NOTES:

5

What kind of heritage could be a transnational asset?

We have already seen that different heritage elements can be related in the same area. But this is also true between different regions, it is what makes the sea a nexus and not a border. If our ability to link these elements is already important, imagine how enriching it is when we are able to fit the pieces into an even bigger puzzle. In the case of the Atlantic, there are some common elements that have involved different countries and that can be a very powerful resource and attraction, a vehicle for collaboration, solidarity and knowledge.

Some of these transnational elements are:

5.1. The Spanish Armada

The Spanish Armada was a fleet sent against England by King Philip II of Spain in 1588, part of an invasion plan that aimed to dethrone Queen Elizabeth I. In a naval undertaking of dimensions never seen before in Europe, the monarch gathered some 130 ships, with almost 30,000 men assigned to this expedition.



Philip James de Loutherbourg (1796) "Defeat of the Spanish Armada, 8 August 1588". National Maritime Museum, Greenwich Hospital Collection. Public Domain.

The fleet left Lisbon in May 1588, but a series of storms forced it to regroup, replenish supplies and repair some of the ships. In July the Armada was off Plymouth, in August off Calais. The Spanish and English Navies clashed in a series of skirmishes but eventually the Spanish fleet was punished by a severe storm lasting several days, forcing the ships to return to Spain taking the dangerous northern route around the British islands (following the wild Atlantic coasts of Scotland and Ireland), where the returning ships, whose crews were weakened and worn down by battle, dispersed, suffering severe

damage and several shipwrecks. In addition to the ships lost in combat, more than twenty were lost between the coasts of Ireland and Scotland due to the storms and several more off the Spanish, French and Dutch coasts.

The discovery, excavation and research into some of these shipwrecks (and the voluminous related historical documentation) has allowed us to re-study the campaign by providing critical information on a type of naval strategy and combat that disappeared soon after, that of reused and adapted ships rather than ships expressly built for war.

The history of this Armada is in turn divided into many other small and great stories: that of the socio-political and religious context and the great monarchs, that of the great commanders such as John Hawkins, Francis Drake, Charles Howard, Walter Raleigh, Alonso Pérez de Guzmán, Alejandro Farnesio or Miguel de Oquendo, that of great discoveries (such as the Girona, the Trinidad Valencera or the Ragazzona), that of life on board, that of naval strategy, shipbuilding, etc., or the memories left in the populations that witnessed those shipwrecks, just to name a few examples.

Although the war between England and Spain was settled with a treaty that was favourable to the latter, the defeat of the Spanish Armada left a deep mark on European memory, which is shown beyond the heritage elements directly generated during this era, by the fact that it still appears in numerous writings, chronicles, novels, studies, congresses, exhibitions and works linked to the arts even today.

More info:

- [International Congress on the Spanish Armada held at the National Museum of Spanish Underwater Archaeology in 2019.](#)
- [Divers from the Spanish Armada collaborate with archaeologist to search for \(and find\) the remains of La Ragazzona.](#)

La Trinidad Valencera - An Armada Exhibition

La Trinidad Valencera, - An Armada Shipwreck is a permanent exhibition highlighting the history of the Spanish Armada and the archaeological discovery and recovery of artefacts from La Trinidad Valencera off the coast of Donegal.

In the early 1970's, the City of Derry Sub-Aqua Club was instrumental in discovering and excavating the important Spanish Armada ship, La Trinidad Valencera. The excavation was a model of its kind, introducing many innovations to underwater archaeology. The recovered objects were sold by the Irish government for a peppercorn price to the Ulster Museum which had played an extremely important role in the project, particularly in the area of conservation. These objects had a particularly important place in the major exhibitions at Greenwich and Belfast in 1988, marking the four hundredth anniversary of the Armada.

One of the conditions of the sale to the Ulster Museum was that the objects would be displayed in Derry when suitable premises became available. All the parties agreed that the Tower Museum,

after some modification, would make an excellent home for these objects to give a stronger international element to the more local 'Story of Derry' exhibition currently on display.

- [La Trinidad Valencera: Tower Museum. \(Derry\)](#)
- [Trinidad Valencera exhibition. Inishowen Museum \(Donegal\)](#)

Some other museums with heritage related to the sunken ships:

- [La Girona: Ulster Museum \(Belfast\)](#)
- [La Lavia; Sta. M^a de Vison; Juliana: Dublin National Museum \(Dublin\)](#)

5.2. The Napoleonic Era



Rafael Monleón Torres (1870) La batalla de Trafalgar. Naval Museum of Madrid. CC-BY-SA-4.0

Although the Napoleonic era officially begins with Napoleon Bonaparte's coup d'état (1799) and ends with his defeat at Waterloo (1815), this period encompasses the Napoleonic Consulate (France, 1799-1804) and The First French Empire (1804-1815), the Napoleonic Wars (1793-1815), which affected all of Europe, and the War of Independence in Spain (1808-1814).

Between the end of the 18th century and the end of the 19th century, naval warfare underwent profound changes. During this period, we witnessed the last great confrontation between sailing ships, with Britain as a hegemonic power at sea after the Napoleonic Wars (1793-1815), a period which probably saw the most important technology development until the spatial race. The ship-of-the-line was the main protagonist of this new stage, expressly designed and built for war. However, at the end of the 19th century, with the arrival of the steam engine and the explosive projectile, both the sail and the strategy based on boarding and catching ships were abandoned, entering a new and completely different era of war at sea.

The continuous state of war during these years and the resulting industrial, scientific and technical advances did not only influence the naval field. Europe's face, society, economy, and collective consciousness was deeply transformed. These were marked by the furrows and footprints left behind by the fortification of numerous coastal and land sites, the transformation of ports and entire towns, the industrialisation of production and supply chains, the movement of people and armies and the ideas customs and traditions that travelled with them. All these factors have left a rich documentary, artistic, historical and archaeological heritage of incalculable value. This includes a maritime space lined with fortifications, watchtowers, shipwrecks (sometimes the result of great battles, sometimes individual combats) and other heritage elements. In addition, with the growth in literacy and media/publication, a large number of chronicles, stories and novels have been passed on, reflecting the everyday life of ordinary people and not just the way of life and narrative of the elites and high ranking groups.

The names of naval battles of this era such as the Battle of the Glorious First of June (1794) Copenhagen (1801) or, especially, the Battle of Trafalgar (1805), still echo in the ears and memory of Europeans and still generate great commemorations and events, arousing deep interest in the population.

HMS VICTORY WARSHIP: EXPERIENCE LIFE ON BOARD THE WORLD'S MOST FAMOUS WARSHIP

Situated in the Portsmouth Historic Dockyard (England), HMS Victory is best known for her role in the Battle of Trafalgar, and currently has a dual role as the Flagship of the First Sea Lord and as a living museum to the Georgian Navy. She transferred to The National Museum of the Royal Navy in 2012.

"Step on board HMS Victory, it is 14th September 1805 and the ship is in preparation for Trafalgar and ready to sail from Portsmouth. See Victory through Nelson's eyes throughout, with his flagship presented as she was in her Georgian heyday. Soak up the atmosphere as the ship and her crew get ready for the Battle of Trafalgar, see where sailors and officers ate and slept, and fully feel the drama and impact of the day that changed history forever".

More info: www.hms-victory.com

MONTE BUCIERO CULTURAL PARK, CANTABRIA (SPAIN)

Due to its strategic position, numerous important fortresses of the Napoleonic period, declared sites of cultural interest and integrated into the natural environment, are grouped together here, in the surroundings of this hilly Cantabrian headland, in Spain, as a Culture Park. Featuring in different hiking routes in an incomparable natural setting, some have been restored and the Fort of San Martín has been given a new use as a cultural centre.

More info (Spanish): www.xn--santoa-0wa.es/turismo/monte-buciero-0

The Last Voyage of the Frigate Mercedes. A Cultural Treasure recovered (Exhibition), Spain



El último viaje de la Fragata Mercedes. ©AC/E

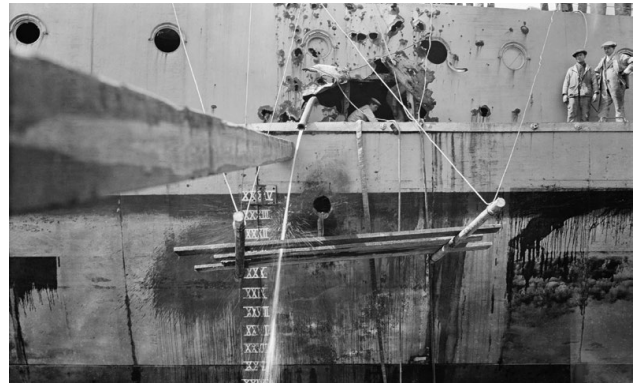
Four Spanish frigates, - *Medea*, *Mercedes*, *Fama* and *Clara*, - laden with bullion for the Spanish crown, sailing from Montevideo to the coast of Cadiz, were attacked by four English frigates to prevent the riches from falling into the hands of Napoleon, their most feared enemy. During the combat the Spanish frigate *Nuestra Señora de las Mercedes* exploded and sank. The 'treasure hunting' firm Odyssey Marine Exploration located and looted part of this frigate's cargo, illegally transporting it to Tampa (Florida) in 2007. This gave rise to a lengthy lawsuit in which the US courts finally ruled in favour of the Spanish state. It is the case related to Underwater Heritage with the highest ever impact in the Spanish press.

The main purpose of this exhibition is to make these assets known and available to society as part of a heritage that belongs to it. The exhibition project aims to go beyond the economic worth of the treasure extracted by conveying the cultural values of these objects.

More info: www.accioncultural.es/en/

5.3. The World Wars (1914-1918, 1939-1945)

The 20th century is the backdrop for the two bloodiest wars in our history: the two World Wars.



Photograph showing the forward port side of HMS Warspite in dry dock showing damage caused by a German shell at the Battle of Jutland (2-3 June 1916). Q 23212, Imperial War Museums. Public Domain.

The First World War (1914-1918) took place mainly in Europe and from a naval perspective there were three distinct phases: A first phase that maintained the classic model of war at sea; the next phase of retreat by submarine action, still marked by certain diplomatic scruples, and an unrestricted third phase that began in 1917 and ended with the armistice. More than 70 million soldiers took part in the war and casualties are estimated to have been between 9 and 15 million people.

During this period, the concept of an adapted merchant ship with auxiliary cruisers returned, to some extent, and the submarine not only proved to be a formidable weapon, but its active incorporation into the navies of various countries marked the development of technology over the next few decades, opening up a new dimension in the traditional surface combat strategy.

The main naval battle of this war, and probably one of the last that can still be considered a classic strategy, is the Battle of Jutland, the only and final large-scale confrontation between battleships during World War I. In this battle, 14 British and 11 German ships were lost, with a significant number of human casualties on both sides.

One of the main strengths (and at the same time threats) of this type of heritage is that, despite being mostly European, it is scattered throughout different parts of the world and oceans, allowing for a dissemination of great international value.

THE STRANDINGSMUSEUM, JUTLAND (DENMARK)

This museum presents the maritime History of Jutland, including artefacts from the shipwrecks of this battle and other interesting artefacts such as a WWI contact mine.

More info: strandingsmuseet.dk

VISITING THE WRECKS IN SITU. GALLIPOLLI (TURKEY)

It is possible to visit the wrecks at the Gallipoli site depending on the skills and level of the diver. Among these wrecks, a few of the most visited are the *Lundi*, HMS *Majestic* or lighter shipwrecks. Many warships from both World Wars can also be seen in Scapa Flow. There are Royal Navy and German Navy vessels, light cruisers, destroyers and a submarine, among others.

Forgotten Wrecks of the First World War

Forgotten Wrecks of the First World War is a Heritage Lottery Funded (HLF) is a four year (2014-2018) project devised and delivered by the Maritime Archaeology Trust to coincide with the centenary of the Great War. At the heart of the project is a desire to raise the profile of a currently under-

represented aspect of the First World War. While attention is often focused on the Western Front and major naval battles like Jutland, historic remains from the war lie, largely forgotten, in and around our seas, rivers and estuaries. South Coast wreck sites which include merchant and naval ships, passenger, troop and hospital ships, ports, wharfs, buildings and foreshore hulks are often unrecognised and unprotected and have been degrading and deteriorating due to natural and human processes, for approximately 100 years.

More info: forgottenwrecks.maritime-archaeologytrust.org

World War II took place between 1939 and 1945, involving most of the nations of the world. During this war, some of the most terrible milestones in human history were reached, such as the mass death of civilians, the use of nuclear weapons, or the Holocaust. At a naval level, the conflict was marked by unrestricted underwater warfare from the start; a new type of strategy, aeronautical warfare, with the consequent incorporation of aircraft carriers as an assault force; and a constant battle for Atlantic dominance between Germany and the Royal Navy. World War II ended with a death toll of between 50 and 70 million people.



Attack on Pearl Harbor on 7 December 1941. National Archives and Records Administration.

The Battle of the Atlantic is considered by the Allies to be the most important of the war. It lasted from day one to the end and the Germans estimate that their submarines fought in no less than 6000 combats, to which we must add surface actions and aircraft attacks. Some of these encounters left names in our memory such as “Bismark”, “Graf Spee” or “Scharnhorst”.

STICHTING ATLANTIKWALL MUSEUM, SCHEVENINGEN



Bunker for troops. Atlantic Wall Museum. By Vincent van Zeijst. CC BY-SA 3.0.

The Hague is known worldwide for its role as an international metropolis of Peace and Justice; but, during the Second World War it was badly hit. Located at a strategic crossroads in the North Sea and close to London and Germany, the city was largely destroyed by both occupier and liberator. Today, the widely scattered bunkers have been preserved, as war memories, in sharp contrast to the many institutes of peace and justice that have been set up since then in The Hague. Now, as there are fewer people who remember the horrors of World War II, the bunkers in The Hague and the dunes of Scheveningen are increasingly important as a historical monument and they provide a physical link between war, peace and freedom, The Hague and its mission.

More info: www.atlantikwallmuseum.nl

Submarine pens turned into museums

ESCAL'ATLANTIC (FRANCE)

Escal'Atlantic, is a museum that explores the historic ocean liner experience in Saint-Nazaire, France. The museum is found inside the former German World War II submarine pen in the harbour of the city port.

More info: www.saint-nazaire-tourisme.uk

LORIENT (FRANCE)

Built by the Germans during the Second World War, the base of submarine threw Lorient in the heart of the Battle of the Atlantic. Largest military fortress in Europe, it was later used by the French Navy as headquarters squadron of Atlantic submarines until 1997.

More info: www.la-flore.fr

From 2014 to 2018, the UNESCO commemorated the Centenary of World War I. During these four years numerous activities were carried out in the different countries, in order to remind the younger generations of the need for peace and to provide education on the impact of war, especially through heritage.

War at sea was a very important part of WW I and II. The resulting maritime and underwater heritage offers a unique window to two of the darkest periods in our history as a species, directly showing us the devastating consequences of war. Let us remember that most of these shipwrecks and battlefields are real cemeteries. That is why it is essential for awareness, education, and for the interpretation of the heritage of any historical period, but especially one so terrible and close, to be accompanied by the transmission of values and the necessary critical apparatus.

Archaeological Atlas of the 2 Seas – transferring data and values

The Archaeological Atlas of the 2 Seas project is an international venture meant to enhance our understanding of the submerged heritage of the Channel and southern North Sea (European Regional Development Fund (ERDF) through the INTERREG IV A 2 Seas Programme).

The first stage of the project involved merging data related to underwater archaeological sites in Belgium, the United Kingdom and France to create a comprehensive database of the underwater archaeological landscape. Areas of interest were subject to an archaeological survey. Results from both the research and survey phases were fed into an open access [online Geographic Information System \(GIS\)](#) linked database of underwater archaeological sites of the Channel and the southern North Sea.

Between 2009 and 2012, archaeologists studied over 150 underwater archaeological sites and collected data from both primary sources and national archives. In each of the three participating countries, one school cooperated with the project: the Toynbee School in Hampshire, England; the Collège Diwan in Guissény, France; and the Sint-Bernarduscollege in Nieuwpoort, Belgium. Sixty-two students and nine teachers were involved and, via e-twinning, worked together on the interactive project, 'Mystery Shipwreck' to discover the shared maritime history of the participating countries.

Given the importance and impact of these conflicts, the interpretation of related heritage should be addressed from three perspectives:

- Knowledge and insight (facts)
- Empathy and solidarity (human potential or impossibilities)
- Reflection and action (Human rights)¹³

Remember that in addition to the maritime heritage, which is a direct result of these conflicts, there is another generated with the passage of time related to the arts, that includes essays, novels, films... And that is perhaps what has contributed most powerfully to the image we have today of these two wars. One of the most powerful elements of the World Wars are the testimonies and individual, human histories behind the important events.

Some inspiration

HOHENSCHOENHAUSEN PRISION, BERLIN (GERMANY)

In 1951, after its founding, the East German Ministry of State Security established the Soviet cellar prison at Berlin-Hohenschönhausen as its central remand prison. In the 1950s, upwards of 11,000 people regarded as obstructive to the communist dictatorship were incarcerated here. [Guided tours](#) are conducted by former prisoners, sharing their own experiences and memories with visitors.

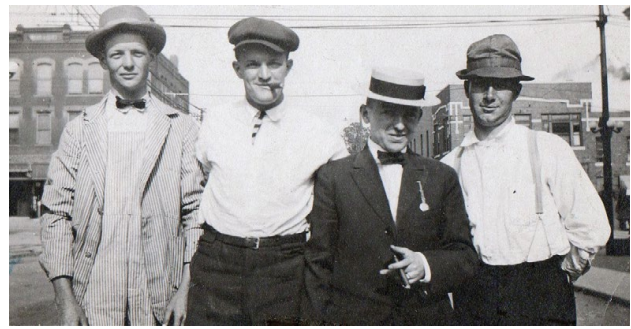
13. UNESCO, *Heritage for peace and reconciliation: safeguarding underwater cultural heritage of the First World War. Manual for teachers.*

WAR HERITAGE IS AT RISK!

Threats to WW I and II heritage¹⁴:

- Low level of public awareness (due to the lack of visibility).
- Location: Sometimes this heritage is far from the shore or at great depth.
- Loss of local historical memories due to the death of survivors, the complexity of addressing related issues and the understandable human need to move forward.
- Scrapping of large metal wrecks. A lot of wrecks have been blown to pieces in order to extract non-ferrous metal. Today metal recovery is becoming an increasingly alarming threat, as the prices for non-irradiated metals, such as that from old wrecks, are rising due to demand in the technology industry.
- Commercial treasure hunting: Treasure hunters usually destroy the wreck to obtain the cargo. Many historical ships have been lost like this, along with the valuable historical information contained within them.
- Deliberate destruction: Some ships and sites have been used by their respective militaries for shooting and combat practice.
- Souvenir hunting from recreational divers (ships from WWI and II are easier to find, not buried or deteriorated to the point of not being recognizable like ancient wrecks).
- Time itself. The passage of time and the actions of the elements can severely damage these boats.

5.4. Migrations



Irish immigrants in Kansas City, Missouri in c.1909. Family photo scanned by Jeanne Boleyn. Public Domain.

Until relatively recently, the main migratory movements in Europe were related either to processes of conquest or colonization.

The discovery of the existence of America undoubtedly marked a turning point and throughout the 16th, 17th and 18th centuries, the migratory wave towards these new lands stands out, mainly from Portugal and Spain.

However, the most important emigration in history takes place between the late 19th and early 20th centuries, in the same direction Europe-America, and is estimated to have involved about 55 million Europeans, with some of the main destinations being the United States, Argentina, Canada, Brazil and Cuba. This wave was mainly caused by socio-economic reasons: overpopulation in Europe and a series of unfortunate events and circumstances as in the case of Ireland, where poor harvests caused several famines.

During World War II, migrations were for very different reasons and the movement of people can be divided into two main groups: deportations and exoduses. It is estimated that between 25 and 30 million people were displaced during the conflict alone, not in search of a better life or new opportunities, but simply as a refuge for their survival.

Migration is currently evolving as a result of the progressive globalization of labour markets and societies. Climate change and current conflicts

14. Idem.

| COUNTRIES | 1851-1860 | 1861-1870 | 1871-1880 | 1881-1890 | 1891-1900 | 1901-1910 | 1913 | 1921-1930 |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|------|-----------|
| IRELAND | 14,0 | 14,6 | 6,6 | 14,2 | 8,9 | 7,0 | 6,8 | 5,9 |
| GREAT BRITAIN | 5,8 | 5,2 | 5,0 | 7,0 | 4,4 | 6,5 | 11,0 | 5,9 |
| NORWAY | 2,4 | 5,8 | 4,7 | 9,5 | 4,5 | 8,3 | 4,2 | 3,1 |
| SWEDEN | 0,5 | 3,1 | 2,4 | 7,0 | 4,1 | 4,2 | 3,1 | 1,8 |
| DENMARK | | | 2,1 | 3,9 | 2,2 | 2,8 | 3,2 | 1,7 |
| AUSTRIA-HUNGARY | | | 0,3 | 1,1 | 1,6 | 4,8 | 6,1 | 1,4 |
| GERMANY | | | 1,5 | 2,9 | 1,0 | 0,5 | 0,4 | 1,0 |
| FRANCE | 0,1 | 0,2 | 0,2 | 0,3 | 0,1 | 0,1 | 0,2 | |
| ITALY | | | 1,1 | 3,4 | 5,0 | 10,8 | 16,3 | 3,4 |
| SPAIN | | | | 3,6 | 4,4 | 7,0 | 10,6 | 6,3 |
| PORTUGAL | | 1,9 | 2,9 | 3,8 | 5,1 | 5,7 | 13,0 | 3,2 |

Table 1 - European emigration rates (annual average per 1k habitants) - source *Ferenczi and Willcox (1929) in Sanchez Alonso, "The age of the Great Migrations" Mediterraneo Economico I*

(war, but also socio-economic conflicts) continue to generate migratory movements that are the focus of the news, political forums and the general population. In 2017, the number of international migrants reached 258 million worldwide, up from 244 million in 2015. In fact, in the 2030 Agenda for Sustainable Development, 11 of the 17 Sustainable Development Goals (SDGs), contain targets and indicators that are relevant to migration or displacement ¹⁵.

Wrecks resulting from the sinking of ships linked to migrations often have a more tragic and emotional burden than other vessels. On the one hand, because of the high number of human casualties that occur, even more so considering that they often carry more passengers than permitted and recorded. On the other hand, because these ships dragged with them to the bottom of the sea the dreams and hopes of numerous people brave or desperate enough to leave everything in search of a better life for themselves and their families.

The tangible and intangible heritage generated by these population movements allows us to

approach the processes of two-way acculturation, the emotional and familiar component of these migrations, the exchange of ideas and products, the opening of markets, the challenges of integration, knowledge and recognition of difference... Fundamental factors to understand our past, our identity and our present. In addition, it offers the opportunity to recover the small stories within the greater picture, which turn those numbers into faces with which to empathize.

The Statue of Liberty – Ellis Island (USA)

When Ellis Island officially opened on January 1st, 1892, the first passenger processed through the now world-famous immigration station was a 17-year old Irish girl named Annie Moore. Here on Ellis Island, you can find the story of Annie Moore and hundreds of others, including your own family's if that is the case.

More info: www.libertyellisfoundation.org

15. Naciones Unidas: <https://www.un.org/es/sections/issues-depth/migration/index.html>

SS Great Britain, Bristol (England)



SS Great Britain. By Rick Crowley. CC BY-SA 2.0.

The SS Great Britain is a British ocean liner launched in 1843. Very advanced for her time, from 1852 she transported migrants to Australia. She operated as a passenger transport for thirty years and between 1882 and 1886 was used for transporting coal. The ship concluded her service in 1933 and was abandoned, but in 1970 she was relaunched in a complex operation and moved to Bristol where she is currently a proud museum ship.

Over her lifetime the SS Great Britain was temporary home to many thousands of people. As a luxury liner she carried up to 252 first- and second-class passengers across the Atlantic. Diaries and letters from the time are shown on her website, proving that no two journeys were the same, and no two passengers alike.

The web also presents the "Explore our Global Stories" project, a huge new database of the passengers and crew members of the SS Great Britain. It charts the origin and journey of over 30,000 of the ship's inhabitants, you can discover passenger's diaries or where the ship was

on a certain date. You can interact with the database when you visit Brunel's SS Great Britain in the Dockyard Museum, plus try it out online to learn more about life on board. You can also search for your name, age or nationality to find people like you that travelled aboard the SS Great Britain, or even find the story of your ancestors.

More info: www.ssgreatbritain.org

5.5. EXERCISE 3. Discovering your transnational assets

We have seen some historical events and scenarios that can link your heritage to other countries or regions, but those were only some examples. Now it is your turn to think about your own heritage and your shared history!

| | | | | | |
|--|--|--|--|--|--|
| Your asset (tangible or intangible) | | | | | |
| Chronology | | | | | |
| Historical period | | | | | |
| Culture/Nation | | | | | |
| ¿Is it related to a relevant historical event? | | | | | |
| ¿Is it related to people's day to day? | | | | | |
| ¿Is it related to a recognizable historical figure? | | | | | |
| To which other region is it connected? | | | | | |
| How is it connected? | | | | | |
| Is there similar heritage in those regions? | | | | | |
| Is that heritage in those regions already activated and/or accessible? | | | | | |

REMINDERS AND NOTES:

6

Find your story

Now that you know the history of your area and its heritage assets, now that you understand how its maritime heritage is interrelated, related to the community, to the environment and to its context, the time has come to refine your perspective and figure out the story that you want to tell.

It has been shown that the more real, intimate and personal the stories, the easier it is to empathize with them. Thus, the experience will be more exciting for your visitors, who will feel greater attachment and involvement. If you think about your own experience, dates and facts are not what we usually remember from a trip; it is those things that have managed to move us or make an impression on us that we never forget. Once you know what historical facts and details you want to communicate, you need to find the best way to bring your story alive.

If you want some help thinking of different perspectives, you can do [Exercise 4](#).

REMEMBER!! Be creative. Analyse perspectives. It has been shown that the more real and personal, the greater the mark that our stories leave on visitors. They may forget the facts, but they will always remember the experience.

- Consider the time that your visitors have.
- Consider why it is important for your visitors to get to know that maritime heritage.
- Look for personal stories and interesting characters that your visitor can relate to.
- Awaken your visitors' curiosity.
- Encourage, as far as possible, active participation.
- Link the past and the present.

STORY OF A SHIPWRECK, EXHIBITION (SPAIN)

The Deltebre I, is an unidentified wreck lost near the Ebro river (Spain) in 1813,

during the course of the Peninsular War. She was a military transport ship.

A small [exhibition](#) was organized with some of the artefacts found on the archaeological excavation. For the texts and catalogue of the exhibition, it was decided to tell the story through the eyes of a fictional but plausible sailor. This small exhibition was a success and toured some of the most important Spanish museums. Sales of the catalogue were also especially good, outside of the exhibition, to fans of marine stories.



Deltebre I exhibition. © Generalitat de Catalunya.

Furthermore, the discovery of several bottles of "fondillón", a well-known Spanish wine, in the shipwreck, also allowed this oenological heritage to be explored and divulged, opening doors for the financing of the exhibition.

<https://www.youtube.com/watch?v=1L-dcCcUrfk> (SPANISH)

HATCH, THE MARY ROSE DOG

The research team of the Mary Rose was able not only to show us the faces of the crew of this exceptional ship, but also the appearance and story of the ship's dog, one of the more popular exhibits at the Mary Rose. So popular that you can even follow him on twitter.

<https://maryrose.org/hatch/#more>

GLASNEVIN CEMETERY MUSEUM, DUBLIN (IRELAND)

Meant to preserve the heritage of past generations, serve the needs of present generations and provide a legacy for future generations. There are over 1.5 million people buried there and they share their stories with the visitors. They have guided tours, education programmes for all ages and offer special tours, re-enactments, hosts talks and other events. You can also explore your family records through their genealogy services.

<https://www.glasnevinmuseum.ie/>

2nd May 1808: One nation, one people, Exhibition (Spain)

In 2008, the bicentenary of one of the most moving episodes of the fight against the French and Napoleon Bonaparte's invasion of Spain (1808) was celebrated: on the 2nd May, the walking population of the city of Madrid fought hand to hand against the invaders.



Francisco de Goya (1814) El tres de mayo. Museo Nacional del Prado, Madrid.

The Community of Madrid commemorated the occasion with an exhibition, generating an immersive experience for visitors. The original exhibits were placed in life-size dioramas that recreated the most important moments of the day, accompanied by various audio-visual elements such as movies, animations of well-known paintings or sounds of struggle, shots and cannons. Around each diorama, a small exhibition supplemented the information with other museum elements.

This exhibition aimed and managed to enable viewers to understand the harshness and cruelty of this episode, beyond the historical facts, recreating these environments for them, placing them at street level and leading them to feel an emotional connection with the protagonists of the day.

<https://www.youtube.com/watch?v=gVHxMM4Wef8>

6.1. Some questions to consider

Whether you want to promote one main heritage site or many, or boost the overall maritime aspect of a destination, there are a number of questions you should consider.

a) Conservation status, initial investment required, maintenance measures and costs.

Whenever we talk about tangible heritage, the first point to consider is its state of conservation because this will condition many other aspects. The passage of time takes its toll, metaphorically and literally. It is very likely that the resource you want to showcase will need prior care. To provide this, you will need the advice of professionals such as architects, restorers and curators, who will help you understand what that heritage resource needs in order to effectively promote and interpret it, and how to keep it in good condition. Remember that heritage is very fragile and needs regular care and attention.

If you want to make it possible to visit an underwater or terrestrial site, you may need to carry out prior research, excavation or cleaning so that the remains can be recognized; if you want to restore a building, you will need to work with restorers and historians to help you preserve its original appearance, and architects to make sure it is safe when adapting it to its new use. Historical and archaeological artefacts may require prior treatment for their exhibition (such as the desalination of an underwater archaeological object or the cleaning of a painting) and also special conditions in order to be exhibited. Others, such as historical documents, may be more convenient to digitize or make facsimiles, given their fragility.

b) Carrying capacity of the heritage site and the environment

In line with the previous point, the state of conservation of the heritage site and its maintenance needs, involve considering its carrying capacity, that is, the number of people that can visit your resource without having an adverse impact on it or damaging it (short and long term speaking). If promoting a heritage site affects the natural environment, the carrying capacity of the natural environment must also be considered in order for it to become a sustainable resource.

Furthermore, mass tourism can have a negative impact on visitor experience. Quantity and quality do not always go hand in hand.

Remember that heritage is the most important thing and that a site should never be interfered without being sure beforehand that all the necessary resources are available for its conservation. Also remember that not everything can be exhibited or visited directly. However, with a little creativity and sometimes help from new technologies, there are several solutions (some of these will be looked at in the tools section) that allow extremely fragile resources or those with very difficult access to be promoted.

ISLA GROSA PROJECT, MURCIA (SPAIN)



Underwater trail ©Isla Grosa Project.

Isla Grosa is a small Mediterranean island with a lot of history. At its feet is the site of one of the most important Phoenician ships that has ever been found in terms of its cargo. During the summer of 2014 an underwater trail was created for recreational divers. Because the island is a protected environment, visits were restricted to a maximum of two visits per day in groups of up to 8 divers. However, diving in small groups and in such a privileged environment was a unique and very special

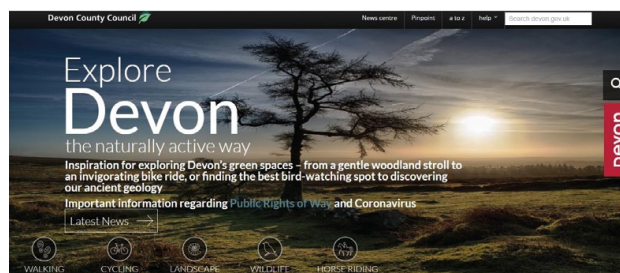
experience for visitors, who gave the visit scores 9.5 out of 10 on average in a satisfaction survey.

Isla Grosa is also a good example of the importance of interpretation. The seabed did not hold any heritage remains, since they were all placed in a museum after the excavation. The diving tour was intended to be an extension of the museum, recreating the elements of the excavation and explaining where and how the main pieces were found and inviting the divers to visit the museum afterwards. 87% of the divers visited the museum in the following days and their feedback was extraordinarily positive.

c) Accessibility and infrastructure

How will your visitors travel to the destination? And to the heritage site? If the site is far away from the main urban centres, transport is essential and if it is off the main tourist path, it is very important for the information to be accessible. On many occasions, tourists concentrate on the best-known areas, but good promotion, a good website or something as simple as free training talks for tour operators, taxi drivers and bus drivers can bring new visitors. Furthermore, complicated access because of the surrounding environment will require careful study to direct you towards the right audience, and to inform your visitors of the difficulty of access in order to avoid misunderstandings, frustrations and bad experiences.

The infrastructure and commercial network of the surrounding area are also very important: transport, restaurants, cafes, hotels, car parks and other services must always be considered when turning a heritage asset into a tourist destination. Having this infrastructure, creating a network of contacts, making them aware of the importance of this heritage and encouraging joint actions can be a fundamental key to your success.



Explore Devon Website.

EXPLORE DEVON WEBSITE (ENGLAND)

The Explore Devon website is a way to signpost opportunities for residents of and visitors to the region to access and engage with, the natural environment and landscapes. Soon it will include accessible historical and archaeological sites. It provides information about the places/routes, how to get there, facilities, terrain and accessibility.

Although the website does not have a specific section for heritage or maritime heritage, it does have a very effective search engine that shows us routes and activities related to the Devon coast and its maritime and heritage sites such as the Jurassic Coast World Heritage Site, the South West Coast Path or Drake's Trail.

<https://www.explored Devon.info/>

THE HARBOUR FOR ALL JOURNEYS (FRANCE)

The Harbour for all Journeys is the name of a selection of visits and experiences in and around the city of Saint Nazaire. It is supported by a website (that is a portal for all the tours on offer).

Thanks to the website, heritage-related visits doubled between 2016 and 2017: 1300 --> 2400 visitors in 1 year. The average visitor count of the website is 21000/month, with peaks at 42000 in

July and 56000 in August. Online ticket purchase is 20% of the total sales.

<http://www.leportdetouslesvoyages.com/en/>

DEVON MUSEUMS GROUP WEBSITE (ENGLAND)

The Devon Museums Group, representing all the museums in the region, was formed over a decade ago. With Museums, Libraries & Archives Council Renaissance Programme funding, the group established the Devon Museum website as the official gateway to Devon museums. 75 of the region's museums are currently accessible through the site.

Devon's museums can be located by town/place or on a map. Their collections, themed exhibitions and archives are summarized. Details of how to find or contact the museum and admission prices are given.

<https://www.devonmuseums.net/>

d) Listen to the local community

We have already seen that the local community can be a fundamental ally both to know your resources and to develop your proposals. Take into consideration its voice, its opinion and its needs. Something as simple as organizing informative and participatory meetings with the different agents involved or who may be affected by your proposal, can not only generate interesting alliances but also provide unexpected resources. On the other hand, integrating the heritage site into the community and generating a feeling of ownership, are key points without which it is very difficult for an initiative to achieve its full potential.

Assessing the impact of your proposal on the community is a very important part of your project. Finally, as positive as your visitor's experience of the heritage site may be, if their overall experience of the destination is not satisfactory, your results will be affected.

e) Legal and ethical responsibilities

Before intervening on a heritage resource, you must know the relevant legislation to comply with the necessary steps and requirements both at a heritage and an environmental level, where applicable. Similarly, there are certain ethical guidelines that you should be aware of. In the resources section you will find links to some of the main UNESCO and ICOMOS documents.

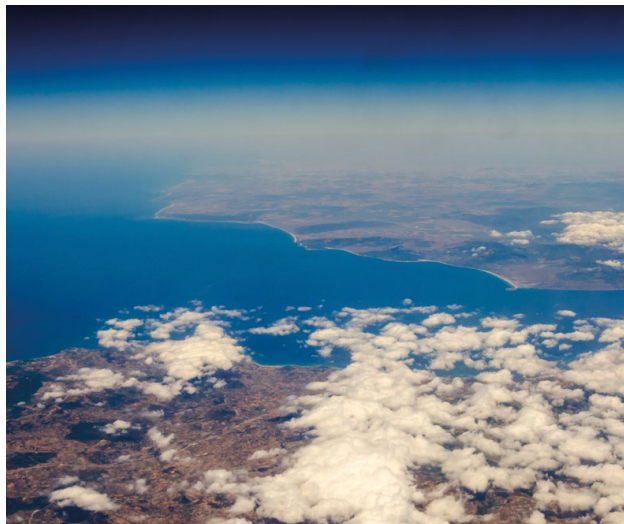
f) Establish key performance indicators

Heritage management is not an exact science and there is always room for improvement. Set realistic goals and key indicators to see if you reach your goals and set others that allow you to find potential areas for improvement. Some of these points may be the number of visitors or their degree of satisfaction, the state of conservation of the heritage site or be related to the performance of your website.

From the beginning, establish a system that allows you to collect this data and maintain communication with your visitors and your main stakeholders.

Now may be a good moment to gather the information about your chosen asset and to apply what we have learned in this chapter. You can start working with Exercise 5, or you continue reading and see a practical application to a case study.

6.2. Practical application of these issues to a case study: The Herakles Project of the University of Cadiz



Strait of Gibraltar. Special Area of Conservation in Spain.
ID: ES0000337.

The Herakles Project has just started at the University of Cadiz. It has been expressly designed with the intention of integrating the community and the local population, following UNESCO guidelines for the protection of underwater cultural heritage. This project, already approved, will be run in Algeciras (Spain) over the next few years, in a collaboration between the University of Cadiz, the Algeciras Museum, the Gibraltar Strait Natural Park, the Algeciras Town Hall and SMEs (such as diving centres).

CONTEXT

The Bay of Algeciras is a privileged maritime space, located in a strategic naval crossing that allowed for intense occupation with clear maritime links, both in ancient, medieval and modern times, the setting of a continuous struggle for naval control of the Strait.

However, of the nearly 125 archaeological sites known in the area dating back to different times, only 4 are underwater, and of them only 1 can be considered a shipwreck. Knowledge and documentation of the Underwater Archaeological

Heritage in these waters is scarce considering the historical importance that the sea and nautical activities have played and still play in the Bay.

It is a heritage area that is also subject to a number of high-impact risks such as port activities (dredging), industrial activity (building work) or tourism (looting due to lack of knowledge), urban development and changes that these actions can cause in the marine environment.

THE HERAKLES PROJECT

The main aim of this project, following the premises listed above, is to document, research and showcase the underwater archaeological heritage of the Bay of Algeciras. In light of this, the proposed objectives are the following:

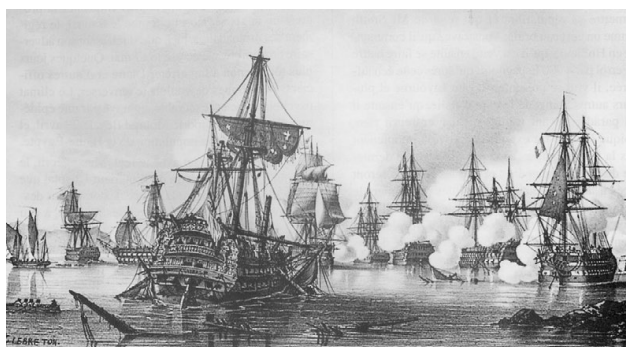
1. **Analysis of anchoring areas and nautical activity in the Bay of Algeciras from a diachronic perspective.** The Bay is understood as a space for mooring, exchange and maritime commercialisation. These activities left their mark through archaeological evidence in contexts of mooring grounds or shipwrecks.



Antoine Léon Morel-Fatio (19th century) The battle of Algeciras. Château de Versailles. Public Domain.

2. **Identification and evaluation** of urban, industrial or climate change threats to the conservation of this heritage asset.
3. **Study and definition of values of use and benefit for tourism purposes of the Underwater Archaeological Heritage** of the Bay of Algeciras. For this purpose, a pilot project will be carried out for the creation of an archaeological site

which can be visited by means of an underwater archaeological park. This will be carried out based on different archaeological, tourism and heritage criteria with the aim of consolidating a public education space and a sustainable tourism resource that takes into account local agents and SMEs related to the cultural and leisure offer of recreational diving in the area.



Louis Lebreton Victoire française d'Algésiras, 6 juillet 1801.
Public Domain.

The methodology applied to achieve the objectives set out above will necessarily be multidisciplinary in its application and transdisciplinary in its interpretation. In this sense, there is a team of young researchers from the UCA, accompanied by national and international collaborators with extensive experience in similar projects.

The working methodology is divided into three main stages for each of the specific objectives.

It must also be pointed out that the project will have a GIS architecture database that will allow the data to be managed, geolocated, interrelated and analysed. This will allow data layers to be produced that are necessary for the project's mapping results and can be of use for further dissemination uses.

The following methodology will be applied for **OBJ-1**.

Stage 1.1 Prior documentation

In this stage, archive and museum work, consisting of objects of underwater origin in museums being reviewed, will be prioritized with the intention of assigning these objects a spatial

origin and specifying their nautical interpretation. The prior documentation stage includes tasks such as interviews with local fishermen and divers, a review of local news in the press, historical findings, etc. The results of this first stage will facilitate the interpretation of subsequent data and allow for the reliable planning of underwater tasks.

Furthermore, the areas of the Bay of Algeciras have been zoned according to different issues, mainly accessibility and threat. In this regard, areas with a higher degree of threat will be particularly emphasized.

Stage 1.2 Archaeological prospecting with geophysics instruments

In this stage of the study, a geophysical survey of various areas will be carried out that will allow the heritage sites to be mapped and a first set of anomalies and results to be obtained that must be checked by underwater archaeological intervention later on.

This task will be supported by agents of the Hydrographic Institute and the Spanish Navy.

Stage 1.3 Analysis and treatment in central services

After the geophysical survey stage, we will proceed to a period of interpretation, analysis of the data and its comparison with the historical - archaeological information previously collected. This work will be carried out by the UCA Underwater Archaeology team, and specific software will be provided for the processing and treatment of the data.

Stage 1.4 Planning and development of an underwater archaeological campaign of archaeological surveys

Once the areas of interest have been defined and based on the results of geophysical surveys, with the first results of the study of threats and risks for the conservation of the underwater archaeological heritage site, an underwater archaeological study will be carried out using the sondage of various

shipwrecks and areas of interest in order to better document them and to make a first reliable assessment of their conservation status and archaeological potential.

Stage 1.5 Analytics and material study

Within the study of the sites, archaeometry sampling will be carried out with a double objective: to evaluate the conservation status of different elements and to specify aspects related to the chronology, origin or type of archaeological material documented.

Stage 1.6 Interpretation, publication and generation of data layers

A final stage has been defined whose main objective is the interpretation and publication of the data obtained during all phases of the OBJ-1.

The following methodology will be applied for OBJ-2.

Stage 2.1 Identification of threats to the conservation of UAH

Underwater Archaeological Heritage is subject to various threats, which specifically occur in the study area. Various types of threats can be documented, both anthropic (dredging, fillings, works, looting), and natural (sea erosion, sedimentation, change of the coastline, oceanographic conditions). Thus, these threats will be identified and mapped in order to generate data layers that can interact in the GIS system with the layers of archaeological data.

The working methodology will be based on the prior identification of threats and an assessment based on conservation and restoration parameters of the degree of deterioration or risk they may pose to the UAH.

Stage 2.2 Historical study of port structures and their effect on UAH

A detailed study will be carried out on the effect that the structures and working of the Port of Algeciras

have had on UAH. It is an eminently bibliographic and archival study that will look critically at the port operations of the city of Algeciras and other areas of the Bay, analysing the effectiveness of archaeological works, when they have been carried out, corrective measurements proposed by the administration and the current state of any heritage affected by the works.

Stage 2.3 Interaction of the data with the layers generated in OBJ-1

One of the final stages of this objective is to find relationships between the archaeological data developed in OBJ-1 and the data on the threats and risks to UAH in the Bay of Algeciras. This will be carried out using various GIS spatial analyses, which will evaluate the risk of conservation of inventoried sites using spatial algorithms of proximity analysis, fuzzy membership and dispersion. The results will make up a working document for the relevant managers and administrations.

Stage 2.4 Communication of the results to stakeholders

An annual workshop-type briefing will be held with the affected institutions in which they will be informed of the progress of the work and the results thereof. A working document will also be provided at the last meeting for the proper management of the UAH documented during the project.

The following methodology will be applied for OBJ-3.

Stage 3.1 Risk and Potential Assessment Study for the Creation of an Underwater Archaeological Park

Underwater Cultural Heritage (UCH hereafter) is framed within a very specific medium and conditions, which brings huge advantages and important limitations. Knowing and understanding these specificities, and their associated problems, is essential when posing the objectives and strategies for its research, conservation and dissemination.

In order to ensure the integrity and safety of both the heritage and the natural environment in which it is located, potential risks and threats will be studied, both to the heritage site and to the natural environment. In this stage, variables related to conservation, accessibility, the most appropriate forms of supervision, the granting of museum status, the heritage value, etc will be considered. This comprehensive analysis, together with a thorough review of the methods and techniques used to date in various projects that promote underwater heritage, will allow a programme to be created that meets the needs of the selected site and ensures its adequate dissemination with minimal impact. In this sense, a pre-dive protocol will be created (based on UNESCO's Code of Ethics) that gives the visiting diver the knowledge necessary to make the visit without altering the heritage or the natural environment.

Furthermore, although the experience of observing the heritage in its original setting has proven to be very enriching for visitors, the resources for the transmission of information must conform to the specificity of the environment. A previous study of the area, the site and its natural environment will make it possible to evaluate the cultural potential of the area and design the necessary teaching tools.

Stage 3.2 Field analysis of target audiences, actors and collaborators and SWOT

In order to create a diver awareness and training programme, prior to the dive, the few public studies already carried out in this regard will be used and new ones will be carried out through surveys. This will allow the profile of the visiting diver and his potential needs and deficiencies to be accurately defined.

In addition, other dissemination activities will be designed for this heritage site to make it also accessible to the non-diving public. The collaboration of local agents, from both the public and private sectors, will be sought for the running of these activities.

In this sense, a prior study will be carried out on the potential of this cultural, economic and social impact, in order to identify and establish a cooperation with the actors involved that will be completed with the realization of a final SWOT analysis of all the information collected with the aim of designing the best strategy.

Stage 3.3 Public-private participation programme for resource generation

With the results of prior studies and once the main agents and stakeholders involved both at the public and private levels have been identified, a series of meetings and working groups will be held in order to establish relationships, create synergies, define main outreach strategies and create a sustainable and cooperative end programme with a high real impact on community development.

Stage 3.4 Implantation of the pilot project

In this stage, the site will be set up as a visitor attraction and the teaching material necessary for it to be understood will be drawn up. An underwater route will be installed, guided by ropes and accompanied by panels. Various complementary museum techniques will be applied that will depend on the prior studies carried out and the conditions of the site, always aiming for it to be best understood, appreciated and valued with minimum impact.

The dive centres involved will be worked with in advance to ensure that their staff have the training and sensitivity necessary for their collaboration. Visits to the site will be made in collaboration with the dive centres under the supervision of an archaeologist.

An information booklet will be drawn up that captures the history and characteristics of the site and a best practice guide for divers on Underwater Cultural Heritage.

The objective of this guide is to help the recreational diver understand the value of Underwater Cultural Heritage, to know the current legislation and

general European guidelines for its conservation, in accordance with UNESCO's Code of Ethics for Divers on submerged archaeological sites.

A series of complementary activities will be carried out with the non-diving public with objectives such as: conferences, talks, children's workshops, etc.

Stage 3.5 Evaluation of objectives and results and recommendations for the future

This project will close with a final assessment of the experience, impact and possibilities for the future.

This evaluation and the final report will be addressed from two perspectives:

a) Quantitative and qualitative final results: statistics related to the number of visiting divers, agents involved, direct and indirect economic impact, etc.

b) Prior to the implementation of the project, a number of key performance indicators will be established to be monitored throughout the running of the project: presence in the press and social networks, satisfaction surveys, assessment of divers' knowledge after the dive, carrying out semi-structured interviews with the public and private agents involved, monitoring of the possible anthropic impact on heritage etc.

6.3. EXERCISE 4. Discover your history. New perspectives

You already have a general, objective knowledge of the event or group of events in which the history of your maritime heritage is framed. Now:

1) What aspects of history, in relation to your heritage resource, seem most surprising, exciting or curious?

- _____
- _____
- _____
- _____
- _____

2) What makes this story special? Why should people get to know it?

3) Who were the most important human players in relation to the heritage site you want to showcase?

- _____
- _____
- _____
- _____
- _____

4) What happened to them? What were they like? How did they live? What did they feel?

5) In what ways could we empathize with them?

6) Think about the other people who were affected (common or lesser-known people) and ask yourself the same questions.

- ---
- ---
- ---
- ---
- ---

7) Through what sources do we know about and can we tell this story?

- ---
- ---
- ---
- ---
- ---

8) Are there testimonials from survivors or actual chronicles of these events?

- ---
- ---
- ---
- ---
- ---

9) Are there related anecdotes or legends? How did they originate?

10) From what perspective could this story be told?

- ---
- ---
- ---
- ---
- ---

11) What fundamental values can we learn from it? Could we apply them today?

- ---
- ---
- ---
- ---
- ---

12) Who is your main audience going to be?

13) How can you better tailor history and language to your audience interests and needs?

- ---
- ---
- ---
- ---

14) Is there any way to make your story more relatable and participatory, diverse and inclusive?

15) What would you like your visitors to remember?

6.4. EXERCISE 5: Start working with the heritage resource. Prior issues

1) List the heritage resource or assets that you want to promote and mark the current state of conservation.

- | | |
|---------|---|
| • _____ | Perfect/Very good/ Good/ Quite degraded/ Degraded |
| • _____ | Perfect/Very good/ Good/ Quite degraded/ Degraded |
| • _____ | Perfect/Very good/ Good/ Quite degraded/ Degraded |
| • _____ | Perfect/Very good/ Good/ Quite degraded/ Degraded |
| • _____ | Perfect/Very good/ Good/ Quite degraded/ Degraded |

2) Do they need any actions prior to being showcased?

- a. Restoration
- b. Cleaning
- c. Research
- d. Archaeological survey/documentation
- e. Architectural evaluation
- f. Adaptation according to local legislation
- g. Others

- _____
- _____
- _____
- _____
- _____

3) What is the total cost of those prior actions?

4) What will the annual cost of maintaining the heritage resource be?

5) How will it being open to the public affect its conservation and maintenance?

6) Do any special measures need to be taken?

- a. Visitor-capacity limited.
- b. Specific visits.
- c. Visits need to be supervised.
- d. Other

7) What threats is your heritage resource facing at this time and what actions can counter these threats?

| | |
|--|--|
| | |
| | |
| | |
| | |
| | |

8) Does the development proposal respect the identity linked to the heritage site and the local community?

a. Yes

b. No. (Then you should work on a different proposal)

9) What is the degree of accessibility?

| | | | |
|------------------------|------|--------|-----|
| Arrival at the town | High | Medium | Low |
| Access to the resource | High | Medium | Low |

10) Accessibility in case of a wreck:

a. How far is it from the coast? _____

b. What depth is it at? _____

c. What temperature is the water during the year? _____

d. What is the degree of visibility? _____

e. What is the degree of difficulty of the dive? Expert/High/Medium/Low

f. Does it require a specific qualification?

· Yes _____

· No

g. Are there dive centres nearby that can manage the visit? (Transportation, equipment rental, etc.)

· Yes _____

· No

11) Is the heritage site located in a natural environment?

- Yes _____
- No _____

12) If so, what impact will developing the site have on the environment? High/Medium/Low**13) What impact will the visitors have? High/Medium/Low****14) Is there sufficient infrastructure in place and is it of a good enough quality to generate a positive overall experience? (transport, accommodation, restaurants, etc.)**

- Yes _____
- No _____

15) List ten key performance indicators to monitor and evaluate the status of your heritage site, the surrounding area and visitor experience, and ten complementary actions that can be used to carry out this monitoring (e.g. surveys, periodic impact reports or visitor count).

| | |
|---------|---------|
| ✓ _____ | → _____ |
| ✓ _____ | → _____ |
| ✓ _____ | → _____ |
| ✓ _____ | → _____ |
| ✓ _____ | → _____ |

7

Tell your story

You already know your target audience, your resources and infrastructures, the history of your area, the maritime heritage site's state of conservation and needs. You know what message you want to send to your visitors and how you want to build your presentation. All you have to do is get down to business. Below you will see some of the especially relevant and interesting possibilities related to maritime cultural heritage. Remember that each resource is unique so no model should and cannot be directly extrapolated. But we are confident that with these ideas you will find the final inspiration you need.



7.1. Heritage built on land

Historical buildings are always interesting elements to see, even if only from the outside. In addition, these buildings often offer excellent views of the landscape and are frequently in natural environments with a high appeal. The opportunities they offer are numerous and range from them being established as elements of interest to their complete rehabilitation, through endless options such as their integration into routes, their occasional opening for guided tours or at certain times of the year, giving them museum status or adapting them to other uses. Here are some suggestions with relevant examples:

• Routes

These are a very good option, especially if heritage is integrated into the environment. They can be a simple and economical way to bring the heritage site to the public's attention, even when it cannot be visited or restored. Routes can be large-scale, even international (such as European cultural itineraries), or a smaller-scale, such as the one we have seen in Montebuciero (Cantabria, Spain). They can be done on foot, by car, by bike, by boat, by train... and can be physical routes, marked and signposted or can even be traced through an app on a mobile phone; based on heritage elements, historical characters or events and even authors or literary works. Your imagination is the limit.

SPANISH GREEN WAYS (SPAIN)

In Spain, a large number of obsolete railway tracks have become greenways: Trails that offer routes through different heritage environments and that also often include heritage and maritime elements. It is a very interesting solution especially in the case of steep or difficult to access places.

More info: <http://www.viasverdes.com>
(Spanish)

OPEN CRUISES. LOIRE ESTUARY (FRANCE)

These [cruises](#), departing from the Loire estuary, offer various routes and activities that allow you to get to know the maritime heritage and identity of Saint Nazaire (France).

More info:
www.leportdetouslesvoyages.com

Council of Europe Cultural Itineraries



Destination Napoleon Cultural Route
© Council of Europe.

Launched by the Council of Europe in 1987, the Cultural Itineraries demonstrate, with a journey through space and time, how the heritage of the different countries and cultures of Europe contributes to a shared and living cultural heritage.

<https://www.coe.int/es/web/cultural-routes>

HIDDEN CITY AND HUNTFUN, LONDON (ENGLAND)

These are two examples of very engaging interactive routes. Both websites offer you a journey across the city, solving a trail of clues sent to your phone, in a treasure hunt/puzzle-solving style experience. Through this adventure you will discover galleries, pubs, museums, and secret locations; and find pause for food and drinks at incorporated rest points.

- Hidden City [website](#)
- Huntfun [website](#)

- **Open the heritage site to the public (when safe) without a specific museum project**

Abandoned but cared for buildings also have their charm. Especially if the surrounding area is also attractive. By posting signs in the right places and with a little maintenance, buildings such as castles, fortifications or lighthouses can be visited and appreciated. Although these resources do not generate revenue on their own, when properly promoted, they can increase the number of visitors to a destination, who will invest money in other services and activities.

SAN FELIPE CASTLE, FERROL (SPAIN)

In 1557 the construction of the castle began, sponsored by Philip II, from whom it takes its name. All in all, the building that is preserved today is from the 18th Century, when its last major renovation took place. It is the most important military construction in Ferrol and part of a triangle of fortifications that made the Ferrol Estuary impregnable.

Although the San Felipe Castle does not have museum status, it is open to the public. Visitors are surprised, both by its structure and by the beautiful views of the estuary that can be seen from its location.

More info: visitferrol.com

- **Giving museum status**

Classics never go out of style. Turning a heritage site into an exclusive museum or one dedicated to a wider spectrum is always a great way for it to be brought to the attention of and integrated into the community, whether it is a building or a construction complex.

FORT NAPOLEON, OSTEND (BELGIUM)



Fort Napoleon by Donarreiskoffer. CC-BY-SA-4.0.

The Fort of Napoléon in Ostend was built by Napoleonic troops in anticipation of a future invasion of England. From then until now it has had multiple uses. In the First and Second World Wars it was used by the German occupying forces, while today it is a museum and, above all, a luxury restaurant where you can dine overlooking the port, the sand dunes and the lighthouse of Ostend.

<https://www.fort-napoleon.be/en>

MADEIRA MILITARY MUSEUM (FUNCHAL), MADEIRA (PORTUGAL)



Photo: Carlos Pinto.

The [Madeira Military Museum](#) features various collections of weaponry from the 18th century to the present day, as well as the progression of the construction of the Saint Lawrence Palace (Palácio de São Lourenço in Portuguese), where the museum is located. The museum contains artefact from the Napoleonic Era, Spanish Armada & World Wars.

More info: cultura.madeira-edu.pt

PORTSMOUTH HISTORIC DOCKYARD (ENGLAND)

This shipyard is part of the Portsmouth Naval Base and is open to the public. It offers a variety of historic buildings and vessels such as HMS Victory, HMS Warrior, and HMS M.33. It also includes the National Museum of the Royal Navy.

Activities include exhibitions, learning about shipbuilding techniques, a laser quest, conferences, and they host other events and celebrations such as birthdays or weddings.

<https://www.historicdockyard.co.uk/index.php>

FORT DUNREE MILITARY MUSEUM, INISHOWEN (IRELAND)



Fort Dunree by Alistair Cunningham. CC-BY-3.0

Situated perfectly to tell the story of the history of Lough Swilly and the part it played in the Napoleonic era and the two World Wars, the stunning natural beauty

and abundant wildlife are drawing increasing numbers of visitors to one of Inishowen's most beautiful and peaceful locations.

Here we can visit the "Rockhill Collection"; a portion of an extensive private collection of military memorabilia. It also contains examples of military equipment, uniforms and rank insignia of other nations who have served alongside Irish soldiers on UN, EU, ECMM and NATO led missions.

Fort Dunree also houses a Wildlife Discovery Room, hosts yoga classes, art exhibitions, and has space to hire for private functions including weddings. Here many different activities take place related to wildlife, walks, sports as kayaking or scenery; it hosts different kind of events such as exhibitions or professional meetings, and it is even part of the heart and lives of the community through wedding events, charity cancer races, activities meant for the youngest and a lovely meeting point-coffee shop.

<http://dunree.pro.ie/>

• Restoration for other use

Historic buildings are unique, special places with a lot of history and personality, which can be a perfect setting for hotels, restaurants and many other activities.

FANAD LIGHTHOUSE, DONEGAL (IRELAND)

Fanad Lighthouse is situated on the northern coast of the Fanad Peninsula in North Donegal and it is one of three signature points in Donegal on the Wild



Fanad Lighthouse by Michal Osmenda. CC-BY-SA-2.0

Atlantic Way. It is a historical lighthouse turned into accommodation and is key in getting to know the maritime history of this beautiful Peninsula, offering a wide range of activities to enjoy the "rich and vibrant maritime history" and a totally unique guest experience.

Among the activities offered on the [website](#), there is an interpretation centre and you can book for the Fanad Lighthouse Tours. An "amazing journey of discovery" where you will learn about the light and aids to navigation past and present, stepping back in time and hearing stories about lighthouse-keepers in days gone by and climbing to the top of the tower for spectacular views of land and sea.

They offer golf and many other activities such as water sports, biking, guided walks across Knockalla mountain, visiting Lough Swilly shore and Murrin Hill, the Sliabh Liag mountains or the 16th century Doe Castle; and host many different kind of events such as a celebration of Scottish Viking heritage where the Jarl (chief Viking) and his guizers will sing their "Up Helly Aa" song, in full Viking dress, followed by a torchlight procession from the Lighthouse to the Tavern, lectures or festival openings.

Facebook: <https://www.facebook.com/fanadlighthouse>

Madeira fortresses

SAINT JOHN THE BAPTIST FORT (FUNCHAL), MADEIRA (PORTUGAL)



Funchal, Fortaleza do Pico ©Victoria Parfentiev.

The Saint John the Baptist Fort, also known as [Pico Fortress](#), was built in the early 17th century as part of the city's defence system against the frequent attacks by corsairs. It has become one of the landmarks of Madeira island. The Radio Telegraphic Station of Funchal was installed here, which became the Naval Radio Telegraphic Station of Funchal. With the countless antennas that were put up then, the people of Funchal started calling it Pico Radio (Radio Peak). This venue has recently undergone some rehabilitation and restoration work, integrating a multipurpose area, used for concerts and conferences, as well as a cafe with a superb view over the Bay of Funchal.

ST. JAMES FORTRESS (FUNCHAL), MADEIRA (PORTUGAL)

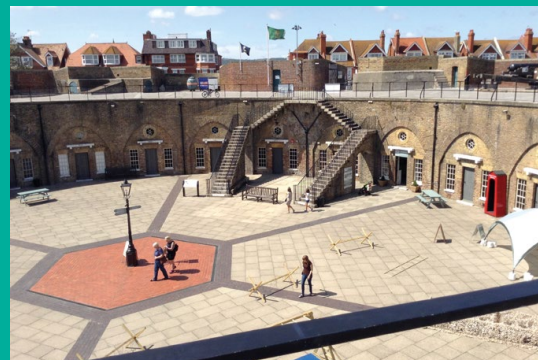
[St. James Fortress](#) is an urban fort of military-style architecture influence located in Funchal's Old Town. It dates back to the 17th century and was built to defend the port. From 1992 to 2014, the St. James Fortress hosted the Contemporary Art Museum of Funchal, which, in 2015, was transferred to Casa

das Mudas Arts Centre, in Estreito da Calheta, on the west side of the island. The restaurant opened in 2001.

More info: www.visitmadeira.pt

EASTBOURNE REDOUBT (ENGLAND)

In 1803, Napoleon had suppressed Italy and Austria and was preparing to invade Britain. In response to this threat the British Government began a massive building programme to defend the south coast, including three circular fortresses at Eastbourne (1804-1810), Dymchurch and Harwich. Nelson's victory over Napoleon at the Battle of Trafalgar in 1805 ended any risk that Britain could be invaded. The Redoubt slowly fell into disuse.



Eastbourne Redoubt by Jhsteel. CC-BY-SA-3.0.

This beautiful place had many different uses: barracks and a store for munitions. London Diocesan Church's annual camp (1904-10), headquarters and temporary jail during WWI, storage during WWII, a Model Village, an Aquarium and a Music Garden until it was vandalised in the 1970's, and an exhibition space for the Sussex Combined Services Museum. Today it is a newly refurbished cinema.

<https://www.eastbourneredoubt.co.uk/>

Paradores Nacionales (Spain)

Paradores de Turismo is a Spanish public hotel chain under the General Directorate of State Heritage. It has 97 hotels distributed throughout Spain and a franchise in Portugal. Its hotels are located in emblematic buildings of historical, artistic or cultural character and several of them are listed as Sites of Cultural Interest or are part of protected historical complexes. In addition to establishments in nine World Heritage-listed cities, more than half of the hotels are located in monument complexes, and many others allow you to stay in national parks and the most interesting natural areas in Spain.

Today, more than 4,000 professionals work at Paradores. In 2018, the company had a turnover of 252,669,043 Euros, 51% from accommodation, 46% from its restaurants and 3% from other activities.

More info: www.parador.es

7.2. Built heritage underwater

Changes in sea level, coastal dynamics, alteration of river courses, creation of artificial reservoirs or natural disasters such as earthquakes, can bury buildings and even entire cities. Examples of this include Alexandria in Egypt, Atlit Yam in Israel, Lion City in Quiandao Lake (China), or Port Royal in the Caribbean. The complexity of addressing the management of these sites is extreme, due to the enormous amount of resources required for their research, restoration and development. However, they are full of possibilities. One-off visits, virtual reconstructions, routes or archaeological parks are some examples. The options are diverse, and the attractiveness and fascination these spaces have on visitors, unquestionable.

DIVING IN ALEXANDRIA (EGYPT)

Visitors can explore ancient artefacts left by everyone from the pharaohs to WWII pilots.

According to the PADI website, [diving around Alexandria](#) can be categorized into four different dive types.

- In the Eastern Harbour and near to the shore, divers can discover ancient ruins from the pharaohs, Romans and Greeks. The most popular dive site in the area is Cleopatra's Underwater City which is full of sphinx statues and Roman columns.
- To the east of the city, a couple of shipwrecks from the Napoleonic-era Battle of the Nile offer an interesting diversion for advanced divers. For beginners, the shallow wreck of a WWII airplane gives a glimpse of the area's modern history.
- Further out, Omu Sukan is Alexandria's premier wildlife dive.
- Finally, three hours west of Alexandria, the Siwa Oasis gives divers the chance of a freshwater dive in the middle of the Sahara Desert. This dive can be combined with an overnight trip to a Bedouin village for a fascinating excursion.

Diving in Alexandria is coveted by history buffs but can also be a challenge. Visibility in the area is often less than five metres. In addition, government permits must be obtained prior to diving. The governing agency often changes the rules for the permits without notice if they fear divers are collecting artefacts for private collections.

Check the [Underwater museum project](#).

THE UNDERWATER ARCHAEOLOGICAL PARK OF BAIÆ, A ROMAN CITY IN NAPLES (ITALY)

The Baia underwater archaeological park, located north of Naples (Italy), belongs to the volcanic complex of Campos Flegreos. Baia was a famous coastal city, highly appreciated in ancient times for its temperate climate and beautiful surroundings, as well as for the therapeutic properties of its mineral waters. It was a popular place among Roman aristocracy and the imperial family until the 3rd century A.D., at which point an earthquake caused the city to collapse. Now, the remains of the luxurious villas, imperial buildings and the port are submerged along the coast; Alongside them you can also see remains of more modest residences, private baths, the so-called tabernae and all those structures that characterized cities of the Roman era.

"In Pozzuoli and Baiae, in the Gulf of Naples, villas, mosaics, baths, streets, houses and harbour structures of the Roman period were submerged by the sea, as a result of the volcanism.

This unique environment, severely looted over the years, has been included in a Marine Protected Area since 2001. Since then, the Soprintendenza Archeologica has carried out some research and documentation works, while the Istituto Superiore per la Conservazione ed il Restauro has experimented with new techniques for the conservation of the underwater structures.

Public access has been made possible with the opening of underwater archaeological trails, and through the involvement of the diving instructors active in the area, appropriately trained".

Michele Stefanile [Underwater Cultural Heritage, Tourism and Diving Centers: The case of Pozzuoli and Baiae \(Italy\)](https://unora.unior.it/retrieve/handle/11574/138652/28141/Stefanile%20M%20-%20OUCH%20Tourism%20and%20Diving%20Centers%20-%20Pozzuoli%20and%20Baiae%20-%20IKUWA%20V%20-%2020213-224.pdf).²⁰

Dive sites: Sunken Nymphaeum, Portus Julius, Pisonian Villa, Villa Protiro, Smokey Reef, Villa by the Aragonese castle, Maritime Villa, Tower of Miseno Lighthouse and Nativity Scene.

Depth oscillates from 5 to a maximum of 13 metres; therefore, diving here presents a low level of difficulty and it is suitable both for snorkelling and scuba diving.

More info: www.centrosubcampiflegrei.it

7.3 Vessels that have survived the passage of time

Here we refer to vessels (ships and submarines) that are still active, have just been withdrawn from service or have been abandoned in some dock or shipyard waiting to be found a use, capable of staying afloat. This type of ship strongly attracts the attention of visitors and combines tangible and intangible heritage, physical structures and the associated way of life and sailing, in a very particular way. Here are some of the main ways we can preserve them and for them to continue to be appreciated.

- **Keep them in use, making them accessible to the public**

Historical ships that continue to sail keep heritage alive in many different ways: they retain their

20. <https://unora.unior.it/retrieve/handle/11574/138652/28141/Stefanile%20M%20-%20OUCH%20Tourism%20and%20Diving%20Centers%20-%20Pozzuoli%20and%20Baiae%20-%20IKUWA%20V%20-%2020213-224.pdf>

original shape and in it the footprint of riverside carpenters, craftsmen and naval architects; they remind us of the primal function for which they were designed, require the knowledge of trades already forgotten for their repairs and a nautical knowledge different from the current one and allow us to get to know what life on board would have really been like. Keeping them sailing, alive, offers added value to the experience of their visitors, either by watching the regattas of large historic ships from land, visiting them while moored, travelling in them or even being part of their crew.

Bark Europa

The EUROPA was built in 1911 on the Stülcken wharf in Hamburg, Germany, to serve as a light ship on the German river Elbe. Since the year 2000, the Bark EUROPA has been crossing oceans and seas on a regular basis, offering you the possibility to step on board halfway through a long ocean crossing.



Bark Europa by Žeglazr. Public Domain.

From December to March in the Southern hemisphere summer, EUROPA conducts expeditions to the Antarctic Peninsula, and she also participates in Tall Ships Races, the largest international ocean races for sail-training ships in the world. She also collaborates in scientific research projects.

You can be a part of the journey working as a crew member or simply as a guest.

More info: www.barkeuropa.com



L'Hermione by Jibi44. CC BY-SA 4.0.

DÉBORD DE LOIRE, NANTES (FRANCE)

Débord de Loire is a three-yearly event, a nautical reunion on the estuary of the Loire river between St Nazaire and Nantes, organized by the Association Culturelle de l'Ete. It is a great nautical and artistic event, free and open to all. Débord de Loire addresses innovation through sailing and the Loire, from yesterday to today. The last edition received both the Belem (an emblematic ship) and the Hermione (a replica of the ship La Fayette), but also many other kinds of ships. A fleet of more than 200 boats ascended the Loire with Hermione and Belem as guests of honour.

The event becomes a festival with many other scheduled complementary activities and the participation of different associations, collectives, companies and institutions of the territory but also in connection with the cities of the Loire which will take part in their own way in the displays.

More info: www.deborddeloire.fr

Juan Sebastián Elcano

The Juan Sebastián Elcano is a four-masted brig-schooner and training ship of the Spanish Navy. This sailing ship sails all over the world and is perhaps the Navy's most representative and well-loved ship in Spain. Its arrival at any port is always news of interest and is usually accompanied by different events and celebrations. While it is moored, the Juan Sebastián Elcano opens its doors to the public who can see first-hand what day-to-day life is like on board this type of ship.



Juan Sebastián Elcano Ship by Elentir. CC-BY-SA-2.0.

· Make it possible to visit them

Even if they are no longer active, historic ships or those withdrawn from service can always offer very interesting perspectives on maritime life on board a ship, maritime heritage and all related knowledge. Good maintenance and some information panels to guide the visitor may be all that is needed to offer a very special experience.

THE FLOATING MUSEUMS OF TORREVIEJA, ALICANTE (SPAIN)

Torrevieja is a Spanish city of about 80,000 inhabitants, in the province of Alicante, on the Mediterranean coast. Although tourists are mainly drawn

to the city due to the combination of sun and beach, this city also has some important maritime heritage in its marina, with two **floating museums** that have become one of the main attractions of the city:

- Floating Submarine Museum S-61 Delfin. The Submarine S-61 "Delfin" was decommissioned from the Navy's list of ships on 10th December 2003, after 29 years of uninterrupted service at sea. It is a Daphne-class submarine ceded by the Spanish Navy to Torrevieja City Council.
- Floating Patrol Ship Museum Albatros III. This ship belonged to the Customs Surveillance service until its transfer to the Museum of the Sea and Salt, in 2006, after 33 years of service.



S-61 Delfin by Zarateman. Public Domain.

· Turn them into museums

Turning these ships into museums, recovering and maintaining the characteristics of their period of splendour, is an excellent way of showcasing the tangible and intangible heritage associated with them and turns them into unique attractions. We have already seen some cases such as the ships preserved in the Portsmouth Historic Dockyard (HMS Victory among them) but there are numerous examples and possibilities, from traditional small boats to large ocean liners.

HMS ALLIANCE SUBMARINE, GOSPORT (ENGLAND)

HMS Alliance is Britain's only remaining World War II submarine and stands as a memorial to the 5,300 British submariners who lost their lives in service.

A tour of the Alliance begins in the forward torpedo compartment, then on through the living space to the control room, where experienced submariner guides demonstrate the navigation systems including diving and surfacing. The tour continues through the galley and on to the heart of the submarine, the engine room, before culminating in the aft torpedo compartment, where the guides explain how submariners would escape in an emergency. Along the way, you can also peer through the working periscopes to view Portsmouth Harbour.



HMS Alliance by Vic Richards. CC BY-SA 2.0.

The Alliance forms the centrepiece of the Royal Navy Submarine Museum along with Holland I and X24. The museum also contains thousands of photographs, documents, ship plans and artefacts. The Royal Navy Submarine Museum is located in Gosport, on the former site of HMS Dolphin; home to

the Submarine Service for 100 years. A complimentary waterbus takes visitors across the harbour from the Portsmouth Historic Dockyard.

More info: www.historicdockyard.co.uk

ROYAL YACHT BRITANNIA, EDINBURGH (SCOTLAND)

The Britannia was the first Royal Yacht to be built with complete ocean-going capacity and designed as a Royal residence to entertain guests around the world. When she was decommissioned in 1997, it marked the end of a long tradition of British Royal Yachts, dating back to 1660 and the reign of Charles II. The Royal Yacht Britannia was Her Majesty the Queen's former floating palace for over 40 years.

More info:

<https://www.royalyachtbritannia.co.uk/>

HIJMS MIKASA, YOKOSUKA (JAPAN)

HIJMS Mikasa was built in England, in 1902. Immediately after her transfer to Yokosuka, Japan, in December 1903, when the relationship between Japan and Russia exacerbated, the Combined Fleet was set up and HIJMS Mikasa was designated as the Flagship. She successfully engaged in the Battle of the Sea of Japan in 1905.

After the War, as the building competition of the new and powerful battleships intensified along with the rapid advances in military technology, Japan, the US and the UK agreed to limit their number of battleships with the Washington Naval Treaty. In September

1923 Japan, as a signatory country of the Washington Treaty, decided to decommission the aged Mikasa and to remove her from registration. However, the people's voice rose to keep the battleship that contributed greatly to the victory in the Japanese- Russo War as a symbol of nation's pride.

Today, she is a historic warship memorial museum.

More info: www.kinenkan-mikasa.or.jp

One of the most important attractions of this museum are its collections. Among the objects on display, we can find rarities such as the basking shark An Liamhán Gréine, *Cetorhinus maximus* (Gunnerus) (the second largest fish species in world and the largest in the North Atlantic), the rocket carts whose primary use was to rescue the crew from vessels stranded close to the shore, a collection of portraits and references to Navy Irish seamen from the area and even ships such as the Drontheim Boat or Greencastle Yawl (once the most common fishing boats along Ireland's North Coast). Several objects from the sea such as the remains of a B17 that crashed in 1942 in the waters of Lough Foyle can also be seen in this museum. The different historical objects are combined with different exhibitions related to the sea and local history.

<https://inishowenmaritime.com/>

INISHOWEN MARITIME MUSEUM, DONEGAL (IRELAND)



Inishowen Maritime Museum & Planetarium.

The [Inishowen Maritime Museum](https://inishowenmaritime.com/) is located at the Old Coastguard Station overlooking one of the busiest fishing fleets in Ireland, with magnificent views over Lough Foyle and Co Derry; a place which has a rich history with the Armada, Napoleonic Era and World Wars.

This museum shows information not only about Greencastle Maritime history, but also from other local places such as Malin Head Radio Station, established in January 1902 at the Lloyd's of London signal tower at Banba's Crown, and operating through both World Wars.

· Adapt them for other use

Hotels, restaurants, bars... even when these vessels are adapted for other use, they can still be preserved and much of their heritage value disseminated. Their historical component endows them with a unique personality and originality. However, we must bear in mind that (even when turned into museums and adapted for visitors) they must meet certain legal requirements and standards for their use to be safe. If the transformations that they undergo as a result of this adaptation will diminish their historical value or degrade their heritage characteristics, this may not be the best option, or we must rethink our project.

P.S. TATTERSHALL CASTLE, LONDON (ENGLAND)

This ship was built in 1934 and used as a passenger ferry (with a brief service during WWII) on the Humber River, until her retirement in 1973. Today it hosts one of the most famous pubs on the Thames (London) hosting all kind of events.

<https://www.thetattershallcastle.co.uk/home>



Tattershall Castle Steamer by The Lud. Public Domain.

QUEEN ELISABETH II, DUBAI (UNITED ARAB EMIRATES)

The Queen Elizabeth II (QE2) was an ocean liner, originally powered by steam, with 806 trips behind it and 25 trips around the world, launched in 1967 at Clydebank, and active until 2007 when it was sold to a Dubaian company. Today it is a luxury floating hotel that has retained its appearance and history and conducts guided heritage tours. Appreciating the historical legacy of this ship increases the value and exceptionality of this customer experience.

<https://www.qe2.com/en/>

MOSHULU, PHILADELPHIA (USA)

The “legendary” Moshulu is indeed the world’s oldest and largest square-rigged sailing vessel still afloat, now turned into a restaurant. She was built in Port of Glasgow, Scotland in 1904 for the G.J.H Siemers Co. of Hamburg, Germany as the four-masted barque Kurt.

The Moshulu began her career as a cargo ship and filled this role for many years around the world. During World War I the U.S. Navy confiscated the ship as prize booty and kept her in commission. Re-named the Moshulu and now under the American flag, she kept sailing as a cargo vessel until 1931. In 1935 she was the purchased by a successful ship owner with 25 other vessels who had found profit in bringing grain from Australia onboard a fleet of iron and steel. These sailing ships became famous as the “grain race” barques of the mid and late thirties.

The outbreak of World War II affected her business. In November 1942, as the ship lay in Kristiansand, Norway, which was occupied by Nazi forces, the German troops confiscated the Moshulu and stripped of her masts and spars. She ended up as a grain storage hulk in Finland.

Finally, the Moshulu was purchased to be restored and destined to become a museum-restaurant in 1974. She gained recognition as an award winning, AAA 4 Diamond rated Restaurant, Bar and Deck. She was also seen in the movie Rocky and in The Godfather Part II as well as in the end scene of the movie Blow Out.

<https://www.moshulu.com/>

FINGAL LIGHTHOUSE SHIP, EDINBURGH (ENGLAND)

Fingal is a luxury floating hotel permanently berthed on Edinburgh's vibrant waterfront, but which started life as a lighthouse tender, helping maintain lighthouses and transporting their keepers, equipment and supplies to some of the most treacherous locations in Scotland.

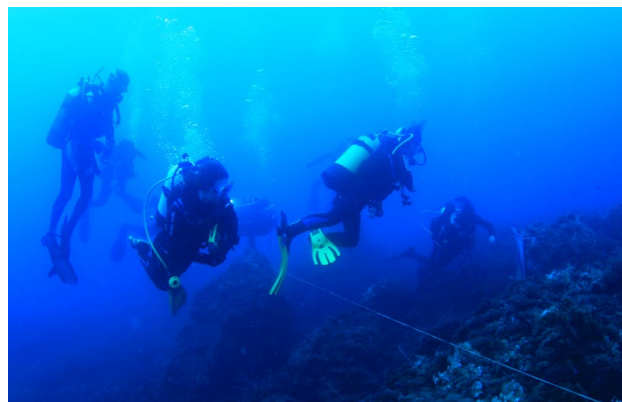
<https://www.fingal.co.uk/>

7.4. Wrecks

Did you know that UNESCO recommends in situ conservation of shipwrecks as the first option? Wrecked ships first go through a period of fairly quick deterioration, but over time they stabilize, and the deterioration curve is considerably reduced. They strike a balance with the environment. In turn, the natural environment colonizes them and fills them with life in a symbiosis process. Altering this balance, with an archaeological excavation or simply unearthing the remains or altering them in any way, can break that balance and start again the acceleration of the deterioration process. This does not mean that these vessels cannot be studied or even lifted, but it is very important to do this only when there are clear research and development objectives and sufficient means are available for the conservation of the remains extracted and for the stabilization of those that remain underwater. On the other hand, the conservation processes for elements from underwater can be very long and costly, so they cannot always be exhibited immediately; and some are so fragile that they simply can never be exhibited.

But the remains of a ship being on the seabed does not stop it from being enjoyed and appreciated in a responsible and sustainable way. Let us look at some examples.

• Visits



Underwater Trail. ©Isla Grosa Project.

Opening wrecks for visits by recreational divers is a good way of spreading their heritage values. However, it is very important to discern between mere economic exploitation and true cultural appreciation. We have already mentioned the fragility of this type of heritage, which is also unique and irreplaceable, and the threats to which it is exposed, including looting. Monitoring the use of heritage to preserve its integrity and identity is a fundamental ethical duty. On the other hand, it has been shown that, for divers, visits are much more enriching and interesting when there is a good interpretation process in place and they are able to understand the value, relevance, history and human dimension of what they are seeing.

During 2014 the pilot musealization of a site was carried out in Isla Grosa, Murcia (Spain). As part of the project, a public study was carried out. 99% of divers preferred to visit the site accompanied by a professional archaeologist.

Wrecks can be opened for visits in a one-off, intermittent or permanent manner, depending on the circumstances. Panels can be located near the wreck; a predetermined route can be established with a guide rope, or all the necessary information can be given prior to immersion. In any case, it is always advisable to instruct divers and staff of

those dive centres that may participate, in the [ethical recommendations for diving in UNESCO underwater heritage sites](#).

Moreover, these wrecks can be visited in isolation or as part of routes, parks, sanctuaries or marine reserves, for example. The figures for their management are very varied and will depend on the circumstances of each wreck, the environment in which it is located and the current legislation.

BOU FERRER, ALICANTE (SPAIN)



©Proyecto Bou Ferrer.

The wreck Bou Ferrer is a large Roman merchant ship, from the 1st century A.D. It can only be visited at certain times of the year and always through a single dive centre. Out of season, the wreck is protected by an immense cage to protect it from looting.

Since 2013 there have been visits by sports divers to underwater archaeological excavations. Those who are in possession of the required qualifications (advanced level, two-star diver or deep-diving specialty and at least 35 registered dives) and who contribute to the running of the research project and visits themselves with a minimum donation of 50 euros to pay for the costs of the guides and project technicians who direct the visits, the boat and the site.

To this we must add the costs of the dive (filling the oxygen tanks, weight belts and

boat trip to the wreck), valued at 45 euros, to Ali-Sub (the responsible dive centre). The visits are made on Saturdays and Sundays when weather conditions allow, between August and September, in dives with groups of 10 divers, accompanied by a project technician.

Before the dive, divers must visit the [museum](#) that contains the materials excavated from the site to learn first-hand about the latest finds, and how the pieces lifted from the excavations are researched, desalinated and restored. Before the dive, a brief talk is given by a project technician, explaining the characteristics of the site, how the dive will transpire, the type of substrate, visibility difficulties, times and the importance of not touching or disturbing anything with the fins, the site and its particular characteristics.

It is also possible for disabled people who have the required diving qualification to carry out specially adapted dives.

More info:

- [Images of the excavation](#).
- [Video](#) of the project.
- Dive centre [web](#).

The "WILDSEA Atlantic Ocean Heritage" Route Project

The Wildsea Atlantic Ocean Heritage Route ("WAOH! Route") is the first, European, Sustainable Diving Route connecting world-class diving sites from the extreme south in Portugal and Spain

to the far north, encompassing Ireland and the UK. Building on the experience and results of Project “Wildsea Europe”, the WAOH Route connects world-class “flagship” diving sites and destinations that will encourage, create and unite synergy between water sports and Europe’s unique, Atlantic marine heritage of landscapes, wildlife and habitats in combination with a range of maritime cultural heritage.

The project ran from January 1st, 2018 to December 30th, 2019 and was a joint initiative of partners from 4 European countries (Spain, UK, Ireland & Portugal):

More info: www.wildsea.eu

FLORIDA KEYS NATIONAL MARINE SANCTUARY (USA)



The remains of the City of Washington. © Florida Keys National Marine Sanctuary.

Within the [Florida Keys National Marine Sanctuary](#) lies a trail of historic shipwrecks, scattered along the coral reefs and buried in the sandy shallows a few miles offshore.

Visitors are encouraged to explore the sites along the trail. An underwater guide is available for each site on the Shipwreck Trail, providing the shipwreck and mooring buoy positions, history, a site map, and information about marine life divers might encounter. Conditions on the Shipwreck

Trail sites vary from easy dives in shallow water to deeper dives of 100 feet or more where swift currents may be encountered. Some of the deeper sites require mooring to submerged buoys.

More info: floridakeys.noaa.gov

LA BALLENERA. UNDERWATER TRAIL ON A 16TH CENTURY SHIPWRECK (ALGECIRAS, SPAIN)



©Cádiz University.

La Ballenera Shipwreck is a merchant ship sunk in the Bay of Algeciras, with an important cargo of Italian products. This is an underwater archaeology research project led by the University of Cadiz, and a field school site for students. During the excavation process, an agreement was reached between local stakeholders in order to create a new cultural underwater tourist resource for local dive centres and museums. In collaboration with a local diving centre (Caetaria) and the FEDAS association, public visits were carried out during June and July 2019. Visitors could learn about the archaeological research process, underwater artefacts and carry out an archaeological guided dive on the site, creating public awareness on UCH and new cultural tourist resources for the Algeciras local stakeholders.

· Research, excavation and extraction of certain objects

As can be seen, we never talk about the simple extraction of objects, because this should never be done without proper prior research and without the relevant documentation and registration procedures carried out by archaeology professionals. Archaeologists can read the details of a site as if it were a book. The location and position of the elements relative to the rest of the wreck can provide very useful information for those who know how to understand it. Extracting objects without following the proper procedure is like ripping a page out of a book and losing a part of that story forever.

However, following the proper procedure, a wide variety of historical artefacts can be extracted which, once cleaned and stabilized, and with proper interpretation, can keep the history of the ship and the people who lived on board alive for future generations. One of the most common ways for the public to appreciate this heritage asset is for it to be exhibited, either in the permanent collection of a museum or through temporary exhibitions.

HMS Pandora

HMS Pandora was the Royal Navy warship dispatched to the South Pacific in pursuit of the infamous Bounty mutineers. Today, the mutiny on the Bounty remains one of the best-known stories in the history of seafaring. Few, however, are aware of the epic story of the Pandora and the extraordinary efforts of the Royal Navy to recover the “pirated” Bounty and bring the mutineers to justice.

In her day, HMS Pandora was a prized and proud member of the Royal Navy. Today the Pandora is one of the most significant shipwrecks in the Southern Hemisphere. The Queensland Museum has been excavating the wreck and piecing together the Pandora puzzle since 1983,

presenting an overview of the Pandora’s voyage, the history that surrounds it and the Queensland Museum’s ongoing conservation, interpretation and research.

Titanic, the Exhibition

On the fateful early morning of April 15, 1912, the RMS Titanic, the largest ship ever built by man, sank into the icy waters of the North Atlantic after hitting an iceberg, taking the lives of 1,495 people with it. The whole world was shocked to learn the terrible news.

More than 100 years later, Titanic the Exhibition, displays nearly 200 original objects from the Titanic and numerous life-size reproductions of its interior rooms.

<https://titanic.es/la-exposicion/>



© Titanic, The Exhibition.

SUNKEN TREASURES. PRINCESSEHOF NATIONAL MUSEUM OF CERAMICS, LEEUWARDEN (THE NETHERLANDS)

The Prinsessehof will present the Sunken Treasures Exhibition from 7th September 2019 to 28th June 2020. The exhibition features ceramics and other objects found aboard eight shipwrecks dating from the 9th to the 19th century. The

ceramic treasures tell fascinating stories about the Maritime Silk Road in Asia and reveal a hitherto unknown world of international trade and exchange.

Ships from all over the world sailed the Maritime Silk Road for centuries in search of pepper, silk and porcelain. Sometimes the ships that perished have lain on the seabed for centuries as time capsules. The wrecks and certainly the well-preserved ceramics provide a treasure trove of information.

More info: www.prinsessehof.nl

· Research, excavation, extraction and giving museum status to the wreck

A suitable team, made up of professional archaeologists, curators and underwater restorers, may conclude that extracting a wreck is feasible or recommended either for reasons relating to the conservation of the wreck, research, or related to their heritage value. One of the advantages for the dissemination of this type of practice is that they make wrecks accessible to a much larger audience and not only to recreational divers. However, it is a long and complex operation that requires a large investment, a long-term project and the collaboration of various agents.

Sometimes these ships are not located on the seabed but beached or in intertidal environments, which facilitates their extraction, but brings other complications because, when exposed to oxygen, their state of conservation is usually much lower than those found underwater.

Finally, some ships may be buried on land, either intentionally (as in the case of Viking ships that we will see below) or due to sediment accumulation and changes in sea level or coastal dynamics. These vessels will generally be in a good state of conservation and their research, excavation and extraction will be much easier than for those found underwater.

VASA MUSEUM, STOCKHOLM (SWEDEN)

The Vasa ship capsized and sank in Stockholm 1628. After 333 years on the seabed the mighty warship was salvaged and the voyage could continue. Today, Vasa is the world's best preserved 17th century ship and the most visited museum in Scandinavia.

More info: www.vasamuseet.se



Museo Vasa by Peter Isotalo. CC BY-SA 3.0.

VIKING SHIP MUSEUM, BYGDØY (NORWAY)

All the Viking ships at this museum were ocean-going vessels before they were hauled onto land to be used in burial rituals for their wealthy owners. In the burial mounds, archaeologists unearthed skeletons, beautiful wood carvings and a diverse range of artefacts from the fascinating world of the Vikings.

More info: www.khm.uio.no

MARY ROSE, PORTSMOUTH (ENGLAND)

The Mary Rose was a successful warship for Henry VIII for 34 years: almost the entire duration of his reign. This ship, lost in 1545, was recovered in 1982 and is now on display and is Portsmouth's top visitor attraction.

More info: <https://maryrose.org/>

H.L. HUNLEY SUBMARINE, CHARLESTON (USA)

On February 17th, 1864, the H. L. Hunley became the first successful combat submarine in world history, with the sinking of the USS Housatonic. After completing her mission, she vanished. The National Underwater and Marine Agency (NUMA) found the Hunley in 1995. The Hunley Commission and Friends of the Hunley, led an effort with the United States Navy that culminated on August 8th, 2000 with the Hunley's safe recovery.

She was then delivered to the Warren Lasch Conservation Center, a high-tech lab specifically designed to conserve the vessel. The Hunley has since been excavated and proved to be a time capsule, holding a wide array of artefacts that can teach us about life during the American Civil War. The submarine and the hundreds of artefacts found onboard are currently undergoing preservation work while archaeologists use the historical clues they have found to piece together the final moments of the Hunley and her crew.

While the history and conservation of the Hunley is being researched, both the submarine and the laboratory may be visited, as well as the interpretation centre that contains comprehensive information and numerous interactive activities.

More info: www.hunley.org

· Working replicas

Sometimes it is not possible to recover a boat either because of its fragility, because of the depth it is at or because it was irretrievably lost. However, adequate research work, combined with knowledge of traditional trades linked to sailing, can allow us to discover the characteristics of these ships and even make life-size working replicas.

These initiatives are very interesting because they not only recover the material part, but also keep alive trades and knowledge that have almost disappeared, not only to build the ships, but also to maintain and sail them. The mobility of these ships also allows people to enjoy them in different locations and countries. Thus, they offer numerous dissemination possibilities and generate interest among the general public and the media from the moment their construction work begins.

LA TRIREME OLYMPIAS. HELLENIC NAVY (GREECE)

For over 30 years, this replica was an active part of the Greek naval fleet, making various voyages and crossings. Although Olympias, is no longer structurally capable of being used for experimental sea-trials, she continues to be maintained by the Hellenic Navy and still fulfils an important part of her intended role in educating the public about the ancient world, since she is still visited by thousands each year at the Floating Naval Museum Battleship Averof in Faliro, Greece, and can be rowed by the general public on a number of open days.

Museum: averof.mil.gr

More info: www.triremetrust.org.uk

NAO VICTORIA FOUNDATION (SPAIN)



Nao Victoria by Christian Ferrer. CC BY 4.0.

Life-size replicas of the Nao Victoria (the ship that between 1519-1522 was the first to circumnavigate the world, captained by Juan Sebastián Elcano); the Nao Santa Maria (one of the main protagonists in the discovery of the West Indies) and a 17th century Spanish galleon were built in the shipyards here with extraordinary historical fidelity using artisan techniques.

Currently work is being carried out on the "Nao Victoria 500", a new version of the Nao Victoria, which will be permanently located in a jetty on the Guadalquivir River with an adjoining Interpretation centre. This will be a stunning visual attraction for the city of Seville.

The [foundation](#) organises different activities with these boats, ranging from promoting and running events around the world, bringing Spanish maritime heritage to the attention of the public, to hiring them out for films and documentaries. This always has great media impact and huge attendance numbers.

More info:

www.fundacionnaovictoria.org

HERMIONE (FRANCE)

Hermione was a 12-pounder Concorde-class frigate of the French Navy. She became famous when she ferried General Lafayette to the United States in 1780 to support the Americans in the American Revolutionary War. She also played an important role during the War of the First Coalition. She grounded and was wrecked in 1793. In 1997, construction of a replica ship started in Rochefort, Charente-Maritime, France and this replica was launched on the 7th September 2014.

She sailed to America in 2015 making various stops along the coast, eventually returning to the port in Rochefort.

The [replica](#) is a fantastic way of highlighting the glorious past of the original Hermione. The fact she is actually sailing provides a very interesting and playful opportunity for the 230,000 visitors per year to discover both the story and the technology of the boat.

More info:

<https://www.deborddeloire.fr/wp-content/uploads/2019/05/fiche-mediation-hermione.pdf>

• Static or museum replicas

Even if they no longer sail, or never have, life-size replicas of ships continue to exert a powerful appeal on visitors and offer very diverse possibilities for both research and dissemination of their heritage values.

CARAVEL DOCK MUSEUM, HUELVA (SPAIN)



Muelle de las Carabelas
by Luis Rogelio HM. CC-BY-SA-2.0.

In the Muelle de las Carabelas Museum ([Caravel Dock Museum](#)) are reproductions of La Niña, La Pinta and La Santa María which were built in 1992 to celebrate the 5th centenary of the discovery of America.

Besides the replicas of the boats, which are its main attraction, the Muelle de las Carabelas Museum has a visitor centre, the medieval quarter (recreated around the dock) and the Island of Encuentro, which attempts to recreate the indigenous culture of the island of Guanahani, the first island where Christopher Columbus disembarked on the 12th of October 1492, and which he named San Salvador.

NATIONAL MUSEUM OF UNDERWATER ARCHAEOLOGY, MURCIA (SPAIN)

The [Spanish National Museum of Underwater Archaeology](#), with an eminently didactic character, has a replica of a Phoenician ship exactly as it was found in the underwater site in its permanent exhibition, along with several replica cross-sections of four boats related to the thematic areas of the Mare Hibericum. The sections of each ship show in detail its structural and morphological characteristics and its cargo, placed exactly according to studies of the conserved wrecks.



Full-size cross-section of a medieval ship on exhibition. National Museum of Underwater Archeology, Spain. By Martinvl. CC-BY-SA-4.0.

The naval scenes on the wall alternate with a series of games requiring manual interaction, which test visitors on what they have learned on their visit to the museum. All elements of the naval architecture wall are tactile, encouraging visitors to experience directly the textures and shapes of the materials and objects. They are also ergonomically suitable for all types of visitors.

More info: <http://www.culturaydeporte.gob.es/mnarqua/en/home.html>

HMS SURPRISE, SAN DIEGO (USA)



The Maritime Museum of San Diego's Surprise leads the tall ship parade into San Diego Bay to kick-off Festival of Sail. (Photo: Dale Frost).

The ship now known as HMS Surprise began her life in 1970 as a replica of the 18th century Royal Navy frigate Rose. Over the next 30 years, the Rose sailed thousands of miles as an attraction vessel and sail training ship prior to her conversion to HMS Surprise. For the academy award winning film, *Master and Commander: The Far Side of the World*, the filmmakers made a painstaking effort to recreate a 24-gun frigate specific to Great Britain's Nelson-era Royal Navy. The result is a replica vessel unmatched in its authenticity and attention to detail.

Renamed Surprise, she found a new home at the [Maritime Museum of San Diego](#) in 2004. A popular shoreside attraction, the ship now joins their collection of ships along with the *Star of India* and *Californian*.

More life-size replicas on the [UNESCO website](#).

THE GOLDEN HIND (ENGLAND)

The Golden Hind was a ship commissioned by Drake for his 1577 journey. The Golden Hind at Brixham is a full-sized replica of Sir Francis Drake's Tudor Galleon and is one of the most iconic ships from the age of exploration. The ship has been a feature of picturesque Brixham harbour for over fifty years, entertaining and educating thousands of visitors during this time, as well as being featured on many TV programmes and films.

More info: goldenhind.co.uk

You can find more life-size replicas on the UNESCO website: www.unesco.org

7.5. Battlefields

As we have already seen, naval warfare has played a very significant role in some of the most important conflicts throughout history. Whether near the coast or offshore, the remains can be of very varied typology. This is a particularly human-sensitive heritage and offers a unique opportunity to address the mistakes and tragedies of the past by fostering positive values for our future. In addition, the heritage remains resulting from these events (like many other shipwrecks) are authentic cemeteries and must be treated with the respect that a war grave deserves.

Moreover, the study and opening to the public of these spaces offers a very special possibility for international collaboration and the formation of multidisciplinary teams.

NAVAL BATTLE OF SANTIAGO DE CUBA



Cristobal Colon - cubasub.org.

The military political conflict between Spain and the United States that was triggered by the mysterious explosion of the battleship Maine in 1898, was a turning point in the history of Spain, Cuba, Puerto Rico and the Philippines and transformed the world's geopolitical landscape. Today, the remnants of this naval crusade make up an archaeological park where several of the Spanish and American ships that were sunk in the conflict lie.

More info:

www.cubasub.org/parque-arqueologico

BATTLE OF SAIPAN (MARIANA ISLANDS)

The Battle of Saipan took place in the context of the Pacific War, part of World War II, and was fought on the Island of Saipan (Mariana Islands) between 15th June and 9th July 1944. It was one of the largest widespread invasions deployed by the United States during this war. As a result, numerous vehicles of various types, both Japanese and North American, have been preserved under the waters. Currently many of these remains can be visited through an **underwater route** that includes boats, but also planes and assault vehicles (tanks).

More info: [Video documentary](#).

Normandy Landing

D-Day 1944 saw the sea covered with a carpet of ships, troop carriers, tank landing craft, cruisers, and even huge sections of the Mulberry artificial harbours, and hundreds of ships were lost over the following months of support operations. Many dangerous wrecks have been cleared, but "The D-Day Wrecks" museum in Port en Bessin open from June to September and weekends in May, can give you a good idea of what there is still out there.

In Arromanches it is possible to dive on hundreds of wrecks, in waters never much more than 25m deep. Arromanches and Normandy Beach have become popular places for divers.

More info: www.normandybeach.co.uk

PEARL HARBOUR, (HAWAII)



The USS Arizona burning after the Japanese attack on Pearl Harbor, 7 December 1941. National Archives and Records Administration.

Today, Pearl Harbour (the number one visitor destination in Hawaii) remains an active military base, Headquarters of the Pacific Fleet, and a National Historic Landmark that is home to four unique attractions: the Battleship Missouri Memorial, the USS Bowfin Submarine Museum & Park, the Pearl Harbour Aviation Museum and the USS Arizona Memorial.

The USS Arizona Memorial is built over the remains of the sunken battleship USS Arizona, the final resting place for many of the 1,177 crewmen killed on December 7th 1941 when their ship was bombed by Japanese Naval Forces. This loss of life represents over half of the Americans killed during the worst naval disaster in American history.

More info:
www.pearlharborhistoricsites.org

7.6. Intangible heritage

We have already seen numerous cases that combine tangible and intangible heritage, such as historic boat races, historic ships turning into museums or life-size replicas. Finally, we will briefly look at a few more examples to recall some of the strengths and possibilities of this type of heritage, recalling the role that fiction can play in our collective imagination, how to keep the arts linked to shipbuilding alive by turning them into a meeting and learning point, the attractiveness and ability to engage locally with events such as historical re-enactments or the importance of keeping memory alive through commemorative events... always remembering that behind the ships, artefacts and historical and archaeological remains are the lives and faces of our ancestors.

Maritime heritage and fiction

Literature, including fiction, can also be an important heritage element, provoking strong emotional and identity responses in the population. *The Men of the Sea; Ships of Legend exhibition* (Madrid, Naval Museum, 15th April- 12th October 2015) offered a tour of the history of navigation, from ancient times to the modern day, through a series of vessels, some real (such as the Bismark or the Titanic) and others the fruit of literary fiction (such as the Hispaniola or the Nautilus), all powerfully anchored in the memories and imaginations of sea lovers.

More info: hombresdelamar.fundacionmuseonaval.com

THE SEA FACTORY OF THE BASQUES, GIPUZKOA (SPAIN)



©Albaola.

Albaola The Sea Factory of the Basques in Pasaia San Pedro (Pasaia, Gipuzkoa), is an innovative environment where nautical craftsmanship and technology is recovered and showcased. The Factory is open to the public and is characterized by its dynamism, the diversity of its activities, and its international outreach: shipbuilding, international boatbuilding school, ship modelling, club for young sailors, the "Theatre of the Sea", and other activities.

More info: www.albaola.com/en

DUBLINIA, DUBLÍN (IRELAND)

Dublinia is a non-profit heritage centre located at Christ Church, the crossroads of Dublin's medieval city.

In this exhibition, you can travel back to the city in Viking times, see what life was like onboard a Viking warship, visit a Viking house and take a trip down a Viking street, see the weaponry and learn the skills of being a Viking warrior, try on Viking clothes, become a slave and stroll down a noisy street, visit a smoky and cramped Viking house and learn of the myths and the mysteries surrounding the Vikings and their legacy, journey through Medieval Dublin and witness the sights,

sounds and smells of this busy city, learn about crime and punishment, death and disease and even toothache remedies of 700 years ago, enjoy the spicy aromas and so much more in the medieval fair, learn to play medieval games, visit a rich merchant's kitchen and walk along a bustling medieval street.

You can discover everything about Dublin's past from the magnificent artefacts on display, including those found at the famous Wood Quay excavations, and finish your visit by climbing an original medieval tower, a 96 step climb to the top, where you can see spectacular views of the city.

More info: www.dublinia.ie

NAPOLEONIC RE-ENACTMENTS, SANTOÑA (SPAIN)

Santoña (Cantabria) takes a trip back in time every year to 1814, when the Napoleonic troops left the city, complying with the agreement signed by France, England and Spain. Thus, for one weekend, Santoña travels to the past to show you the way of life, gastronomy, and crafts of the past. A programme that is accompanied with various activities and shows that re-enact parades, the army in the middle of the Napoleonic battle and the signing of the peace treaty, seasoned with typical music of the time, film screenings and performances.

More info: www.turismodecantabria.com



Carthaginians and Romans Festival by Emilio Rubio Villanueva. CC BY-SA 4.0.

CARTHAGINIANS AND ROMANS FESTIVAL, CARTAGENA (SPAIN)

In Cartagena (Murcia, Spain), operational base of the Carthaginian army in the Mediterranean in Ancient times, every September the ancient history of the city and its war against mighty Rome is recreated, including an immense battle opposite the port after the landing of the Roman army.

This re-enactment was born from the idea of a group of workers from the Centre for Initiatives and Tourism, who in 1989 proposed giving the city the popular festival that it lacked. Conferences were convened in which collectives and individuals participated, with the month of September being chosen as the most suitable for the celebrations. For months, a team of historians and experts thoroughly investigated traces of their city's Carthaginian and Roman past to plan the kind of festivities and historical events that could be held. In September 1990, the First Carthaginians and Romans Festival took place. Today it is one of the most anticipated events, mobilizing the whole city, and has been considered of National Tourist Interest since 1999.

More info: cartaginesesyromanos.es

FORT DUNREE MILITARY MUSEUM, DONEGAL (IRELAND)

This fort that was designed for times of war has become a stronghold of peace and conciliation thanks to the Remembrance Event for the men and women of Inishowen who fell in WWI, that has taken place in here every year since 2005, carried out in association with the Inishowen Friends of Messines (IFOM). This remembrance service has become a platform for disparate communities to come together with a unity of purpose, foster relationships and build new ones as the years pass. During this time IFOM has been active in promoting its peace and reconciliation aims coupled with building a lasting legacy so that these men and women will never again be forgotten. To achieve this, they have created a Peace Wall and Garden inside the grounds of Fort Dunree in which five Memorial plaques with the names of the Inishowen war dead on them have been installed.

More info: dunree.pro.ie



Laurentic memorial monument.

LAURENTIC MEMORIAL, DONEGAL (IRELAND)



Laurentic memorial monument.

The Laurentic site lies at the mouth of Lough Swilly, 30 metres below the surface. The ship itself is almost a scrapheap, due in part to the tidal pulls and also due to the large number of explosions carried out by the Royal Navy and the Cossum family over the years while attempting to retrieve the gold. However, a Laurentic trail can be mapped from its berth in Liverpool to Buncrana in Lough Swilly, where it was berthed and also the pier in Buncrana, where the bodies of the drowned sailors were laid in to rest outside the old Swilly hotel. A new Laurentic Memorial, with the names of the 354 who lost their lives and highlighting their connections, can be found at Fort Dunree. A relief effort was led by the Mayor of Derry at the time of the sinking, and the survivors were brought to the Guildhall, the interior of which has not changed since 1917. Derry City and Strabane District Council hold a significant collection of artefacts and archives from the Laurentic, including original photographs and postcards of the ship, while the Ulster Canada Initiative holds a significant archive of documents and recordings of relatives of those who served on the ship.

U-BOAT SURRENDER COMMEMORATIVE EVENT, DERRY (NORTHERN IRELAND)

On May 14th 1945, eight U-boats made their way up Lough Foyle to officially surrender their fleet, ending the Battle of the Atlantic, - the longest fought continuous maritime conflict in history. In 2015, Derry City and Strabane District Council launched their first annual commemorative event, highlighting the history of the surrender but also the huge influence the American and Canadian troops who were stationed in the city had on the city's culture.



U-boat Surrender Commemorative Event, Derry.

This event brings the attention of visitors to Derry's international collections and their U-boat museum collection, taken from the submarines when they surrendered at Lisahally in 1945.

In total, over 100 ships surrendered and were all eventually scuttled off the North-West Coast of Donegal. The commemorative event tries to tie in with annual VE Day celebrations and takes place in early May each year. The event features museum collections, talks, workshops, re-enactments and an authentic life-size replica of a Spitfire, as well as numerous WW2 military jeeps and other equipment. It features 1940s music and often footage of the era including footage of the U-boat surrender as well as underwater images and footage of the U-boats themselves.

More info: [First U-boat event.](#)

7.7. Underwater museums with a difference

Next, we will see a series of diving-related spaces generated artificially and intentionally instead of from a series of prior elements. Although some may depart from the field of maritime cultural heritage as such, they are very interesting examples of how to generate unique and interesting experiences for divers from different fields.

ULUBURUN: A SHIPWRECK IN YOUR SWIMMING POOL. ZARAGOZA (SPAIN)

This initiative is the result of the work of a start-up from the University of Zaragoza. Through this [activity](#), the site of the Uluburun, one of the most famous ancient shipwrecks of the Mediterranean, is recreated life-size in a swimming pool through 3D-printed modules and pieces. It is an activity specially designed for children, although quite often people of other ages participate, in which they can get into the skin of archaeologists and carry out an archaeological excavation supervised by professionals.

More info: naufragioentupiscina.com

MUSEO ATLANTICO, LANZAROTE (SPAIN)

Similar to the above, the [Museo Atlántico in Playa Blanca](#) has been open to the public since 2nd March 2016. Divers can dive here amongst the impressive sculptures of artist Jason deCaires Taylor, famous for his underwater art. The underwater museum in Lanzarote is situated in a protected area near Coloradas at a depth of 15 metres.

More info: underwatermuseumlanzarote.com

LOŠINJ HISTORICAL UNDERWATER PARK (CROATIA)

The setup of the [park](#) consists of a total of 11 different exhibits, which have been placed between 5 and 15 metres deep in the water and testify about the rich history of the island and its region. Among the exhibited items, there are replicas of cannons from the 16th century, replicas of ancient amphoras, anchors from the 4th and 5th centuries, Venetian cannons, machine guns from World War II, while the greatest attraction of the underwater park is the replica of the ancient bronze athlete statue, "Apoxyomenos" from the 2nd , - 1st century B.C., which is also a sort of a symbol of Mali Lošinj. The life-size replica of Apoxyomenos has been placed in an upright position, while the entire trail tour of the park is roughly 300 metres long.

All licensed divers can visit the park, and due to the relatively shallow waters where the exhibits are placed, people without any diving experience can dive in the park in the company of a diving instructor from the Diver Lošinj diving centre through the so-called "Discovery Dive" programme. Children under the age of 12 cannot partake in the program, while all adults can, as long as they don't have any underlying health issues.

OPERATING SEASON: May - October

More info: www.visitlosinj.hr/losinj-historical-underwater-park.aspx

UNDERWATER MUSEUM OF ART OR MUSA, CANCUN (MEXICO)

The Underwater Museum of Art or [MUSA](#) has 500 life-size sculptures, created by various artists, made of materials perfectly integrated with the environment.

More info: musamexico.org

UNDERWATER MUSEUM AT CAPE TARKHANKUT, CRIMEA

Set up over 15 years ago, this museum boasts a collection of busts of communist leaders and the heads of socialism throughout the history of the USSR. Lined up on stone shelves and racks and buried underwater, the busts are known as the Alley of Leaders. When the sea is clean and clear, underwater visibility can often exceed 30 feet, making the Alley of Leaders visible even from above the surface of the water.

More info: crimeatravel

THE SINKING WORLD- UNDERWATER GALLERIES, VIENNA (AUSTRIA)

[The Sinking World](#) is an ongoing series of fine art photography projects by renowned photographer Andreas Franke.

The images are enchanting in their own right, but what makes this art project particularly fascinating is where the artist chooses to display them. The final artwork is placed at its origin, at the place that is used as its backdrop (under the sea). The result is an underwater exhibition where the pieces remain for several months. The stories of The Sinking World take place in the mystic surrounding of underwater sceneries. They happen on sunken shipwrecks or in the middle of coral reefs.

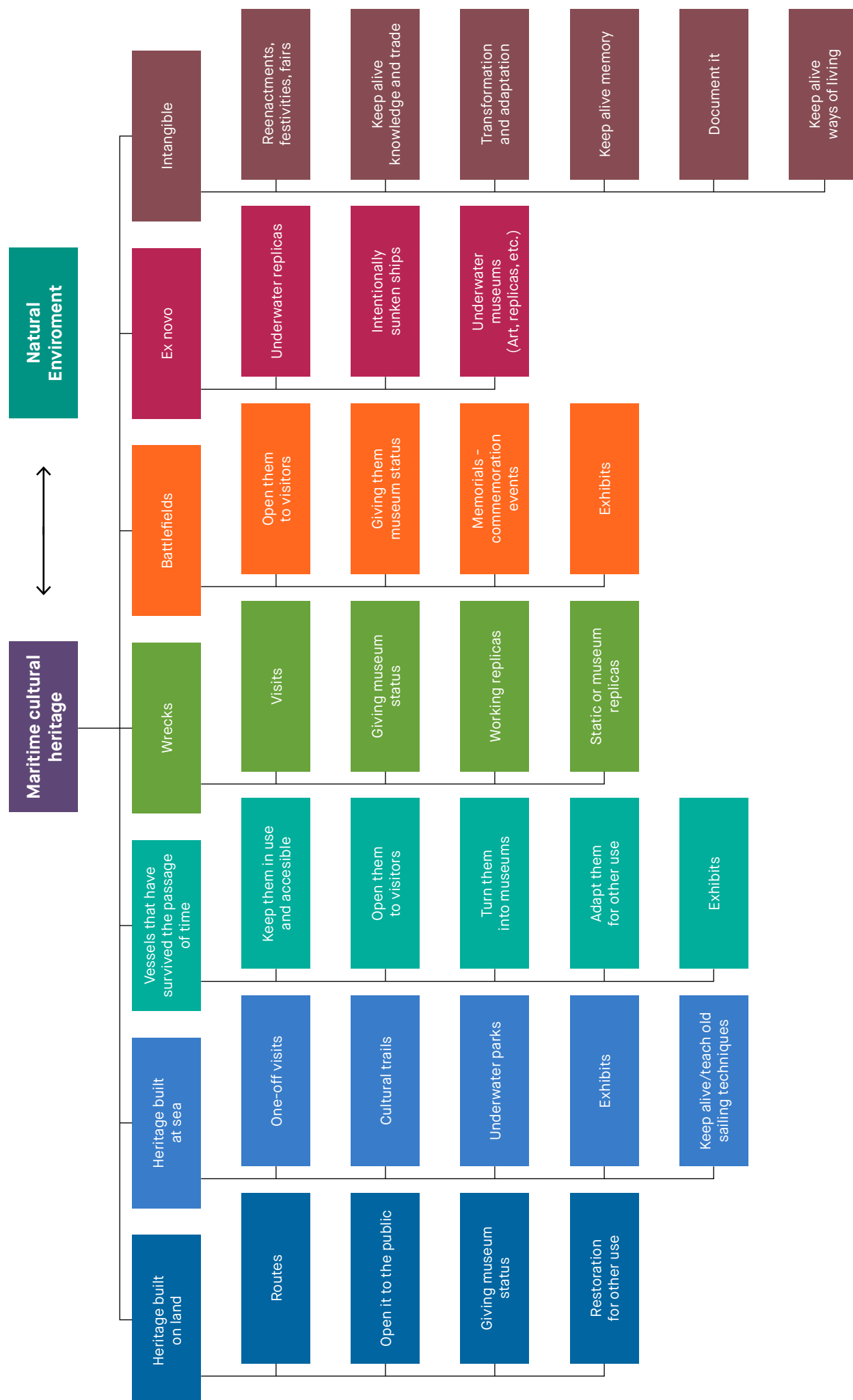
More info: thesinkingworld.com

SIDE UNDERWATER MUSEUM, ANTALYA (TURKEY)

Both certified divers and novices are welcome to visit this location, which oscillates between a depth of 7 and 25 metres. This [museum](#), similar to the above, is divided into over 5 different locations with over 110 statues in total. The Underwater Museum is open 12 months a year, but diving possibilities depend on the weather conditions. The scuba diving season is generally open from April till November and most dive centres are closed during winter.

More info:
www.side-underwatermuseum.com

Some of the main possibilities regarding Maritime and Underwater Cultural Heritage



8

Virtual heritage

Virtual heritage is the use of computer-based interactive technologies to record, preserve, or recreate artefacts, sites and actors of historic, artistic, religious, and cultural significance and to deliver the results openly to an audience in such way as to provide formative educational experiences through electronic manipulations of time and space (Stone and Ojika, 2000).²¹

21. Stone & Ojika (2000) "Virtual Heritage: What's Next?" *Multimedia IEEE* 7(2)



Virtual heritage offers richer, more active, dynamic, open, flexible, versatile and motivating experiences. It facilitates the understanding of complex and abstract realities and allows the integration of a large amount of information from various sources and different disciplines, transcending the immediate, and particular, to become a significant means of communication.

VIRTUAL HERITAGE ALLOWS US TO²²...

- Establish connections between the object, its context (historical, social, archaeological, etc.) and other objects to create a relevant cultural experience.
- Improve the readability by the non-specialist public and the speed of that readability.
- Facilitate the understanding of abstract concepts or complex realities (how they live in the Middle Ages).
- Combine tangible and intangible manifestations.
- Link present and past.
- Combine information from different sources and disciplines.
- Learn by doing.

- Make accessible heritage that is not (due to its location, to conservation issues, because it has disappeared).
- Investigate, restore and disseminate heritage without altering or endangering the original artefacts or sites.

Heritage virtualization can reach different degrees of complexity and be combined to cover a wide range of techniques. There is no single formula for success. The uniqueness of the heritage resources and the diversity of the dissemination methods at our disposal result in a series of combinations with almost infinite nuances. We will now look at some of the main techniques applied to heritage virtualization and some of its possibilities related to content, media, and application.

Content is related to the digital assets to be displayed to the visitor. To create these assets (3D reconstruction, immersive environment, etc.) many techniques are possible: photogrammetry, manual modeling, scanning or light-field capture, among many others.

Media relates to how the assets will be presented to the visitor. That may include non-interactive media, such as video, virtual reality or augmented reality.

Application relates to why the content is presented to the visitor, or what for. This might be for discover, entertainment, education, a mix of both, etc.

22. Santaballa (2019) "Virtual archaeology as a didactic and motivational tool". *Technology, Science and Education*, 13.

8.1. 3D Reconstructions

A 3D reconstruction captures and displays the actual volume and appearance of an object from information that is usually not three-dimensional. It is particularly useful for making understandable volumes, structures, elements that have disappeared or that have changed location, and relationships between various objects or heritage aspects.

The objects in museums are rarely displayed in the context in which they were found or for which they were created. Sometimes a site or an artifact is not accessible because of conservation issues or because it no longer exists. For example, wreckage elements when displayed in an exhibition room may be stripped of their original context, and the relationship between them may be mitigated by their change in layout. Through a simple static 3D recreation, we can reconstruct the original disposition and make the context in which they were found comprehensible at a glance. On the other hand, 3D Immersive environments allows us to present a scene, with these elements in use and motion, combining the tangible and intangible elements of heritage.

3D reconstructions are one of the most widely used elements and, in terms of its application, the options are countless: from simple lines printed on posters that help us to understand the original volume of a structure to animated compositions of landscapes that integrate heritage and elements of everyday life, and even his inhabitants. In addition to this, there are also possible later applications such as replicas or scale models.

One of the most used technics (especially regarding heritage and archaeology) is photogrammetry, which produces 3D models through portable computer programs from photography or video images.

However, and depending on what we want to recreate, the primary sources can be of all kinds: maps, old photographs, current photographs, videos, clouds of points taken by laser, scans... This is why gathering all the information about your heritage asset and all the documentation work

during the investigation is the first step you need to take when virtualizing heritage.

3D documents

3D technology has many applications regarding heritage. Old documents can be quite fragile, and it is not always possible to show or manipulate them. The digitalization of these can be fundamental in making their knowledge accessible to researchers and the general public. The virtual restoration through contact-less techniques (multi-spectral and 3D imaging for instance) allows recreating the topographic surface of the document with all the detail, improving the legibility of both the text and other elements like stamps or illustrations, the aesthetics, and the application of other tools such as those related to character recognition.

8.2. Video

A video is a system for the reproduction of images, whether or not accompanied by sound, employing magnetic tape (rare these days) or other electronic means.

One of the greatest advantages of video is its versatility. It allows us to combine different artistic and technological techniques and also information from very diverse sources, both past, and present. On the other hand, the possibility of incorporating real moving images, narration, sound effects, or music, encourages the involvement of the viewer, facilitates the understanding of complex realities and vividly stimulates his imagination.

TIP: With a little planning, the same audiovisual material can be put to different uses or audiences and, for example, be part of an exhibition, promotion your project in social networks and be part of a didactic online kit for schools at the same time.

The video makes it possible to show less accessible heritage, to do so from different perspectives (thanks to aerial and underwater drones, it is now possible to obtain images of great spectacularity and resolution), to put artifacts or heritage elements into use and motion, and to transmit information enjoyably and visually. However, the possibilities of interaction are scarce.

CAESAR AUGUSTA FLUVIAL PORT, ZARAGOZA (SPAIN)



Acces to Forum. Caesar Augusta Fluvial Port.
By Millars. CC-BY-SA-4.0.

The [Museum](#) of this river port exhibits, in situ, the archaeological remains of the Roman river port and the monument complex that connected the riverbank with the forum of the city.

A merchant welcomes visitors (by video) and shows them the bustling look of the port, introducing a series of characters. Throughout the tour, the visitor will meet the merchant and the other characters again, making the contexts more understandable.

8.3. Video mapping

Video mapping is a technique that consists of the projection of different content (audiovisual, animations, textures, 3D reconstructions, etc.) designed to measure in an original heritage asset (structures, volumetric elements, reliefs, etc.). It generates environments that are highly immersive, attractive and sensorial stimulating. It is a rich and versatile technique, that is very visual, and that can integrate all kinds of elements (sound, visual, tactile, music, narration, textures and volumes).

It is also very useful in restoration to reintegrate certain heritage elements or to show the evolution of temporal processes without altering the original asset. However, the use of projectors and the adaptation to a specific space or elements limit and complicate video mapping applications. It also requires dark closed spaces or to be used only at night when in open spaces.

Exhibit

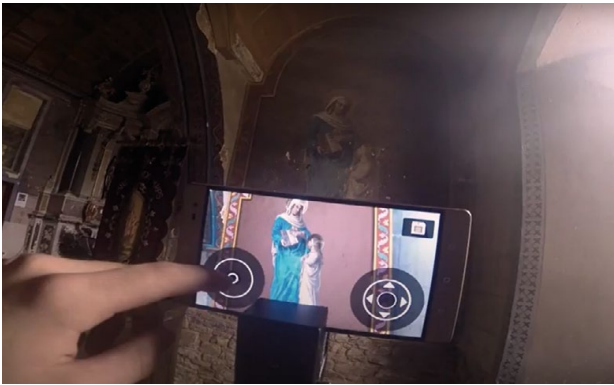
SARCOPHAGUS OF THE SPOUSES INSTALLATION, BOLOGNA (ITALY)

Sarcophagus of the Spouses installation, was an audiovisual performance and exhibit combining 3D video mapping, holographic techniques, computer graphics, high definition visualization with 3D reconstruction and digital storytelling embedded in an immersive narrative environment and scenography. The installation is based on the Sarcophagus of the Spouses (Italian: Sarcophago degli Sposi), a terracotta Etruscan masterpiece.²³

More about the process:
[Panasonic webpage.](#)

23. VVAA. (2015). "Sarcophagus of the Spouses Installation Intersection Across Archaeology, 3D Video Mapping, Holographic Techniques Combined with Immersive Narrative Environments and Scenography". *10.1109/DigitalHeritage.2015.7413903*.

8.4. Augmented reality



©Clarté.

Augmented reality makes it possible to add virtual information to a real environment that is being perceived through technology. Thus, virtual features such as images, video and sound can enrich the physical world, allowing the user to interact with real objects. This generates enormous possibilities regarding culture and heritage.

Augmented reality is a tool that facilitates working with information in a variety of formats and from a variety of disciplines, related to both tangible and intangible heritage. It is visual, interactive, motivating. It offers the user the possibility of expanding or not expanding knowledge, without overloading users who are looking for a “lighter” experience, but at the same time offering additional content to those who are interested. It is also a very useful tool to adapt the information for different audiences.

Nowadays we live and travel surrounded by screens and intelligent devices, which makes the application of this technology much easier. On the other hand, one of the disadvantages is that it may require considerable effort to make the same application compatible with different platforms and models.

London Street Museum:
www.youtube.com/watch?v=qSfATEZiUYo

8.5. Virtual environment

When we speak of virtual environment in the context of virtual heritage, we refer to digitally recreated virtual spaces that, in some way, can be inhabited or transited by a user.

For a virtual environment to be considered so, it has to meet four requirements: generation of own images not sourced from reality, three-dimensionality of the same, possibility of immersion and interactivity.²⁴

In order to create a cultural environmental experience, users should be (and feel):²⁵

- Physically embodied
- Socially embedded
- Culturally inscribed

Virtual environments allow not only composition of scenes beyond mere static objects, but also make them interactive. They can integrate and be generated with information in practically all media and are the basis for immersive experiences, as we soon will see.

8.6. Virtual Reality

Virtual reality is the use of computers and human-computer interfaces to create the effect of a three-dimensional world containing interactive objects with a strong sense of three-dimensional presence (Bryson).²⁶

24. According to Bellido Grant (2001) *Arte, museos y nuevas tecnologías*. Gijón: Trea.

25. Champion, E. (2015) "Introduction to Virtual Heritage". GILLAM and JACOBSON *The Egyptian Oracle Project, Ancient Ceremony in Augmented Reality*. Bloomsbury.

26. Bryson, S. (1996). "Virtual Reality in Scientific Visualization". *Communications of the ACM* 39 (5)



Freepik.com.

VR allows us to go a step further and complete the experience in virtual environments by making it more realistic through technological devices (such as virtual reality glasses) to immerse ourselves completely, generating the illusion that we are physically there. It facilitates the presentation of cultural content with unique and innovative dissemination methods. VR can be a very useful method to promote a destination in fairs and congresses, to make a site accessible, or as an educational complement in a museum program or an exhibition.

VR is very versatile: can be based on 3D elements, photo, video, 360° views, streaming, animation, or real filming among other things. It offers a physical immersion capability that isolates the user from the outside world allowing all senses to focus on what is being perceived. On the other hand, it has a strong emotional component that reinforces the user's understanding, learning and engagement. The presentation of the content through the visual and auditory dimensions encourages greater user participation compared to other conventional forms.

It offers a very interactive and unique experience. However, it is still a field under technical and methodological experimentation, and the equipment required is usually one-person, and not available to the general public, which limits its use and access.

RED SEA (Wreck Ships)

<https://www.youtube.com/watch?v=dk4N2pMZsas>

i-MARE Culture project. Underwater park of Baia, Naples (Italy)

This project uses Advanced VR, immersive serious games and Augmented Reality as tools to raise awareness and access to European Underwater Cultural heritage.

The archaeological park of the submerged city of Baia is a pioneer in the use of new technologies to enrich visitor experience. Divers have underwater tablets that allow them to orient themselves and take photographs, and not only contain relevant information related to the visit, but also show virtual reconstructions of the ancient Roman city when placed at the designated points.

These same reconstructions allow this ancient Roman city to be explored, without putting a single foot in the water, with the use of virtual glasses.

More info: [Progetto MUSAS](#)



Dioniso y Octavia Claudia (Réplica) Ninfeo Imperial sumergido del Emperador Claudio en Baia ©Soprintendenza Speciale per i Beni Archeologici di Napoli e Pompei

HERMITAGE VR EXPERIENCE, SAINT PETERSBURG (RUSSIA)

Hermitage Museum offers a VR experience based on a 20' movie in 360-degrees format, where the actors and the narrator are performing selected scenes from Hermitage palace's history.

More info: www.youtube.com/channel/UCPL9IVlgEG7Fm5iuChsW05w

Research has indicated that the general public does not want realism but entertaining immersion (...) It is not a lack of realism but a lack of meaningful content, which impedes the enjoyment of virtual heritage.

Experiential realism is afforded when the experience was visceral and evocative, rather than the photorealistic capture of detail and rendering (ERIK CHAMPION).²⁷

8.7. Immersive experiences

New technologies allow the user to be immersed in historic remains or a full virtual historic environment, and immersive experiences encompass all the advantages we have already seen with respect to virtual heritage. But is it enough to rigorously recreate spaces to generate an immersive experience? Is realism and attention to detail the key to achieving that feeling? The answer to both questions is: no.

The success and effectiveness of immersive experiences lies not so much in detail and technological ostentation as in the balance between these factors and the capacity to stimulate the user's engagement. The subjective sense of the user's presence is fundamental.

This sense doesn't come from the extraordinary graphic quality of an empty world (dead container) but from of the user's capacity to interact and to live situations and experiences similar to those of the real world. Thus, *the studies carried out to date give much more relevance to interaction possibilities, meaningful content, a strong narrative and the generation of emotions: the realism of the experience is more important for the user than the realism of the world itself.*

Remember: We need to find the balance between enjoyment, emotional engagement, historical accuracy and learning. We must strive to make our digitalization not a showcase but a door to the life of past societies, generating a meaningful experience for the user.

8.8. Games



The Creative Assembly. Napoleon Total War.

According to Super Data (a Nielsen Company)²⁸ digital games revenue reached \$109.4B in 2019, up 3% year-over-year. We are highlighting an expanding field in which historical games or games including historical content represent a solid portion of the market. Within this sector,

27. Champion, E. (2015) "Introduction to Virtual Heritage". GILLAM and JACOBSON *The Egyptian Oracle Project, Ancient Ceremony in Augmented Reality*. Bloomsbury..

28. <https://www.superdataresearch.com/>

examples that stand out are games related to medieval and ancient times, Napoleonic Wars and WWs.²⁹ The many possibilities between learning, games, education and heritage continue to be widely studied. *It has been proven that heritage can add value to the games, whilst games can also disseminate/reinforce historical knowledge and be used to enhance heritage as well.*

- **Games for entertainment can become learning spaces**

Just because a game is not designed for an educational purpose does not mean that it cannot be educational either by the game itself or used as a complement in pedagogical contexts. It is increasingly common to see this type of resource in classrooms, museums and exhibitions. They are resources already created with a high component of immersion, playability and engagement that can provide new and exciting perspectives when properly used.



Ubisoft. Assassin's Creed Black Flag.

ASSASSIN'S CREED SAGA

This games by Ubisoft offer to the player a fully immersive adventure on different historical periods. The prestige of the scenario recreation is enhanced by the presence of historical personalities and a thorough historical reconstruction of heritage assets including ports, ships, dockyards, and other maritime elements.

HISTORICAL WAR GAMES

According to recent studies, war games (and specially strategy games) allows the player not only to interact with a different period of time or an historical event, but also to empathize. Players can understand the concept of causality and how political, economic and social factors are interrelated. Some examples would be the sagas Close Combat, Total War ("Napoleon: Total war" included) or Silent Hunter; a simulator game where you can experience life and battles on board a submarine.

- **Games for learning but also to entertain**

Serious games: The difference between traditional video games and serious games is that the latter have a learning purpose. They are safe environments where you can learn, practice and make decisions in contexts that are impossible to recreate in real life. Studies show that the user's emotional bonding, immersion and learning experience are extraordinarily enhanced in games and game-like environments.

PeaceMaker (2007): This [video game](#) focused on the Israeli-Palestine conflict, challenges you to succeed as a leader where others have failed, testing your skills, assumptions and prior knowledge.

Web page: www.peacemakergame.com

Sailaway (2018): In this [sailing simulator](#) the oceans of the planet and the sailing technics are simulated with unparalleled accuracy at actual scale.

Web page: store.steampowered.com

29. I.P. HAR2016-78147-P



Ubisoft Silent Hunter V.

Alternate reality games (ARGs): This category of games combines digital elements (online) and real elements (offline) to generate an experience or a playful activity in the user. They are very engaging and interactive games, not only between the user and the game, but also between the players themselves. ARGs do not require great technological resources (a web page or a simple app may be enough) but a powerful narrative.

CROWDSOURCING WITH THE GUARDIAN

In June 2009 more than 20 thousand British cooperated in a game called *Investigate your MP's Expenses*. This game was created by newspaper *The Guardian* to investigate, with the help of the citizens, more than one million documents released by government in one of the largest scandals in the history of the English parliament. The project led to the resignation of some members of parliament and caused effective politic reforms.³⁰

More info: www.theguardian.com

WORLD WITHOUT OIL (PLAY IT BEFORE YOU LIVE IT)

[World Without Oil](#) "pre-created" a possible near-future scenario: a global oil shock where demand rises 5% over supply. It did so with the end goal of making this future less likely to actually happen. The WWO team established realistic macroparameters of the oil shock (such as the price and availability of fuel on any given week) but relied on the players to imagine how those parameters would change everyday life.

More: writerguy.com/wwwo

8.9. Virtual tours:

Virtual tours allow us to get to know other spaces from an electronic device. They can be based on one or several of the techniques we have seen before, and are an excellent way of making heritage virtually accessible or enriching real experiences. One of their advantages is that they make it possible to integrate information of many sources and disciplines, to combine past and present, intangible and tangible heritage, and to adapt the contents to different audiences. Also, they can show very specific locations and, at the same time, cover large distances, including transcultural and transnational assets. We could categorize them into three general groups:

- **Virtual tours that require some kind of fixed or mobile infrastructure to be provided to the user**

Some routes or sites require specific hardware and software to be enjoyed. This would be the case, for example, of a destination promoted with VR experiences at a congress or a fair, a museum incorporating devices for visiting similar collections or its own non-exhibited collections, or a travelling exhibition.

30. Gouveia, P. (2015) "Serious gaming: how gamers are solving real world problems" Artech 2015, *Seventh International Conference on Digital Arts*.

The advantages of this type of tour is that it is not necessary to work on its adaptation to different platforms and it is free from the graphic and technological limitations of personal devices. But, on the other hand, the scope is limited to the mobility of the necessary infrastructure.

Although it is common for this type of tours to be transferred in the form of video to digital media with a global reach, the essence of the experience is often lost in this process.

- **Virtual tours that can simply be accessed from a personal digital device from anywhere in the world**

These tours are limited by the technological and graphic capacity of the devices, they must search for compatibility and be regularly updated.

The biggest advantage of these tours is clear: everyone with a digital device can access them. This is the most widespread form, ranging from very simple solutions to full recreations of environments and completely immersive experiences.

"Jumping" tours

This is probably one of the easiest ways to create a virtual tour of either a site or a destination: a map serves as a basis for orientation and the main points of interest are marked on; there, additional information is displayed by clicking on it. This is an affordable option that can integrate resources already available (such as videos, photos, or 360° views) but with a very low degree of interactivity.

Visit Toulouse (France):

<https://www.urban-hist.toulouse.fr/uh/?context=SsUA>

Tarraco 360° (Roman City. Spain):

<https://www.tarraco360.com/?lang=en>

LA GROTTE CHAUVET-PONT D'ARC (FRANCE)

An exact replica of the [French cave of Chauvet](#) allows visitors to recreate the experience of visiting a cave with paintings from 36,000 years ago without damaging the original. The site also offers key reference points for locating the cave in space and time and devotes a section to the research methods and the many disciplines that contribute to the knowledge of this exceptional heritage. High degree of immersion and interactivity.

Web page:

archeologie.culture.fr/chaudet/

- **Virtualized tours based on real world enriched with AR technology**

These visits require being physically in the place that is going to be visited, but the augmented reality allows addition of different layers of information. AR combines physical experience and digital interactivity, enriching the visit and encouraging engagement. These tours can be implemented with the company of a guide or offer free access to the user, therefore they are not conditioned by schedules, reservations or the necessary influx of a set number of people (as regular guided visits often are). They can integrate all types of information, create tours of different themes for the same assets, take advantage of pre-existing resources, and be implemented through very simple formulas such as QR codes arranged in strategic locations, or by the latest technological advances in VR.

PAST VIEW TOURS (VIRTUAL RECREATION/AR)

Past View offers a guided tourist route with smartglasses (virtual reality glasses) for the most emblematic locations of the cities where it is implemented such as Seville, Barcelona, Athens and Ephesus. Through this device the user will visit the heritage of the city at different times in the past. Relevant points have been established strategically located near the main monuments and spaces of the city that will take the visitor to an era where a historical character-guide will explain the buildings, how people lived, their customs or their clothes.

These points are complemented by additional content that will provide the user with more information in a didactic and enjoyable way.

Web page: pastviewexperience.com

THE THISTLEGORM PROJECT (EGYPT)

In July 2017, the first detailed survey of the **SS Thistlegorm** (Red Sea, Egypt) was carried out using digital photogrammetry and 360 video approaches. The aims of this survey were twofold: an accurate archaeological survey and raising the awareness of the importance of UCH, working on 3D and virtual reality projects to bring submerged subjects to the surface.

More info: thethistlegormproject.com

THORNESS BAY WRECK TRAIL (ENGLAND)

The Thorness Bay wreck which lies off the coast of the Isle of Wight is protected under the Protection of Wrecks Act 1973 and a licence is needed to visit the site.

The trail which opened in 2018 was created by MSDS Marine and Pascoe Archaeology with funding from Historic England. The wreck is located in 21m of water but it can be fairly dark so it may be more suitable for more experienced divers. The [dive trail](#) provides a simple interpretation slate to guide divers around the remains on the seabed.

There is a virtual trail for recreational or educational purposes that can be explored [here](#).

A copy of the dive trail is available for download [here](#).

8.10. Virtual Dives

As we have seen, new technology offers a world full of possibilities for the dissemination of maritime heritage as-a-whole. It also takes on a special relevance in the case of underwater heritage, where access is generally much more restricted. Photogrammetry, real-time video recording or transmission, virtual reconstructions, 3D model printing, collaborative intelligence, the possibilities of enrichment through augmented reality... these are just a few of the many tools full of potential that are offered by technology that has come such a long way in the last decade. The use of these resources allows us to adapt our contents to any space, any kind of audience, create interactive experiences and, thanks to tablets and smartphones, reach any corner of the world.

THUNDER BAY NATIONAL MARINE SANCTUARY, MICHIGAN (USA)

Located in north-western Lake Huron, [Thunder Bay](#) is adjacent to one of the most treacherous stretches of water within the Great Lakes system. Unpredictable weather, murky fog banks, sudden gales, and rocky shoals earned the area the name "Shipwreck Alley." Today, the 4300-square-mile Thunder Bay National Marine Sanctuary protects one of America's best-preserved and nationally significant collections of shipwrecks. Fire, ice, collisions, and storms have claimed over 200 vessels in and around Thunder Bay. To date, nearly 100 shipwrecks have been discovered within the sanctuary, from an 1844 sidewheel steamer to a modern 500-foot-long German freighter.

These sanctuary [views](#) can be enjoyed on a personal computer or a smartphone. You can pair your smartphone with a virtual reality headset or goggles for an extra-immersive experience.

Historic England Virtual Dives

These [trails](#) use new technologies such as multi-image photogrammetric recording and virtual reality techniques. The new techniques allow viewers to see a clear 3D image of a site. Not only do they bring maritime archaeology to life for the non-diver, they are also a lot

easier to interpret than more traditional geophysical survey techniques or photographs taken in poor visibility. They can even aid archaeologists' work on land by allowing measurements to be taken and analysis to be carried out post-dive.

Through this website you can explore the HMT Arfon, HMS / mA1, HMS Colossus, London, Coronation, Holland No 5, Invincible, Norman's Bay wreck, U8, Association, Bartholomew Ledges, Tearing Ledge, Wheel Wreck, Thorness Bay, and Rooswijk.

Website: historicengland.org.uk

Google Underwater Street View

Everyone knows Google Street View. Now the tech giant also goes to the [bottom of the sea](#), allowing the exploration of numerous natural sites and some points of interest related to heritage.

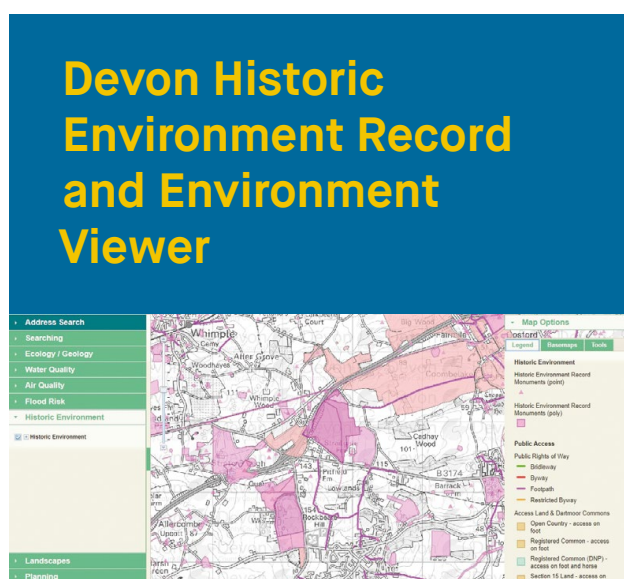
Some of the best locations to dive according to [PADI website](#).

VIRTUAL DIVE ON THE WRECK OF THE MELCKMEYT (1659), ICELAND'S OLDEST IDENTIFIED SHIPWRECK

This [video](#) was made by John McCarthy. It was created as part of a collaboration with maritime archaeologists and museums in Reykjavik, Iceland, to create a virtual reality diving experience exploring Iceland's oldest shipwreck. By donning a Virtual Reality headset, members of the public can now experience what a diver sees without getting their feet wet. Visitors can also see how the shipwreck might have looked just after it sank 360 years ago.

8.11. Other uses of technology

Although 3D, VR and AR related technologies can be very attractive and have many advantages, there are many other resources at our disposal that are equally effective and can make more sense for our objectives, our public and our heritage resources: GIS, databases, communication intelligence, telecommunications... Below are some examples that illustrate these possibilities. Remember that the limit is your imagination.



The [Devon Environment Viewer](#) is the result of many years of evolving public access to environmental data. The Devon Historic Environment Record (HER) began in 1975 when it was realized that in order protect and promote archaeological sites and historic buildings it was necessary to collate data on them and to accurately map their location and extent. Devon County Council took responsibility for the HER in 1979 and transferred it onto a Geographical Information System (GIS) in 2005. In 2017, Devon County Council created the 'Devon Environment Viewer' web portal in order to make all its digital environmental data available to the public. This includes the HER and

supporting historic mapping and aerial photographs, public rights of way (paths and open access land), biodiversity and geodiversity datasets and landscape character mapping.

The information has been compiled from a number of different sources. These may be archaeological and historical publications as well as a number of unpublished sources. Information has been collected from both primary and secondary sources: original documents, historic maps, learned society journals, antiquarian observations and excavations, aerial photographs and modern archaeological fieldwork.

The Devon HER & Environment Viewer enable heritage professionals, project stakeholders and the public to identify and source further information about accessible sites and buildings of historical interest, on land, in the inter-tidal and marine zones.

Web: map.devon.gov.uk/dccViewer

"Sommergiamoci" Project in the MPA Gaiola Underwater Park, Italy

This is a great example of an immersive and interactive experience to make underwater cultural heritage accessible for non-divers, without developing a digital environment.

This project was carried out in the Marine Protected Area Gaiola Underwater Park (Bay of Naples, Italy). The project started in 2015 and it was focused on the implementation of a new sustainable and non-invasive system for the visit of the underwater

archaeological and environmental heritage of the Park. The goals were to both develop a system that could guarantee a sustainable and not invasive, and, at the same time, to allow those that will never SCUBA dive to experience something that otherwise would be totally un-accessible. Thanks to the development of an innovative technology, which allows the direct audio/visual communication between a SCUBA diver and public on land, now 35 visitors per time can enjoy a dry dive experience. The result was obtained through the realization of a highly technological room in the visitor centre of the Underwater Park, where an immersive audio-visual communication with the SCUBA diver is obtained thanks to the use of wireless technologies.

SIMEONE, MASUCCI, DE VIVO (2019).³¹

Intangible heritage and new technologies

The i-Treasures was project where advanced ICT technologies were used to capture, analyse and model Intangible Cultural Heritage resources, enable knowledge exchange between researchers and contribute to the transmission of rare know-how.

8.12. Before we move on...

New technologies offer many possibilities for the dissemination and enhancement of maritime

and underwater heritage. As we have seen, the possibilities and combinations are countless and can be adjusted to different objectives, audiences and budgets. But we must always remember that technologies must be a means and not an end in themselves. A reconstruction without objectives, without cultural value, loses its meaning and has little to offer to the user.

Remember: The past is more than a collection of objects that are displayed.

It has been shown that the most positive experiences for users and to enhance their learning and comprehension are those with a greater degree of immersion (experiential) and interactivity. On the other hand, the possibility of influencing the outcome, having goals and objectives within the experience, solving problems and overcoming obstacles highly stimulates for engagement, user enjoyment, learning and the emotional aspects of the experience.

Remember: A powerful narrative is fundamental in maintaining user attention and motivation.

The more tailored our user's experience is, the more personal, the more effectively we can convey the information and the more rewarding the experience will be.

That is why it is very important to know your audience well and, if you have different targets, to think meticulously about the most suitable journey for each of them.

On the other hand, knowing this audience and how they consume the information or what media are they most familiar with is also important when developing virtual products in order to reach as many people as possible.

Furthermore, it is important to understand the needs of this group and their learning times. One thing to consider when developing virtual experiences: they may need a period of learning or adaptation within the experience itself and another period to process the information received.

31. "Results of the "Sommergiamoci" Project in the MPA Gaiola Underwater Park". *International Conference in Management of Accessible Underwater, Cultural and Natural Heritage Sites: "Dive in Blue Growth"*, Athens, Greece, 16-18 October 2019

Design a Journey for each targeted audience



Finally, don't forget that virtual projects need to be updated, fed and sustained after they are launched, so **don't forget to include the future needs of your virtual heritage project in your plan.**

Remember that every case is unique and you need to be creative!

Some inspiration

THE EGYPTIAN ORACLE. HYBRID STAGING

The [Egyptian Oracle](#) performance is a live reenactment of an authentic public ceremony from ancient Egypt's Late Period. A Virtual Egyptian Temple is projected on the wall at life scale extending the physical theater into virtual space. The temple is not a film, not a static image, but a true three-dimensional space, which the audience navigates during scene changes. The central actor is a high priest, an avatar controlled by a live human puppeteer, hidden offstage. The supporting actress stands in front of the screen, in costume, mediating the experience. Audience members represent the Egyptian populace acting out brief roles in the drama and interacting with the main characters. Finally, the sacred boat is another puppet also controlled by the puppeteer. In the drama, the will of the temple god moves the boat.

More info:
publicvr.org/html/pro_oracle.html

VERSAILLES: THE PALACE IS YOURS - GOOGLE ARTS & CULTURE

3D models, virtual tours, and VR experiences are combined here to bring Versailles' art collections and the palace itself.

The app [VersaillesVR](#) takes visitors on a virtual reality tour of the Royal Grand Apartments, the Chapel and the Opera. It's an invitation to discover the secrets of Versailles, and a magnificent sneak peek for those who might plan to visit in person. There are also 18 new online exhibitions featuring 340 artworks, including portraits of the royal family digitized in ultra-high resolution and archival photos of Versailles dating from the 19th century, as well as 18 never-before-seen 3D models of iconic rooms and objects.

All this is combined in a website with more cultural content and interactive proposals such as questionnaires to discover which royal character are you.

More info: <https://artsandculture.google.com/project/versailles>

Remember that virtual heritage must show the cultural significance of a site and be able to transfer it to society. It has been shown that the more original, diverse, interactive, dynamic and motivating the experience is, the greater its impact on the user.

The following exercise aims to help you set out your virtual heritage strategy. If you want some help finding your own story, we recommend you complete Exercise 4.

8.13. EXERCISE 6

1) Name the heritage asset you want to virtualize

2) What is the main purpose of this virtualization?

3) You want to

- a. Generate a new experience
- b. Enrich an already existing experience

4) Who is your targeted audience?

5) Do you know how your targeted audience consumes information?
(content format preferences, media habits, most used devices, etc.)

6) Will the experience be accessible from anywhere or at a specific location?

- a. From anywhere
- b. Specific location
 - Portable
 - Stationary

7) How will your audience access this experience?

a. Personal/at home devices

a. Computer

b. Tablet

c. Phone

d. Video game console

e. Other

b. External devices _____

8) Will the user need help or guidance to enjoy the experience?

a. Yes

b. No

9) How many people will directly experience it at the same time?

10) Your experience

a. Requires innovative software or hardware that needs to be created

b. Is based on preexisting software or hardware

c. Will be adaptable for different platforms/devices

d. Will be exclusive

11) Do you want to monetize this experience?

a. No

b. There will be a fee to use it

c. It will encourage people to visit a destination

d. There will be purchasable content

e. Other _____

12) What previous resources do you have about your heritage asset?

a. Video

b. Photo

c. Maps

d. Cartography

e. Audio records

f. Scans

g. Others: _____

13) What are your educational main goals? What do you want your user to learn?

- _____
- _____
- _____
- _____
- _____

14) Think of an original/entertaining/interactive approach for each goal

- _____
- _____
- _____
- _____
- _____

15) Define your experience's

| | High | Medium | Low |
|-------------------------------------|------|--------|-----|
| Interactivity | | | |
| Entertainment | | | |
| Narrative's strength | | | |
| Amount of options given to the user | | | |
| Gamification | | | |
| Historic accuracy | | | |
| Adaptation to user's profile | | | |

16) Why should your user try this experience?

17) Average time of the experience:

| Learning how to use/ Adaptation | Activity | Processing the experience |
|---------------------------------|----------|---------------------------|
| | | |

18) What are the future needs of your experience to be fully functional?

- a. Continued promotion
- b. Updates
- c. Maintenance
- d. Adaptation to new devices and new models
- e. Generate new content periodically
- f. Others: _____

19) How do you plan to solve these issues?

REMINDERS AND NOTES

9

Get to work!

Throughout these pages, we have learned how to identify and research our heritage resources and we have seen how to evaluate them. All through this process, there are several factors that, although we have been looking at them in a staggered way, are interrelated and need to be evaluated simultaneously. With this final exercise, we encourage you to start working and to recapitulate the conclusions of the previous exercises. We encourage you to fill them in before tackling this last one.

This exercise will allow you to prepare a comprehensive draft of your project which will help you not only to get organized, but also to present it to your team, other partners, stakeholders, or interested parties. Remember that, even if the ideas are very clear in your head, it is very important to have everything in writing so that all the members of your team and all your partners work with the same ideas and concepts without misunderstandings.

You may need to adapt this exercise if your proposal is a set of experiences and not just one. On the other hand, if your heritage resource includes underwater heritage or requires digital resources for its development, we strongly recommend you complete exercises 5 and 6 in addition to this one.

1) Name your asset

2) What is the main action you propose for this asset?

3) Explain the main goals of your project (i.e. raise awareness, increase visitors to a destination, create jobs, etc.)?

4) Research status

| | | | | | |
|-----------|-----------|------|-----|----------|-------------------------|
| Excellent | Very good | Good | Bad | Very bad | It has not been studied |
|-----------|-----------|------|-----|----------|-------------------------|

a. Things to be done**a.** Contact expert**b.** Contact institution**c.** Create a research project**d.** Keep gathering information**e.** Promote scholarships**f.** Other:**5) Conservation status**

| | | | | | |
|-----------|-----------|------|-----|----------|---------------------------|
| Excellent | Very good | Good | Bad | Very bad | It doesn't exist any more |
|-----------|-----------|------|-----|----------|---------------------------|

a. Main actions required regarding conservation and adaptation (if that is the case).

b. Actions required regarding conservation to keep it in use.

6) Impact of this action on the environment

| | | |
|------|--------|-----|
| High | Medium | Low |
|------|--------|-----|

7) Carrying capacity of the asset

8) Carrying capacity of the environment.

9) Are you aware of the legislation regarding the intervention/adaptation of the asset?

| | |
|--|----------|
| | Local |
| | Regional |
| | State |
| | National |

10) Accessibility

| | | | | |
|-----------|-----------|------|-----|----------|
| Excellent | Very good | Good | Bad | Very bad |
|-----------|-----------|------|-----|----------|

11) Infrastructure

| | Excellent | Very good | Very good | Bad | Very bad |
|--------------------------|-----------|-----------|-----------|-----|----------|
| Transport | | | | | |
| Accommodation | | | | | |
| Restaurants | | | | | |
| Complementary activities | | | | | |
| Dive Centres (UCH only) | | | | | |
| Other: | | | | | |

12) Competitor, collaborative competitors, and potential allies

a. Are there similar activities offered to your targeted audience?

a. Yes

b. No

b. Are these activities a potential threat to your proposal?

a. Yes

b. No

c. Is it possible to establish agreements, collaborations, or to develop activities (such as advertising or specific events) jointly with these potential competitors?

a. Yes

b. No

d. How is your proposal different or complementary to these other activities?

e. Are you working on a transnational asset?

a. Yes

b. No

f. Have you already identified potential partners/stakeholders/investors regarding your project?

a. Yes

a. _____

b. _____

c. _____

d. _____

b. No

g. Have you contacted them?

a. Yes

b. No

13) Working with the local community

a. Have you involved the local community in your project?

a. Yes

b. No

b. Is there local demand for your proposal?

a. Yes

b. No

c. I'm going to create it

c. Is there a local demand to enhance your designed asset?

a. Yes

b. No

c. I'm going to create it

d. How will be local community involved (if so)?

a. Research

b. Promotion

c. Development of complementary activities

d. Founding

e. Volunteer work

g. Other:

14) Your target audience

a. Describe your target audience

b. How will you reach your target audience?

c. Why is this an interesting/meaningful experience for this audience?

15) Telling your story

a. Briefly describe the essential aspects of your story and why is it going to be of interest to your audience

b. Which is your chosen perspective to tell the story?

a. Known historical figures

b. Regular people

c. Fictional character(s)

d. Other

c. My story :

| | High | Medium | Low |
|---------------------|------|--------|-----|
| Is inclusive | | | |
| Foments integration | | | |
| Links with present | | | |
| Is original | | | |

| | | | |
|---|--|--|--|
| Encourages active participation | | | |
| Is interactive | | | |
| Is historically accurate | | | |
| Captures situations with which it is easy to identify and empathize | | | |
| Is surprising | | | |
| Reveals an unknown part of History | | | |

16) What is the average duration of this experience? _____

17) SWOT analysis:

| | |
|--------------------------|-----------------------|
| Strengths (internal) | Weaknesses (internal) |
| Opportunities (external) | Threats (external) |

a. How do you plan to...

a. Maintain the strengths?

a. _____

b. _____

c. _____

b. Correct the weaknesses?

a. _____

b. _____

c. _____

c. Deal with/confront threats?

a. _____

b. _____

c. _____

d. Explore the opportunities?

a. _____

b. _____

c. _____

18) Project calendar:

| Development | Implementation | Asset Activation |
|-------------|----------------|------------------|
| | | |

19) Economic Issues:

a. Budget _____

b. Initial costs _____

c. Expected incomes _____

d. Maintenance-related costs _____

20) Economic Issues:

a. People and profile needed on the different project stages:

| Development | Implementation | Asset Activation |
|-------------|----------------|------------------|
| | | |

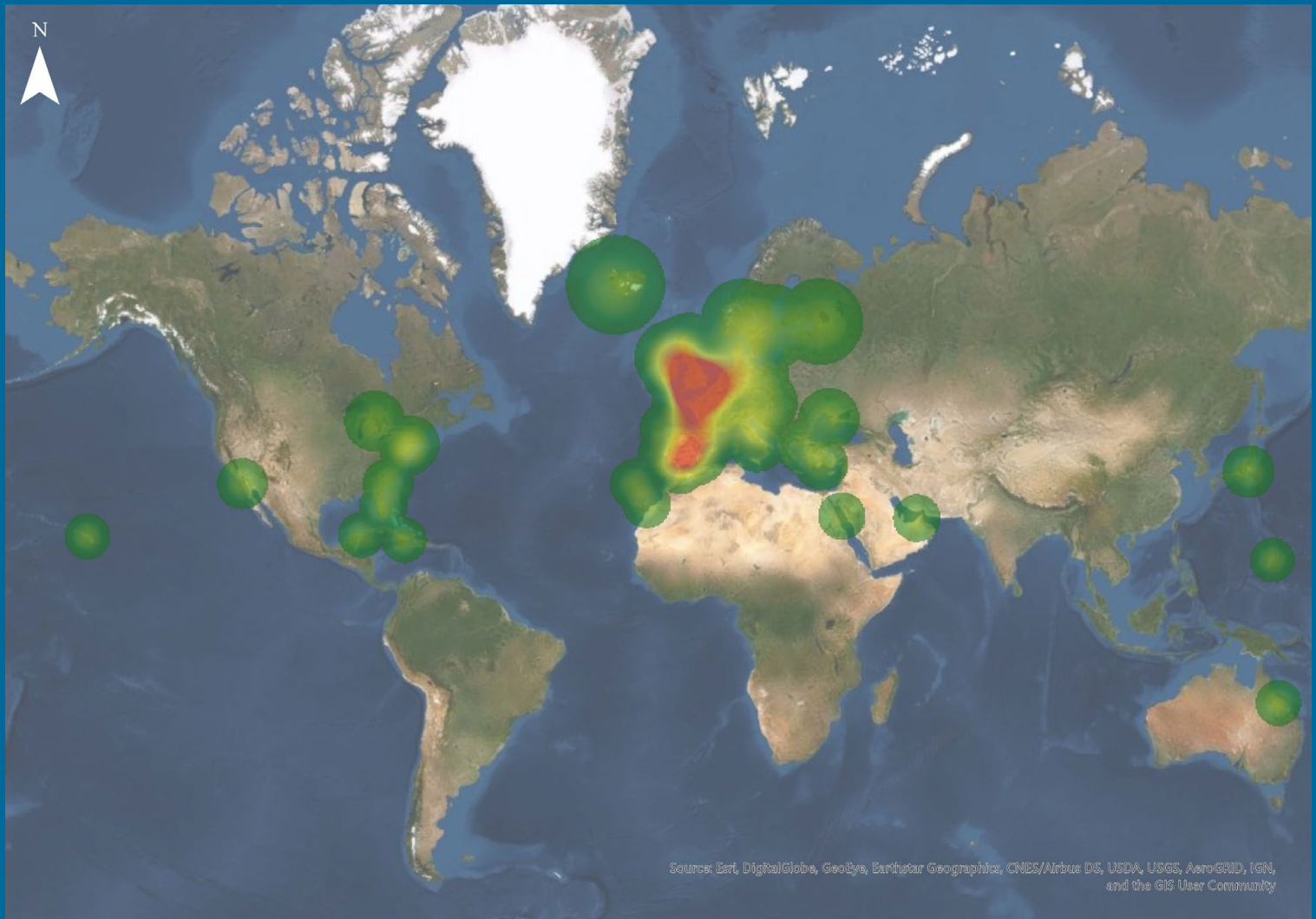
21) Key performance indicators. Indicate how and with which periodicity are you going to evaluate the status of your project (i.e. stakeholder's engagement, visitors' satisfaction, conservation issues, economics, marketing, etc.)

| | |
|--|---|
| | Weekly/monthly/annually/ 3 year/ 5 year |
| | Weekly/monthly/annually/ 3 year/ 5 year |
| | Weekly/monthly/annually/ 3 year/ 5 year |
| | Weekly/monthly/annually/ 3 year/ 5 year |

| | |
|--|---|
| | Weekly/monthly/annually/ 3 year/ 5 year |
| | Weekly/monthly/annually/ 3 year/ 5 year |
| | Weekly/monthly/annually/ 3 year/ 5 year |
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| | Weekly/monthly/annually/ 3 year/ 5 year |
| | Weekly/monthly/annually/ 3 year/ 5 year |
| | Weekly/monthly/annually/ 3 year/ 5 year |
| | Weekly/monthly/annually/ 3 year/ 5 year |

10

Case studies atlas



11

Exercises

EXERCISE 1. Discover your tourist destination

1) How many tourists arrive to your destination per year? _____

2) Would you like this number to increase?

a. Yes

· How much? _____

b. No

3) How well do you know them?

a. How many are families? _____

b. Age (If possible, add a percentage/amount to your answer):¹¹

· 0- 9 · 20-29 · 50-59

· 10-15 · 30-39 · 60-66

· 16-19 · 40-49 · ≤ 67

c. Gender (If possible, add a percentage/amount to your answer):

· Female

· Male

· Other

d. Origin (If possible, add a percentage/amount to your answer):

· Local · National · International

| | | |
|-------|-------|-------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

¹¹. Please note that depending on different factors (i.e. retirement age in your country) you may want to redistribute age groups accordingly to your own objectives and circumstances.

4) Is this the kind of tourism desired for your destination?

a. Yes

b. No

· If not, describe the kind of visitor desired and explain in a few lines what the needs and interests of your desired visitor are.

5) How do your visitors arrive?

a. Bus/Coach

b. Train

c. Car

· Private

· Rental

d. Boat

e. On foot

f. By bicycle

g. Other:

6) When? (If possible, add a percentage/amount to your answer):

a. What time of the year?

· Autumn

· Winter

· Spring

· Summer

b. What time of day?

· Morning

· Early afternoon

· Evening

· Night

· All day

7) How long do they stay? _____

8) How do they move around?

a. Bus/Coach

b. Train

c. Car

· Private

· Rental

d. Boat

e. On foot

f. By bicycle

g. Other:

9) Where do they go afterwards?

a. Home

b. They continue the journey to

10) What are their motivations/ expectations for coming?

11) How do they spend their money?

- a. Average spent by visitor: _____
- b. Percentage of expenses included in package tour: _____
- c. Not included _____
 - International transport: _____
 - Types of expenses:
 - Accommodation: _____
 - Meals: _____
 - Activities _____

12) Does your destination benefit from this spending?

- a. Yes
- b. No

13) Do they focus especially on a particular location or attraction?

- a. Yes
 - Is that a problem?
 - Yes
 - No
- b. No

14) Where do they get the information to prepare their visit from?

- a. Guides
- b. Films/Novels
- c. Internet
- d. Nowhere, they just go on adventure
- e. Other: _____

15) Are they satisfied, are they missing something? Name five things they value and five they miss or are not fully satisfied with.

| | |
|-------|-------|
| <hr/> | <hr/> |
| <hr/> | <hr/> |
| <hr/> | <hr/> |
| <hr/> | <hr/> |
| <hr/> | <hr/> |

16) How would you like your visitors to see you and feel about your destination?

17) GOALS: Now write briefly what your goals and target audience are.

REMINDERS AND NOTES:

EXERCISE 2. Discovering your history

1) How has the presence of the sea influenced the History of your local area?

2) What was the role your local area played in the great moments of History?

3) How did those events affect your area?

4) What main historical remains are preserved?

- ---
- ---
- ---
- ---
- ---

5) How did they come to exist?

6) What do these remains mean in the context of your local area, your country and Europe?

7) How did they influence the local community in their day, how did they affect people's lives?

8) What do they mean to people today?

9) How does this heritage relate to the environment, to other heritage sites in the same area or with similar heritage sites in other areas or countries?

10) What legacy has that part of history left in your community?

11) Do you know any festivities, events or traditions related to the sea that are still alive?

- ---
- ---
- ---
- ---
- ---

12) GOALS: We suggest you make a short list of the aspects of your area's maritime history that you think are better known or disseminated and those that have gone more unnoticed or have been given less attention.

| | |
|-------|-------|
| <hr/> | <hr/> |
| <hr/> | <hr/> |
| <hr/> | <hr/> |
| <hr/> | <hr/> |
| <hr/> | <hr/> |

REMINDERS AND NOTES:

EXERCISE 3. Discovering your transnational assets

We have seen some historical events and scenarios that can link your heritage to other countries or regions, but those were only some examples. Now it is your turn to think about your own heritage and your shared history!

| | | | | | |
|--|--|--|--|--|--|
| Your asset (tangible or intangible) | | | | | |
| Chronology | | | | | |
| Historical period | | | | | |
| Culture/Nation | | | | | |
| ¿Is it related to a relevant historical event? | | | | | |
| ¿Is it related to people's day to day? | | | | | |
| ¿Is it related to a recognizable historical figure? | | | | | |
| To which other region is it connected? | | | | | |
| How is it connected? | | | | | |
| Is there similar heritage in those regions? | | | | | |
| Is that heritage in those regions already activated and/or accessible? | | | | | |

REMINDERS AND NOTES:

EXERCISE 4. Discover your history. New perspectives

You already have a general, objective knowledge of the event or group of events in which the history of your maritime heritage is framed. Now:

1) What aspects of history, in relation to your heritage resource, seem most surprising, exciting or curious?

- _____
- _____
- _____
- _____
- _____

2) What makes this story special? Why should people get to know it?

3) Who were the most important human players in relation to the heritage site you want to showcase?

- _____
- _____
- _____
- _____
- _____

4) What happened to them? What were they like? How did they live? What did they feel?

5) In what ways could we empathize with them?

6) Think about the other people who were affected (common or lesser-known people) and ask yourself the same questions.

- ---
- ---
- ---
- ---
- ---

7) Through what sources do we know about and can we tell this story?

- ---
- ---
- ---
- ---
- ---

8) Are there testimonials from survivors or actual chronicles of these events?

- ---
- ---
- ---
- ---
- ---

9) Are there related anecdotes or legends? How did they originate?

10) From what perspective could this story be told?

- ---
- ---
- ---
- ---
- ---

11) What fundamental values can we learn from it? Could we apply them today?

- ---
- ---
- ---
- ---
- ---

12) Who is your main audience going to be?

13) How can you better tailor history and language to your audience interests and needs?

- ---
- ---
- ---
- ---

14) Is there any way to make your story more relatable and participatory, diverse and inclusive?

15) What would you like your visitors to remember?

EXERCISE 5: Start working with the heritage resource.

Prior issues

1) List the heritage resource or assets that you want to promote and mark the current state of conservation.

- | | |
|---------|---|
| • _____ | Perfect/Very good/ Good/ Quite degraded/ Degraded |
| • _____ | Perfect/Very good/ Good/ Quite degraded/ Degraded |
| • _____ | Perfect/Very good/ Good/ Quite degraded/ Degraded |
| • _____ | Perfect/Very good/ Good/ Quite degraded/ Degraded |
| • _____ | Perfect/Very good/ Good/ Quite degraded/ Degraded |

2) Do they need any actions prior to being showcased?

- a. Restoration
- b. Cleaning
- c. Research
- d. Archaeological survey/documentation
- e. Architectural evaluation
- f. Adaptation according to local legislation
- g. Others

- _____
- _____
- _____
- _____
- _____

3) What is the total cost of those prior actions?

4) What will the annual cost of maintaining the heritage resource be?

5) How will it being open to the public affect its conservation and maintenance?

6) Do any special measures need to be taken?

- a. Visitor-capacity limited.
- b. Specific visits.
- c. Visits need to be supervised.
- d. Other

7) What threats is your heritage resource facing at this time and what actions can counter these threats?

| | |
|-------|-------|
| <hr/> | <hr/> |
| <hr/> | <hr/> |
| <hr/> | <hr/> |
| <hr/> | <hr/> |

8) Does the development proposal respect the identity linked to the heritage site and the local community?

- a. Yes
- b. No. (Then you should work on a different proposal)

9) What is the degree of accessibility?

| | | | |
|------------------------|------|--------|-----|
| Arrival at the town | High | Medium | Low |
| Access to the resource | High | Medium | Low |

10) Accessibility in case of a wreck:

- a. How far is it from the coast?

- b. What depth is it at?

- c. What temperature is the water during the year?

d. What is the degree of visibility? _____

e. What is the degree of difficulty of the dive? Expert/High/Medium/Low

f. Does it require a specific qualification?

· Yes _____

· No

g. Are there dive centres nearby that can manage the visit? (Transportation, equipment rental, etc.)

· Yes _____

· No

11) Is the heritage site located in a natural environment?

· Yes _____

· No

12) If so, what impact will developing the site have on the environment? High/Medium/Low

13) What impact will the visitors have? High/Medium/Low

14) Is there sufficient infrastructure in place and is it of a good enough quality to generate a positive overall experience? (transport, accommodation, restaurants, etc.)

· Yes _____

· No

15) List ten key performance indicators to monitor and evaluate the status of your heritage site, the surrounding area and visitor experience, and ten complementary actions that can be used to carry out this monitoring (e.g. surveys, periodic impact reports or visitor count).

| | |
|---------|---------|
| √ _____ | → _____ |
| √ _____ | → _____ |
| √ _____ | → _____ |
| √ _____ | → _____ |
| √ _____ | → _____ |

EXERCISE 6

1) Name the heritage asset you want to virtualize

2) What is the main purpose of this virtualization?

3) You want to

- a. Generate a new experience
- b. Enrich an already existing experience

4) Who is your targeted audience?

5) Do you know how your targeted audience consumes information?
(content format preferences, media habits, most used devices, etc.)

6) Will the experience be accessible from anywhere or at a specific location?

- a. From anywhere
- b. Specific location
 - Portable
 - Stationary

7) How will your audience access this experience?

a. Personal/at home devices

a. Computer

b. Tablet

c. Phone

d. Video game console

e. Other

b. External devices _____

8) Will the user need help or guidance to enjoy the experience?

a. Yes

b. No

9) How many people will directly experience it at the same time?

10) Your experience

a. Requires innovative software or hardware that needs to be created

b. Is based on preexisting software or hardware

c. Will be adaptable for different platforms/devices

d. Will be exclusive

11) Do you want to monetize this experience?

a. No

b. There will be a fee to use it

c. It will encourage people to visit a destination

d. There will be purchasable content

e. Other _____

12) What previous resources do you have about your heritage asset?

a. Video

b. Photo

c. Maps

d. Cartography

e. Audio records

f. Scans

g. Others: _____

13) What are your educational main goals? What do you want your user to learn?

- _____
- _____
- _____
- _____
- _____

14) Think of an original/entertaining/interactive approach for each goal

- _____
- _____
- _____
- _____
- _____

15) Define your experience's

| | High | Medium | Low |
|-------------------------------------|------|--------|-----|
| Interactivity | | | |
| Entertainment | | | |
| Narrative's strength | | | |
| Amount of options given to the user | | | |
| Gamification | | | |
| Historic accuracy | | | |
| Adaptation to user's profile | | | |

16) Why should your user try this experience?

17) Average time of the experience:

| Learning how to use/ Adaptation | Activity | Processing the experience |
|---------------------------------|----------|---------------------------|
| | | |

18) What are the future needs of your experience to be fully functional?

- a. Continued promotion
- b. Updates
- c. Maintenance
- d. Adaptation to new devices and new models
- e. Generate new content periodically
- f. Others: _____

19) How do you plan to solve these issues?

REMINDERS AND NOTES

12

Useful resources

Blue Growth

[European Commission. Sustainable Blue Economy Finance Principles.](#)³²

[European Commission \(2012\) Crecimiento azul. Oportunidades para un crecimiento marino y marítimo sostenible.](#)³³

[European Commission \(2014\). EC Communication: A European Strategy for More Growth And Jobs In Coastal And Maritime Tourism, Brussels, 20.2.2014 COM \(2014\) 86 final.](#)³⁴

[Ecorys \(2016\). Study on specific challenges for a sustainable development of coastal and maritime tourism in Europe.](#)³⁵

[Ecorys \(2012\). Scenarios and drivers for sustainable growth from the oceans, seas and coasts.](#)³⁶

[Honor Frost Foundation \(2015\) The Social and Economic Benefits of Marine and Maritime Cultural Heritage Towards greater accessibility and effective management.](#)³⁷

Heritage

[UNESCO: Business Planning for Natural World Heritage Sites - A Toolkit.](#)³⁸

[UNESCO: Heritage for peace and reconciliation: safeguarding underwater cultural heritage of the First World War.](#)³⁹

32. https://ec.europa.eu/maritimeaffairs/befp_en?2nd-language=fi

33. <https://ec.europa.eu/transparency/regdoc/rep/1/2012/ES/1-2012-494-ES-F1-1.Pdf>

34. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014DC0086&from=EN>

35. <https://op.europa.eu/en/publication-detail/-/publication/ab0bfa73-9ad1-11e6-868c-01aa75ed71a1>

36. <https://webgate.ec.europa.eu/maritimeforum/en/node/2946>

37. https://honorfrostfoundation.org/wp-content/uploads/2019/06/HFF-Report_Social-Economic-Value-of-Marine-and-Maritime-Cultural-Heritage.pdf

38. <https://whc.unesco.org/en/businessplanningtoolkit/>

39. <https://unesdoc.unesco.org/ark:/48223/pf0000231426>

[UNESCO: Heritage for peace and reconciliation: safeguarding underwater cultural heritage of the First World War. Manual for teachers.](#)⁴⁰

[UNESCO: Manual for Activities directed at Underwater Cultural Heritage.](#)⁴¹

[UNESCO's Best Practices related to Underwater Cultural Heritage.](#)⁴²

[ICOFORT: ICOMOS International Scientific Committee on Fortifications and Military Heritage.](#)

[Bijzonder Comité voor Herinneringseducatie \(2015\), TOUCHSTONE REMEMBRANCE EDUCATION \(Herinneringseducatie.be\): A manual for the quality of remembrance education projects.](#)⁴³

[UNESCO's Underwater heritage related more relevant publications.](#)⁴⁴

[Commemoration toolkit.](#)⁴⁵

Tourism

[International Cultural Tourism Charter Mexico 1999.](#)⁴⁶

[Biblioteca de la UNESCO para un turismo sostenible.](#)⁴⁷

[ICOMOS International Cultural Tourism Charter \(2002\).](#)⁴⁸

[Ecorys \(2013\). Study in support of policy measures for maritime and coastal tourism at EU level.](#)⁴⁹

[European Commission, 2016. Guide on EU funding for the tourism sector, 2014-2020.](#)⁵⁰

40. <https://unesdoc.unesco.org/ark:/48223/pf0000231426>

41. unesco.org/culture/en/underwater/pdf/UCH-Manual.pdf

42. <http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/best-practices/>

43. <https://herinneringseducatie.be/wp-content/uploads/2014/06/Touchstone-Remembrance-Education.pdf>

<http://www.unesco.org/new/es/culture/themes/underwater-cultural-heritage/publications-resources/publications/laurentic>

45. <https://www.creativecentenaries.org/toolkit/case-study/laurentic>

46. https://www.icomos.org/charters/tourism_e.pdf

47. <http://whc.unesco.org/sustainabletourismtoolkit/resources>

48. <https://australia.icomos.org/wp-content/uploads/ICOMOS-International-Cultural-Tourism-Charter-English.pdf>

49. https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/docs/body/study-maritime-and-coastal-tourism_en.pdf

50. https://ec.europa.eu/growth/content/guide-eu-funding-tourism-sector-updated-version-0_en

