**Training course for shipwright**
14. Preservation, restoration and heritage
University of Murcia

# 14. Preservation, restoration, and heritage

## University of Murcia

## Objective

At the end of this module, the student will understand the conception of shipwright as heritage, both tangible and intangible, and thus its importance in the society. Also, the student will comprehend the different ways to preserve a disseminate heritage, the institutions that conduct that tasks, and how they work. Therefore, he/she will be able to establish contact with them to achieve the main goal of preserving the craft, both supplying information and materials or obtaining them.

## Duration

26 hours.

## Outcomes

1. Identify assets belonging to heritage
2. Valuing heritage as one of the main hallmarks
3. Know the state and European laws and norms of cultural heritage
4. Mastering the procedures for declaring and cataloguing goods
5. Inferring the importance of heritage in society
6. Understanding the relevance of documentary heritage, guarded in archives, to today's society
7. To argue the variety of interventions that can affect the paleontological, archaeological, and documentary heritage.
8. Describe the authorization regime to which archaeological and paleontological actions are to be subject
9. Classify storage and custody systems and regimes for documentary heritage in archives
10. Differentiate the types of museums and the legislation that affects them and their organizational regime. ·
11. Know the techniques and processes of restoration and conservation of cultural assets
12. Understand that cultural heritage must be disseminated, promoted and made known through the whole of society.
13. Being able to manage information and knowledge about Heritage

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# Contents

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# 1. Heritage as a manifestation of our past

The Historical Heritage is the main witness of the historical contribution of each people or nation to universal civilization and its contemporary creative capacity. It is a collective wealth that contains the most appreciationworthy expressions in the historical contribution of each people or nation to universal culture. Its value is provided by the esteem that, as an element of cultural identity, it deserves the sensitivity of citizens, because the goods that make it up have become patrimonial, due exclusively to the social action they fulfill, directly derived from the appreciation with which the citizens themselves have been revaluing them. Many times, there is an enormous ignorance of this heritage, as in the case that concerns us of the naval and maritime heritage that we have received, and more specifically of the techniques of riverside carpentry and its products: ships.

Although there is legislation in this regard, it is often the citizens themselves who must contribute to the value of this heritage received. The best way to achieve this is dissemination, either by researching on unknown topics or by disseminating what has already been researched, making it known more easily to all interested parties. For this reason at the end we include a topic on dissemination and dissemination. In the Chair of History and Naval Heritage we have been working in this direction for more than 10 years. To this end, we published two collections of books on paper, and we have generated a series of Internet resources to publicize this heritage, disseminate and raise awareness among citizens about its enormous importance.

## 1.1 Definitions of Heritage

It is the cultural heritage of the past of a community, with which it lives today and which it transmits to present and future generations (UNESCO). These heritage assets (tangible and immaterial) have been transmitted from generation to generation, have evolved in response to their environment and contribute to instill in us a sense of identity and continuity, creating a link between the past and the future through the present.

In a global way we find two very different types of heritage: the tangible, that what we can see, touch, observe and another that are not on a support, which is just as important, called intangible, but to appreciate it must be fixed in a medium such as paper, photography, audio, video ...

As far as heritage is concerned, there is one that is easily visible and another that is not. This feature differentiates them into:
- **Tangible or tangible heritage**. The one that has been transmitted on a support, be it paper, wood, fabric among others. Example: fishing regulations, oars, vessel hulls, sails, rigging...
- **Intangible or intangible heritage**. The one that must be collected and fixed in a current support. Vocabulary typical of the men of the sea, dances, parties, oral traditions, among others. For example, vocabulary needs to be listened to by sailors or taken out from ancient documents, search for its meaning,

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organize it and publish a dictionary. The dances, to know how they are, it is necessary at least to record them on video. Oral traditions also need to be collected on paper or recorded to whom they are told.

UNESCO also speaks of the obvious fragility of intangible heritage because its maintenance depends on different social groups. Think, for example, of the traditional artisan work that is lost due to technological advances or, simply, because the need for the manufactured product has disappeared. There are many that have already been lost. With the recognition, first by UNESCO and then by private and especially public organizations, of the importance of this type of intangible heritage, not only is its importance valued and recognized as traditional elements, but the need to be respected, publicized and, like all heritage, is established.  protected.

It is, in short, to value this type of heritage based on tradition in the face of a cultural globalizing process that can end up standardizing the traditional and cultural systems of all the time. We have already known many processes that have destroyed traditions from practically every corner of the planet. Let's keep that in mind and protect what roots us.

## 1.2 Types of heritage

There are other classifications, which cater to various characteristics. These are what determine the planning for its recovery and the methods of conservation/restoration.

(a)Whether or not **human intervention** has taken place:

- Manufactured or built by the hand of man, such as equipment.
- Natural, like the sea, the waves or the wind.

b) According to the **place** where it is located:

- Terrestrial: Archaeological, like the ancient arsenals.
- Underwater: such as sunken ships or submerged cities
- Aerial

(c)Considering the **manifestation of human activity**:

- Historical, goods of any kind that are witnesses (evidences) of the evolution of Humanity, of the achievements achieved, buildings, instruments, documents, products, techniques, knowledge, art and techniques. A ship found in the depths of the sea is an example of historical heritage.
- Artistic, goods of artistic value that provide the creative capacity of a people throughout its history. There are works of art that convey to us how the past was, such as those that collect the activities of the ancient riverside carpenters, coopers, etc.
- Industrial, scientific and technical, it collects objects, machinery, apparatus that were used in the past in industrial, scientific and technical activities. A sample of this industrial heritage are the old shipyards or the disused lighthouses.

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- Ethnological-anthropological. It is "traditional and popular culture, and that is nothing more than the set of creations that emanate from a cultural community founded on tradition, expressed by a group or by individuals and that recognizably respond to the expectations of the community as an expression of its cultural and social identity; norms and values are transmitted orally, by imitation or in other ways. Its forms include, among others, language, literature, music, dance, games, mythology, rites, customs, crafts, architecture and other arts." An important part of this heritage is intangible. For example, the seafaring vocabulary that was used in the Mediterranean in the Modern Age or the uniforms worn by the officers of the Royal Navy.

- Documentary, archival and bibliographic. It is any manifestation collected in a support that is usually paper, but also parchment, tree bark or another system or way of collecting human ideas and thoughts. It has content and continent, and both are important for the information they can convey. Nautical charts, for example, are documentary heritage, can be in archives or libraries and can be included in a catalog of funds of either of these two institutions.

(d)      **Responsibility for** their custody
   - Civil
   - Military
   - Ecclesiastical

e)      **Place** where it is preserved/exhibited
   - Museums
   - Records
   - Libraries
   - Showrooms
   - Other heritage institutions, such as interpretation centres or ecomuseums
   - Parks
   - Coasts, coastline

### 1.3 Heritage management

Heritage, whatever its typology, must be managed, and this management involves a process composed of a series of actions aimed at its protection and dissemination, which are:

-   Recovery of the object(s) from the site where it has been found if in situ conservation is not possible. In case it is possible to put the means so that it does not degrade in the medium in which it is located.
-   Protection. The team that has found the cultural property has a part of protection activity and national and international regulations as well.
-   Cataloguing and description within its context.

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- Conservation and restoration of the goods found.
- Exhibition in heritage institutions.
- Dissemination through all possible means, both physical and digital.
- Playback: copy, photo or video, among others.

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# 2. Heritage institutions

Although there are more, here we deal with those that can offer greater support and help to the profession of riverside carpentry, since they contain sources that help contextualize the old ships.

## 2.1. Archives

The archives are important in the riverside carpentry because they serve to contextualize old ships, to look for plans and other documentation that helps to locate an old boat found, but also to be able to find a lot of information about the current construction of old ships, since they contain the documentation generated in the old ships.

An archive can be both the building in which the documents are preserved and the documentary collection itself. Its purpose is to have the documentation organized, in such a way that it is recoverable for the use of the administration and as a source for history.  The ultimate goal is service to society.

 Archives are important for administration and culture, because the documents that make them up are essential for background-based decision-making. Once they are valid, these documents are potentially part of the cultural heritage and national identity.

a) **Transcendence**. Their importance is generated by the value they have for administration, research, citizens and the State, economic and social development, scientific and technological development and for the promotion of culture and the development of national identity.

b) **Function** of the archives, they fulfill an evidentiary, guaranteeing and perpetuating function.

c)  **Archival services**. Through these, the documentation of an entity is made available to users, for information purposes, for consultation and research.

d) **Relevant concepts**:

- Document. From the archival point of view, the document is born as a natural product of the administrative activity of an entity, and constitutes a unique piece that serves as testimony, information and can be used as evidence or source of research.

- Archival documents are the record of information produced or received by a person or entity by reason of its activities or functions, which has administrative, fiscal, legal value or scientific, economic, historical or cultural value, and must be subject to conservation. Similarly, from the point of view of content, documents are prepared in compliance with functions assigned to a person or entity and as such are classified.

- Source of documents from any file. Archival documents originate in the production offices because of specific functions or in compliance with activities. There they acquire as a result of their procedure, administrative, fiscal, legal, accounting or technical value that make the document an important

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information instrument for decision-making and to serve as a testimonial source of the mission of the entity that generates them.

## 2.1.2. Types of archives

We are going to make two great typologies. The one that differentiates them according to the origin of the documentation they keep and those that distinguish them according to the age of the funds. Apart from those that will be seen here, there are more types, which can be found in Mundet's Dictionary of Archival (2011).

**According to the origin of the documentation they keep**

a) **National archive**. It is the archive made up of documentary collections produced by institutions whose jurisdiction covers the entire national territory. There is usually one in each country, although there are exceptions. In Spain there is the National Historical Archive.

b) **Nobiliary archive**. Gather the family documentation of one or more families of the nobility. They are the result of the written accumulation of the activities of a family over several generations, both personal and public of its members, of the administration of its assets and properties of the exercise of jurisdictional powers and of its policy of alliances and marriages with other families. Archive of the Nobility

c) **Private archive**. Organic set of documents produced and/or received in the exercise of their functions by natural or legal persons in the course of activities not governed by public law.  Archive of the Sierra Pambley Foundation

d) **Protocols archive**. Organic set of documents produced by the activity of one or more notaries of the same district and that are kept in this archive under the custody of the notary-archivist until a period of one hundred years elapses, date on which they are transferred to the corresponding provincial historical archive. Like the Historical Archive of Protocols of Madrid.

e) **Familiar archive**. It is the private archive that brings together the documentary collections of one or more related families and their members, relating to private matters, mainly the administration of their assets and, occasionally, to their public activities. Archive of the Sierra Pambley Foundation

f) **Ecclesiastical archive**. It is the private archive that brings together the documentary collections produced by the organs of the regular and secular Catholic Church and other confessions. Ecclesiastical Historical Archive of Biscay

g) **Military archive**. It is the archive that brings together the documentary collections produced by the military organs, both those of land and those of sea and air. Naval Archive of Madrid. An outline with the Navy archives is included.
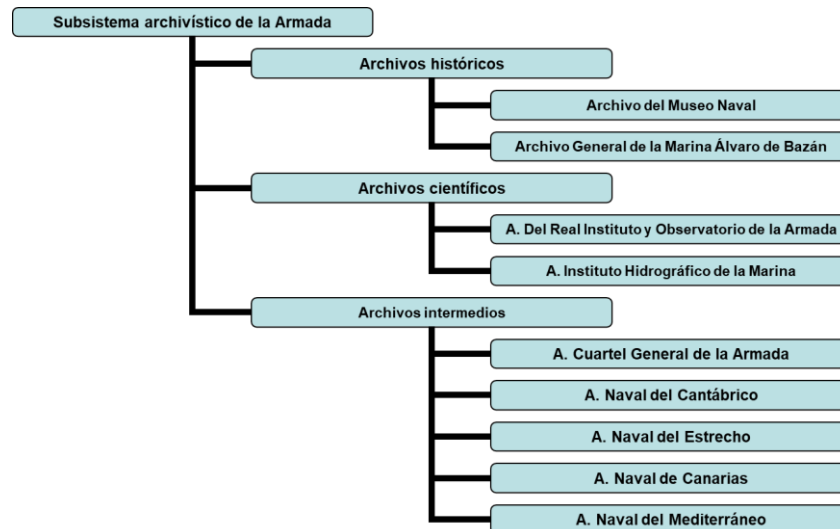
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Watch this 4-minute video about the Spanish Ministry of Defense archives: https://www.youtube.com/watch?v=XviE2fL4bvA

Or this from the general archive of Segovia (Army: https://www.youtube.com/watch?v=PEllzDixsos



**According to the use that is given of the documentation** that is kept in them, which is linked to the antiquity of this is:

a) **Historical archive**. The one who preserves the documents selected for their permanent value, in conditions that guarantee their integrity and transmission to future generations, since they constitute part of the historical heritage of nations and, therefore, of Humanity.

Importance of the historical archive: They allow the elaboration or reconstruction of any activity of the administration or of specific people in the exercise of their functions and / or activities, which can be public or private.

b) **Intermediate file or central archive**. The one in which the massive and low-cost installation of documents already valued, or that are going to be subject to valuation, is ensured, so that organizations are freed from documents that are no longer necessary for their daily work and also avoid collapsing historical archives. Currently, with digital files, practically no information is lost, because the documentation that is decided to be destroyed is digitized, and although the support is lost, the data continues to be held by the organization.

c) **Live, office or management archive**. The one that contains the set of documents with which an organization works, those that it usually uses for its activities, and that it is necessary to have at hand. To consult, check, search for data, among others.

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## 2.1.3. Archivistics

It is the Science of Archives. It is an emerging Science whose object is archives and their content, and whose purpose is to store information and make it recoverable for use, and whose method is articulated around archival standards. It is necessary to understand that archival is responsible for document management in its broadest sense of the word, starting with the treatment and management of documents from their origins in the administrative process to their definitive conservation, which implies the complete life cycle including the analysis of the needs of organizations, the establishment of a conservation calendar, the rational design of documents, as well as their transfer to historical archives or disposal.

In its purpose of serving society, the method used is constituted by the procedures and tasks carried out to achieve the aforementioned end of service. To carry it out, a set of principles and rules are used, which start from the basis that the document is part of a structured whole that, isolated, does not make sense, since its interest lies in the relationship with the documents that precede or follow it, in that it is something like a snapshot within a documentary sequence.

The consideration of this serial character is fundamental for archival approaches and will also be the one that marks the differences with Librarianship.

**Archival principles**

The principles of the archival organization of the documentary collections are respect for the origin and natural order of the documents which are given by the office producing them.

a) **Principle of provenance**

It is the one according to which each document must be located in the documentary fund from which it comes, taking into account that the unity and independence of each fund must be maintained and in this the integrity and serial character of the sections, series and files. This principle is valid for both historical and administrative archives, since in all cases the historical structural evolution of the institution must be known or reconstructed, identifying in it the dependencies and functions that it develops or developed in the past, integrating around each one the corresponding documents grouped in series.

For the application of the principle of provenance, the entity producing the documents, the production unit, the functions developed and the documents produced grouped into series must be identified. A documentary classification must be made reconstructing the structure of the documentary background.

b) **Principle of natural order**

It refers to the order in which the documents are kept within each folder or file, placing them consecutively according to the administrative actions that gave rise to their production. When a documentary series is composed of several

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files or folders, they must also be located consecutively respecting the natural order in which they were formed.

## 2.2. Libraries

Like archives, libraries can be of great interest to obtain information about old ships, their context, equipment, passengers, etc. Most of its background is books, although they may contain maps, videos, illustrations, especially those with an old background. The library is the place, physical or virtual, in which the user finds those resources that meet their information needs, from intellectual and cultural, to those related to leisure and entertainment.

For its part, the librarian is that person, with the necessary training, who is at the service of the user to offer the information he needs, from intellectual and cultural to those related to leisure and entertainment, physically or virtually, responding to his queries or generating resources and tools where the citizen finds what is of interest to him.

### 2.2.1. Types of libraries

a) **National libraries**. They are the cultural institutions in which knowledge and the creation of a country are deposited. Specifically, the National Library of Spain is responsible for compiling the Spanish bibliographic and documentary heritage, guaranteeing its integrity and facilitating access to all citizens and future generations.

b) **Public libraries**, those that are at the service of a certain community, whether a neighborhood, a town or city, a region or province; that serves all its inhabitants whatever their age or dedication, and in general, free of charge; they have funds on all subjects; they are at the same time information centers and cultural centers, encourage reading and support formal education and self-learning, regardless of the public or private body on which they depend.

c) **Libraries of educational centers**. They can be school and university:

    a. School library: that space where students and teachers have access to all kinds of content and information, a space for leisure and escape, and of course for the training of the youngest.

    b. University library: they are aimed at supporting educational and research programs in universities. The potential user population is the professors and students of the university (and also other researchers). The holdings of university libraries must be specialized and based on different branches of knowledge.

d) **Specialized libraries**. The specialized library is characterized by a thematic particularity, both of its collection and of the information services provided. This happens because it is aimed at users whose profile is limited to the

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professional, scientific and technical fields related to the subjects of the fund. For example: Library of the College of Architects.

e) **Digital libraries**. A digital library is an electronic resource that provides free and open access through the Internet to thousands of digitized documents, with the aim that users can have a reference image that speeds up and facilitates the dissemination of original documents, which also allows the conservation in their original support to ensure their durability.

## 2.2.2. The technical process in libraries

The collection is a set of documents, whatever their support (monographs, periodicals, music, electronic resources, etc.), which the librarian, taking into account the needs of the user, gathers and manages to guarantee their access and use. The steps that are taken within the technical process of a library, in general, are: selection and acquisition of documents, registration and sealing, cataloging and classification, evaluation and purging.

We start from the idea that every bibliographic collection is incomplete, because it is impossible to have everything, for economic, personal, spatial reasons, etc. Therefore, it is necessary to select what is to be acquired. Selection is, therefore, the process by which it is decided which documents are incorporated into the collection and which are not, based on the information needs of the users.

Once the materials have been selected, the next step is to acquire them. Therefore, acquisition is the process by which the library obtains the previously selected documents, in order to meet the information needs of its users. The ways through which a library can acquire a document are: by purchase, or free of charge (by exchange of publications, donations, or by Legal Deposit).

The record number, as its name suggests, is an inventory number that is assigned to each document when it enters the library. Its function is twofold: on the one hand, to indicate how many documents are in the library, on the other, to distinguish the copies in loans, counts, etc.

It can have two formats:

- R. 1123 (is part of a simple correlative sequence).
- R. 97-1123 (is document 1123 that entered the library in 1997).

When registering, it must be taken into account that each document corresponds to a registration number. That is, if we have, for example, three identical copies of the same document, each of them will have a different registration number. However, volumes or parts of a work shall bear a single registration number.

Registration numbers are consecutive, none should be left blank and should never be repeated; nor will they be reused, even if they remain blank due to loss or purging of the books that hold them.

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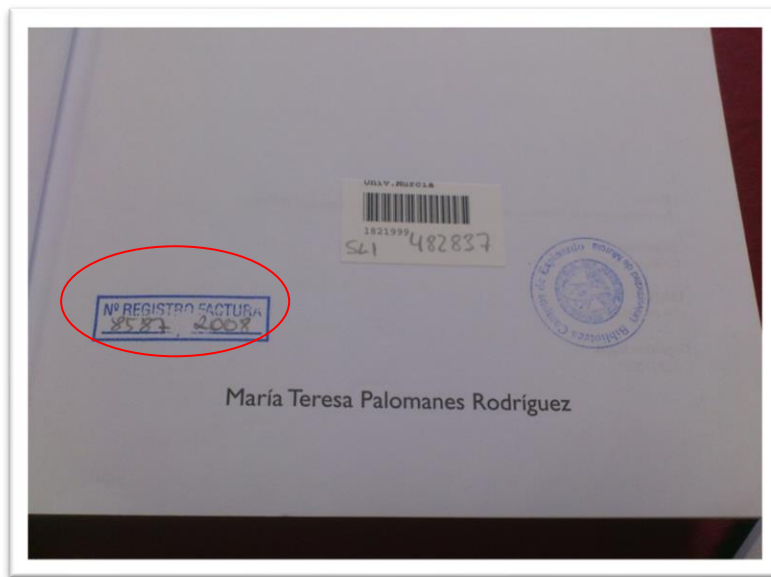
And at the bottom left of the bibliographic record:



| 017 NAV inv | NAVARRO MALLEBRERA, Rafael |
|---|---|
| | Inventario de bienes de Jorge Juan y Santacilia : transcripción y estudio de la biblioteca / Rafael Navarro Mallebrera, Ana María Navarro Escolano . – Alicante : Instituto de Estudios Juan Gil-Albert, 1987 |
| | 189 p. ; 24 cm |
| | Tít. de la cub.: La biblioteca de Jorge Juan |
| | ISBN 84-7784-003-2 |
| | 1. Juan, Jorge-Biblioteca-Catálogos |
| | I. Navarro Escolano, Ana María |
| | II. La Biblioteca de Jorge Juan |
| | 017.2 Juan, Jorge |
| Número de registro → | R. 36306 |

Sealing is the operation that formally declares ownership of the work by the corresponding library. This makes it possible to prove the belonging of the work to the library, and also helps to verify the pagination, since often, in the course of binding, the booklets are reversed, folded, omitted or poorly printed, in which case the books will have to be returned to the bookcase, even after they have been sealed.

Like the registration number, it should appear on the cover of the book:

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María Teresa Palomanes Rodríguez

Cataloging consists of:
- Make the description of a document to be able to identify it.
- Decide the access points for the document.
- Provide data that allows the physical location of the document within the collection.

On the other hand, classifying is the operation by which it is established to which topic or topics a book or document should be assigned, based on the analysis of the elements of which its content is composed, and according to a certain classification system. In other words, the principle and usefulness of bibliographic classification is to order and gather the works according to the subject matter they deal with.

The evaluation of the collection is the process through which the strengths and weaknesses of the documentary fund are identified, in order to know if it is still useful for users, if it continues to satisfy their information needs, among others.

## 2.3. Museums

In these institutions there are objects that can be of great interest, since they are those that were used in the past. In archives and libraries there is mainly documentary heritage, while in museums other types of archaeological, naval, ethnological, artistic heritage are preserved that can help contextualize and find clues about the ships we want to preserve or build.

They are permanent institutions that acquire, preserve, research, communicate and exhibit for the purposes of study, education and contemplation, joint and collections of historical, artistic, scientific and technical value or of any other cultural nature.

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### 2.3.1.  Types of museums

There are numerous categories of museums with their corresponding subcategories, but these are the most linked to the theme of the specialization course:

- **Anthropological**: They are museums whose pieces and contents deal with the biological and social aspects of the human being, highlighting cultural diversity.

- **Archaeological**: They are dedicated to the dissemination of archaeology and whose collection comes mostly from excavations. If the museum is located next to the archaeological site of origin of its collection, it is a site museum. The New National Archaeological Museum, Pergamon Museum.

- **Architecture**: Its contents are dedicated to studying the construction processes, their creators and the buildings designed by them. In naval heritage it is very extensive, and can include coastal fortifications, lighthouses, arsenals, shipyards, among others. Its exhibition is usually based on the exhibition of projects and construction materials (models, plans, photographs ...), although they can also be done in the buildings themselves.

- **Contemporary art**: Its works and contents have a chronology that includes from the late nineteenth century to the present. MUSAC, The New National Gallery in Berlin.

- **Decorative arts**: These are museums whose works and contents are dedicated to those arts intended to produce functional and ornamental objects, such as goldsmithing, embroidery, glass, ceramics or furniture. Museum of Decorative Arts in Paris, Victoria & Albert Museum in London.

- **Fine arts**: Dedicated to the different artistic disciplines, and whose collections are mainly made up of painting and sculpture. Picasso Museum of Barcelona, The Academy of San Fernándo, The Museum Garden, Vatican Museums, Museo Storico delľ Etá Veneta de Bergamo.

- **Natural Sciences**: They are museums dedicated to the knowledge of the diversity of the natural world and among their collections are, among other things, samples of flora, fauna and geological.  The Odiel Marshes.

- **Scientific-technological**: Its objects and contents serve as instruments for the study and dissemination of science among society. They are usually quite intuitive and contain objects that can be manipulated and interactive installations. Geomining Museum of Madrid, Minas de Riotinto (Huelva).

- **Ethnographic**: They are museums whose objects and contents deal with folklore and the popular uses and customs of a society. Those linked to fishing and other maritime activities are of great interest.

- **Historical**: Its contents are dedicated to disseminating the general history of a specific city or territory to help understand the events that occurred in it. (Museo Canario, Born Cultural Centre).

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- **Maritime and naval**: Its objects and contents deal with navigation and everything related to the sea. Les Drassanes like you've never seen them.
- **Military**: These are museums whose objects and contents are associated with the army or war events. Naval Museum of Madrid.
- **Musical**: Its objects and contents are associated with music and its historical evolution. Within this there are several typologies: museums of musical instruments, houses museums of composers, museums associated with opera houses, museums of popular music, etc. (Related articles: MIM – Brussels, Museum of Music of Venice, The Houses Museum of Jimi Hendrix and Handel in London. Military music and in particular those heard on ships is of great interest to understand life on board in past times. In the finds of sunken ships (wrecks) musical instruments such as chifles have sometimes been found.

In Spain, for example, there are Museums of the following types:
- State ownership managed by the Ministries of Culture (National Museum of Underwater Archaeology), Defense (Naval Museum of Madrid and its subsidiaries) or other ministries.
- those transferred to the Autonomous Communities (Maritime Museum of the Cantabrian Sea);
- those managed by different Public Bodies, such as the Casa da Navegación de Baiona, locally owned,
- the ecclesiastics and
- Private Museums, foundations or cultural associations.

### 2.3.2. Maritime museum and naval museum

A maritime museum houses heritage assets that have a close relationship with the activities that make use of the sea, rivers and large lakes for an economic and social purpose, but also with fauna, coasts and ports.

The naval ones are characterized by guarding Heritage linked to the human activity of crossing the waters, from a military point of view. They are the ones that preserve the greatest amount of heritage related to riverside carpentry.

### 2.3.3. Museology

Museology is a science that is responsible for the analysis and study of museums and the reflexive investigation of a museographic phenomenon. To understand a little more its study can be defined as the organizational theory that provides knowledge and methods from a methodological structure on how to preserve the museological heritage.

The traditional functions of the museum are five: collecting, conserving, researching, disseminating and educating. Each of these functions gives rise to a specific area of attention that involves a staff specialized in the fulfillment of that function.

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Apparently, museums have been conceived as temples of knowledge, but the new studies make museums think of them as centers of development linked to the population where they are located, becoming centers of integral management of the heritage of the locality where they are located. Thus we find that museums perform six functions towards the outside of the museum:

1. **Reactivation of heritage**: through communication between the heritage exhibited within the museum, the public and the territory. Within this function we can highlight the management of spaces and monuments within our historic centers.

2. **Tourist dynamization**: Museums are centers of interpretation and reception of visitors, being able to develop this function with the implementation of routes that have as a beginning or end the museum itself.

3. **Cultural dynamization**: Museums can organize cultural events in order to attract the public, in addition to making contact with institutions and companies.

4. **Heritage protection**: with this function, the museum becomes guardian and protector of the heritage of the locality through the development of the relevant legislation.

5. **Attraction of the public**: A fundamental function, where the prominence of the museum is the visitors, since everything is focused on them. Thus the museum becomes a place of recreation, study, creativity and discovery, guaranteeing physical and intellectual accessibility to all the elements exhibited.

6. **Local development**: This last function has occurred to us from the development of the rest of the functions, where the museum would be an agent of development that would create endogenous wealth and jobs. It seems unbelievable, but today there are still people who ignore this fundamental function of museums. The museum would participate in the social and cultural development of the population, creating jobs that would guarantee the permanence of young people in the populations.

### 2.3.4. International institutions on museums and museology

The International Council of Museums, better known by the acronym ICOM (International Council of Museums), is a professional, institutional and non-governmental body, whose main objective is the promotion and development of museums around the world. Created in 1946, it currently has more than 8000 members in 120 countries. It is associated with UNESCO as a category A non-governmental organization and enjoys consultative status within the Economic and Social Council of the United Nations. The Secretariat and the Paris-based Information Centre ensure the day-to-day functioning of the organization and the coordination of its activities and programmes.

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Consulting the main museums in Europe, by country, is as simple as consulting the following link: https://www.raicesdeeuropa.com/principales-museos-de-europa/ Asking those responsible for communication or conservation can be a good first step to orient yourself in the conservation of the maritime heritage of the area in which we are. To find smaller institutions, you can head to https://eulacmuseums.net; the website where you can discover the world of small regional museums and their communities in Europe, Latin America and the Caribbean.

## 2.4 Other heritage centers

Although there are more options, due to its link with the maritime heritage here we will see the interpretation centers. These are the result of the evolution of the museums that were formerly in the protected areas, where buildings were restored and adapted to receive the botanical and zoological collections. They are spaces that reveal the meaning and relationship of heritage with the visitor who arrives at the site that contains it, through direct experiences and applying the principles, qualities and strategies of the discipline (Heritage Interpretation).

They are usually located at the entrance of the site or at the beginning of its route, since it presents a synthesis of the cultural or natural assets that are preserved or presented (nature reserves, museums, botanical gardens, aquariums, zoos, archaeological sites, etc.). In them visitors have the opportunity to receive significant information and experience experiences in relation to the assets of the place.

Its objective is to provide information, guidance and, above all, sensitize visitors through relevant sensory experiences that promote environmental interpretation, helping the conservation of natural and cultural resources.

They can work in different types of buildings, from small and simple constructions to large buildings. Examples:

- Interpretation of the Phoenician ship of Mazarrón. http://www.visitamazarron.com/es/que-hacer/cultura-y-patrimonio/museos-y-centros-de-interpretacion/centro-de-interpretacion-barco-fenicio-de-mazarron/
- Santurtzi Itsasoa interpretation center. Santurce and the sea. It is located in the Fishermen's Guild. http://turismo.santurtzi.net/es-es/quehacer/museodelmar/Paginas/Centro-de-interpretacion-Santurtzi-Itsasoa.aspx
- Ecomuseums. They are museum centers oriented on the identity of a territory, based on the participation of its inhabitants, created in order to grow the well-being and development of the community. It is a model in which professionals of culture, tourism or socio-cultural animation, together with the administrations, generate a formula to carry out revitalization projects in the territory and its patrimonial recovery for the benefit of society. Ex: that of artisanal fishing of "Puerto López" in Ecuador.

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# 3. Regulations for the legal protection of cultural heritage

The protection and enrichment of the assets that make it up constitute fundamental obligations that bind all national, regional or any category of public authorities.

### a) European Union: HEREIN system

The Council of Europe at the request of member states generated the Herein system to take stock of changes in legislation and practices in participating countries, as well as to provide a forum to facilitate the sharing and sharing of information on cultural heritage. The project aims to encourage the implementation of heritage projects that are capable of improving the quality of life and living environment of citizens.

It forms a European Cultural Heritage Information Network that brings together European public administrations in charge of national cultural heritage policies and strategies to form a unique cooperation network in the field of Cultural Heritage.

Although it previously existed in various forms, the present was fully formed in 2014 by the development of its two main components:

- Create a network of national coordinators, appointed by the relevant Ministries, who:
  - Facilitate the sharing, exchange and analysis of information on cultural heritage;
  - Explore topics and areas of work that address current challenges and problems in that field.
- Develop a database, with input from national coordinators, which provides:
  - an inventory of European heritage policies in 38 Member States of the Council of Europe;
  - terminology relating to cultural and natural heritage in 14 European languages.

### b) MUNDIAL. UNESCO's Declaration of World Heritage

The declaration of assets as World Heritage is a recognition granted by the United Nations Educational, Scientific and Cultural Organization (UNESCO) to the sites to those goods with characteristics of exceptional value that make them unique in the world and that therefore have an Exceptional Universal Value.

Through this distinction, these goods are qualified as universal, and their enjoyment, protection and care becomes recognized by all the peoples of the world, regardless of the territory in which they are located. Thanks to this Convention, it has been possible to protect sites with cultural or natural value that have deteriorated or disappeared due to the lack of resources to preserve them.

Examples of this are the Pyramids of Egypt and the Great Wall of China. the canals of Venice, the Iguazu Falls are examples, among many others, of the more than 1100 world heritage sites that are distributed in 167 countries. They can be found on this list: https://whc.unesco.org/en/list/

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Linked to the naval and maritime heritage, both natural and cultural are, among many others: the Great Australian Barrier Reef, the reefs of Belize, the Plitvice Lakes in Croatia, a multitude of islands anywhere in the world (Coco, Galapagos, Reunion, Delos, Ogasawara, Jeju, Solowetsky, Saint-Louis, Meroe, Henderson and Gough), some seas such as the Wadden Sea (Denmark and Germany), Kenyan lake systems and Lake Malawi. Also coastal cities such as Portovenere, Cinque Terre and Islands (Palmaria, Tino and Tinetto) (Italy) Genoa, Venice, all the above in Italy; Valletta (Malta), the ancient city of Hoi An (Vietnam), the Old City of Acre (Israel) or the historic port city of Levuka (Fiji). Also included are ports, fishing stations, fortifications, lighthouses, such as the following: Whaling Station, where San Juan is whaler, in Red Bay (Canada), coastal fortifications of Havana, Fortress of Suomenlinna (Finland), Cordouan Lighthouse (France), Tower of Hercules (Spain), Naval Port of Karlskrona (Sweden) or The Fortress of San Juan in Puerto Rico

Also listed world heritage in danger Fortifications on the Caribbean side of Panama: Portobelo-San Lorenzo, Coro and its port (Venzuela) Old City of Jerusalem and its walls (Israel), the coastal city of Leptis Magna in Libya.

All these manifestations of the past are part of the Cultural Historical Heritage of Humanity.

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## 4. Maritime heritage

The nature of this specialization course determines that we deal specifically with the type of heritage in which the contents are framed

A first approach to the concept of maritime heritage is to define it as "the set of material and intangible elements, artifacts and symbolic artifices, linked to the economic and socio-cultural activities that have been developed in the past in relation to the resources of the maritime and coastal field and that, currently, are recognized and claimed as such by certain social groups,  as a constitutive part of their own heritage and, in whole or in part, of their identity, as well as endowed with sufficient relevance to be transmitted to future generations" (Péron 2002, 15).

Thus, in a simpler way, maritime heritage is formed by tangible or intangible goods that have a close relationship with human activities that make use of the sea, rivers and large lakes for an economic and social purpose, but also with fauna, coasts and ports. For its part, the naval patrimony collects the goods linked to the human activity of crossing the waters, but from a military point of view.  Therefore, the maritime includes the naval, which is a specific class of it.

### 4.1. Goods included within this patrimony

- **Natural**
  - Marine ecosystem
  - Coastal landscape
- **Cultural**
  - Material
    - Furniture: Printed documents, Manuscripts, Maps, nautical charts and Atlases, Instruments, objects, artifacts, Collections of scientific instruments, works of art, costumes and accessories. Vessels and their elements, fishing nets and associated elements.
    - Property: Historical buildings and architectural ensembles, towns and villages, cities, archaeological sites, cemeteries, commemorative goods. Forts, lighthouses, castles, palaces, arsenals, shipyards, shipyards, anchorages, springs
  - Immaterial: Language, customs, institutions, religions, myths, legends, music and dance, gastronomy, knowledge. Shipbuilding techniques, navigation (coastal, astronomical...), fishing, diving...

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## 4.2. Specific regulations

International conventions and conferences on the protection of maritime historical, artistic and cultural heritage. Among these, the following stand out:

- The 2003 Convention for the Safeguarding of the Intangible Cultural Heritage, adopted by UNESCO.
- Recommendation 1486/2000 of the European Parliament on maritime and river heritage.
- The "Barcelona Charter": European Charter for the Conservation and Restoration of Traditional Sailing Ships (2002).
- The Green Paper "Towards a future maritime policy of the Union".
- The Gijón Declaration in the framework of the European Maritime Day of 20 May 2010.
- The most important is the Memorandum of Understanding on the mutual recognition of certificates for the safe operation of traditional ships in European waters and certificates of competence for crews on traditional ships, known as Wilhemshaven Mou that Spain signed, along with other European maritime nations, in 2005.

## 4.3. Conservation of ships and vessels: a brief international vision

### 4.3.1. The example of Spain

The conservation of heritage in all its aspects is nothing new for some nearby countries, nor is its enhancement. There are associative movements, as well as public and private entities that have been working for a long time to carry out plans for the recovery, dissemination, and promotion of the rich maritime heritage.

In Spain, however, the initiative to protect maritime heritage has been, until very recently, relegated to state museums (Naval Museum of Madrid and Museu Marítim de Barcelona) or regional museums such as the Museu Marítim de Mallorca. At the local level, it is worth mentioning the work of the maritime cultural associations that can be found along the Spanish coast. (Rodrigo de Larrucea, 2014)

It is also the maritime-cultural entities that extend along the national coast that have been responsible for the conservation and maintenance of boats and the practice and dissemination of traditional navigation. In Catalonia they are integrated into the Federeació Catalana per la Cultura i el Patrimoni Marítim i Fluvial, which has a total of fifteen associations of this type. In the Balearic Islands there are ten associations. In the Basque Country, the Albaola Basque Maritime Factory is building a replica of the wreck of the whaler San Juan that, after 400 years underwater, was discovered by a Canadian archaeology team in Red Bay (Canada). Today, and after important studies, it has become the icon that symbolizes the Underwater Cultural Heritage of UNESCO.

Law 14/2014 on Maritime Navigation opens the doors to the creation of a special register for historic vessels or vessels. But its text does not meet all the expectations

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of people dedicated to preserving maritime heritage, so the Maritime Museum of Barcelona and the Museo do Mar de Galicia, on behalf of other institutions and associations, have presented an amendment to the Maritime Navigation Law in favor of historical and traditional ships. There is also a section on abandoned ships
https://vlex.es/vid/buques-abandonados-ley-navegacion-638165305

### 4.3.2. International

The existence of international precedents has provided methodologies and references worthy of being imitated and incorporated in Spain. In a certain sense, they have motivated the state administrations to draw up a roadmap that is reflected in the Draft Regulation of Historic Ships and Vessels and their unique reproductions in order to value the Spanish maritime heritage and provide it with the level of importance that has been conferred on other heritage sectors.

Due to the importance that comes from the international scene, it is important to make a brief description of the practices used in the conservation of maritime heritage in different countries expressly selected by the maritime lawyer Jaime Rodrigo de Larrucea.

a) **France**. The maritime heritage conservation movement began with the sinking in the English Channel of the frigate Dugay-Trounin in 1949, a ship that had been anchored in Portsmouth Harbour since the Napoleonic Wars. In 1992 when the current Fondation du Patrimoine Maritime et Fluvial was created. It acts jointly with the rest of the regional federations of maritime culture and its action focuses on the cataloguing of ships in three categories and subject to different levels of protection:

1. Historical monument (Monument historique) for ships;
2. BIP (Bateau d'Intérêt Patrimonial) vessels, at the request of the owner and subject to compliance with certain requirements, enjoy certain tax advantages;
3. Ships and vessels of old conception designed before 1950 or built identically, essentially with original materials. (Arrêté 30-04-2009)

There are currently 1,233 vessels that have been granted the BIP label and 140 vessels are part of the historic fleet. Special mention deserves the fishing museum in Concarneau (1961). The main attraction of the museum is, without a doubt, the classic trawler Hemérica, docked in the museum and open to visitors.

As an example of the recovery of the maritime heritage and for its actuality, the recovery of the Miguel Caldentey pailebote (1913) in the Llompart shipyards of Mallorca deserves a few words

b) **United Kingdom**. In the United Kingdom we find the first maritime history society in the world. Founded in 1910, it was instrumental in the recovery of HMS Victory and was also involved in the founding of the National Museum in Greenwich and the Royal Navy. Since 2006, the conservation of maritime

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heritage has been entrusted to a non-governmental organization: the National Historic Ships, under the tutelage of the Department of Culture and the corresponding Secretary of State. The organisation provides objective advice to the UK government, local authorities, funding bodies and shipowners. In addition, it also addresses issues related to the context surrounding historic ships by making them national instruments that contribute to social, Community and economic development. The registration and classification of ships is carried out in different categories and subject to different levels of protection and assistance, according to the objectively established prioritisation criteria:

   a. The National Register of Historic Vessels, which has more than 1300 vessels, requires vessels of more than 50 years old and more than 33 feet in length, in good condition and that due to their historical significance are worthy of belonging to this registry;

   b. National Historic Fleet, a record that totals around 200 vessels that constitute true emblems of national or regional history;

   c. The National Archive of Historic Vessels contains details of more than 500 lost or sunken vessels that belonged to the National Register of Historic Vessels.

   d. Minor registries are also the Overseas Watch List, a registry category in attention to overseas and in memory of the empire; the UK Replica List which publishes the list of replicas of domestic vessels; and the National Small Boats Register, a category totaling 700 models, intended for historic vessels under 33 feet.

Very remarkable is the action carried out in the rescue of the wreck of the Mary Rose (Portsmouth) in 1982 and its subsequent exhibition to the public in an enclosed area that protects the wreck from deterioration and that annually attracts tens of thousands of visitors.

Examples of historic ships preserved and open to the public are HMS Warrior, HMS Belfast, Great Britain (first iron and propeller-powered ocean liner) or the Edmund Gardner.

Many of the ships named above owe their existence to the action of the Maritime Trust, a non-profit foundation created in 1970 under the patronage of the Duke of Edinburgh.

c) **United States**. In 1994, the National Maritime Heritage Act was passed, subject to oversight by the National Maritime Heritage Program of the National Park Service, the U.S. Department of the Interior, and the Department of Transportation's Maritime Administration. It is one of the most complete standards in the field of conservation of maritime heritage and that relates both the public sector – federal government and Estados – and non-profit organizations.

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**ALL HANDS ON DECK**
EUROPEAN WORK HERITAGE IN SHIPWRIGHT FOR PRESENT AND FUTURE
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The National Maritime Heritage Grants Program is created, a national aid program that provides funds and tax credits for the realization of educational and preservation projects around maritime heritage, with the aim of bringing it closer to the public and strengthening the awareness and appreciation of the community for the American maritime heritage.

The conservation of ships has been carried out, above all, by popular subscription through private funds. Among numerous ships, the vast majority of the Navy, it is worth mentioning the UUS Intrepid, which is a true national emblem and living example of the history of the American navy of yesteryear. In addition, it represents an important source of income in the place due to the tourist influx. Other examples of American good work in the conservation and dissemination of its maritime heritage and history are the USS Pampanito (World War II submarine) and the SS Jeremiah O'Brien. It is worth mentioning the Queen Mary, a former cruise ship converted into a floating hotel, today the largest preserved ship in the world.

d) **Netherlands**. One of the largest fleets of operational historic vessels is located in the Netherlands. They are mostly inland navigation and are grouped in clearly differentiated associations according to the type of vessel. Thus there are associations dedicated to the conservation and navigation of old tugboats and pushers, fishing boats, classic sailing yachts in all their existing modalities, schooners, canoes and boats and rescue boats, among others. Most of these associations are members of the Federatie Varend Erfgoed Nederland, an entity that promotes the common interests of conservation and navigation organisations and coordinates and manages activities related to Dutch maritime heritage. As a further example of its deep-rooted seafaring tradition and, at the same time, curious about the lack of similar references in other nations, it is worth mentioning the existence of the Enkhuizer Zeevaartschool, a nautical school that trains professional sailors for navigation on board traditional sailing ships.

e) **Australia**. Under the auspices of the Australian National Maritime Museum (1991), which houses the National Maritime Collection: collection of objects of special relevance in the maritime history of the country and The Australian Register of Historic Vessels (AHRV), in collaboration with the Sydney Heritage Fleet. This register brings together vessels and vessels of all categories built, with exception, before 1970.

f) **Denmark**. In many respects, Denmark has been the pioneer in Scandinavia in the conservation of ships. Its maritime heritage pride is the second oldest pallet steamer in the world, the Hjejlen, from 1865. His work has concentrated, above all, on the conservation of cargo ships, made of wood, both sail and engine. The initiative of the Viking museum of Roskilde to convert the schooner Fulton as a museum ship and psychopedagogical project has been an idea that has served as a reference for other similar initiatives. Despite modest public funding,

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Denmark has managed to carry out major conservation projects such as the frigate Jylland thanks to private funding.

g) **Sweden**. Its flagship is the Vasa, a galleon that after 333 years at the bottom of the sea was rescued and is now the ship of the seventeenth century in better condition. This country treasures an important and varied fleet of historic ships. However, Sweden has a unique category of active historical vessels, most notably steamships, which connect the city of Stockholm with other neighbouring cities and islands and canals. The Swedish Government is little involved in the matter, leaving it relegated to associative work.

h) The **European Maritime Heritage** (EMH) is a non-governmental organisation that seeks to establish synergies for a single purpose: the protection of Europe's maritime heritage. To carry out this work, it brings together different organisms, whose link of union are traditional ships and boats. These include shipowners, associative entities and maritime museums.

EMH created the Wilhemshaven MoU or Memorandum of Understanding on the mutual recognition of certificates for the safe operation of traditional vessels in European waters and certificates of fitness for crews of traditional vessels. or has been signed by Denmark, Estonia, Germany, Finland, Lithuania, the Netherlands, Norway, Spain, Sweden, and the United Kingdom.

It is important to note that over the past few decades a growing public interest in keeping ships of great historical value alive has given rise to a number of activities in the field of maritime heritage with a view to preserving such vessels in active use, usually for private, social or cultural purposes, but also for commercial use. The variety of ship types developed under different influences of geography, culture and economy ranges from primitive sailing vessels with an auxiliary engine to motor propulsion vessels, many of them steam-powered, ancient fishing boats and cargo ships, as well as traditional ships for the transport of people, tugboats, icebreakers, lighthouse ships and others. Many of them are still preserved after being well cared for in public service. Available figures indicate that around 5000 maritime vessels of historical and regional interest have survived so far in Europe. An overwhelming majority of them have proven to be safe and seaworthy when kept properly equipped and operated by experienced crews.

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## 5. Heritage intervention

There are four degrees of intervention: preservation, conservation, restoration and maintenance

- **Preservation** is the set of measures aimed at preventing deterioration. It is an action that precedes conservation and / or restoration interventions, ensuring that, with these activities, the alterations are delayed as much as possible, and involves carrying out continuous operations that seek to keep the object in good condition.

- **Conservation** consists of the application of technical procedures whose purpose is to stop the mechanisms of alteration or prevent new deterioration in a historical object. Its objective is to guarantee the permanence of this heritage. The conservation must be reversible, neutral, controllable and respond not only to the technical requirements, but to those of the whole piece.

- The **restoration**, as a degree of intervention, is constituted by all those technical procedures that seek to restore the formal unity and the reading of the cultural property in its entirety, respecting its historicity, without falsifying it.

- **Maintenance** is constituted by actions whose purpose is to prevent an intervened object from deteriorating again, so they are carried out after the conservation or restoration work (depending on the degree of intervention) carried out has been completed.

The conservation is the treatment that an object receives to eliminate all or part of the degradation process that can deteriorate it, It is also done to protect it against future alterations, accepting the inescapable degree of deterioration that a recovered object can have. Restoration, on the other hand, implica additions to leave the object the most similar to its original appearance. Conservation does not add materials, while restoration does.

When a wreck is removed from the water it undergoes a sudden change of medium, which leads to problems, since it goes from a favorable stable medium but in which for centuries it was in equilibrium to another more aggressive medium physically, chemically and biologically.

These variations of the rescued ship passing from the aquatic to the terrestrial environment suppose that it is necessary to anticipate, or what is the same, it is necessary to foresee and organize a method and have materials with which the most favorable conditions can be achieved for the conservation of the equipment and the remains of the ship, avoiding the risks of degradation that may occur due to unwanted alterations, which would lead to the disappearance of contextual data, its history or even the object itself.

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The team in charge of carrying out must be made up of archaeologists, conservators and technicians.

The Preventive Conservation Working Group of the International Council of Museums (ICOM) has proposed a number of basic criteria applicable:

a) Avoid that any project that materially requires technical requirements higher than the possibilities of execution and maintenance that can be guaranteed.

b) Achieve the minimum possible degree of manipulation and intervention

c) Know the physical and chemical behavior of the materials to be preserved, their state of conservation and their possible causes of deterioration

d) Create an environment in accordance with the requirements of durability of the object.

e) Avoid the causes of alteration

f) Restrict its use if it can deteriorate, break or degrade

g) Remember that we must preserve the material values, but also the cultural values of the object, because its context would be lost and its interpretation would be very difficult.

## 5.1. Suitable conditions for the conservation of materials

The recommended humidity percentages for the recovered maritime heritage are attached (Table 1). Given these consequences, it will be necessary to look for a state of ideal humidity and temperature and this would be 58% humidity at a temperature of 17 degrees, but in each climatic zone the ideal relationship between both variants must be sought.

| Relative humidity | | |
|---|---|---|
| Material | Recommended atmosphere | Relative humidity % |
| Metals, enamels | Drought | 20 - 40 |
| Textiles, paper, ethnographic collections, botanicals, etc. | Media | 45 - 55 |
| Paints (wood, fabric), wood, ivory, bone, lacquers, leather | Quite wet | 50 - 60 |

Table 1. Recommended relative humidity for different materials. Martiarena, X. Conservación y Restauración. Cuadernos de Sección. Artes Plásticas y Documentales, 10, 1992, p. 185.

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Also, the lighting levels that may affect the recovered material and their recommendations (Table 2):

| Object type | Lighting source | Maximum lighting level |
|---|---|---|
| Less sensitive objects metals, ceramics, mineral jewelry, glass, stone | Any source of heat attention can be used | Unlimited 300 lux |
| Most objects Paintings, leathers, wood | Very controlled daylight | 150 - 180 lux |
| Very sensitive objects: watercolors, drawings, stamps, miniatures, manuscripts, textiles, tapestries, etc. | Never daylight | 50 lux as max and limitation of the time of ex- position |

Table 2. Recommended lighting level for various types of objects.
Source: Martiarena, X. Conservación y Restauración. Cuadernos de Sección. Artes Plásticas y Documentales, 10, 1992, p. 186.

Finally, Table 3 shows the possible variations in humidity, the deterioration it can produce depending on the material and its sensitivity to fungal infections. It can be seen that paper is the most affected, followed by the materials with which jarica and candles are made, but although to a lesser extent the wood also suffers alterations with changes in humidity. Regarding fungal infections, paper is very affected, but wood is not.

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| Material | Relative humidity | Sensitivity to humidity variations | Deterioration | Sensitivity to fungi and molds |
|---|---|---|---|---|
| Paper | 45-60% | Very large | Dryness and cold decrease flexibility | Very large |
| Fabrics, fabrics | 40-60% | Big | Tissues deform, tighten or de-stress when humidity varies | Silk and wool are more sensitive than cotton |
| (candles, rigging) | 45-60% | Big | Dryness decreases flexibility | Important when leather is fine |
| Leather, leather | 40-65% | Very large | | Irrelevant |
| Wood | 45-65% | Little | Older materials are sensitive to moisture | Can be attacked |

Table 3. Variations in humidity and deterioration produced. Source: Martiarena, X. Conservación y Restauración. Cuadernos de Sección. Artes Plásticas Variaciones de humedad y deterioro y Documentales, 10, 1992, p. 188-190.

There is a class of insects that soon kills wood: the "shipworm" or joke, scientifically called Teredo navalis. It is one of the most effective and harmful marine invaders in the world. It is not really a worm, but a mollusk, more specifically a lamelibranquio bivalve with a piercing head. It is an infilling animal that opens long and devastating galleries in the living work of wood, seeking to devour the cellulose it contains and reaches up to 20 centimeters in its adult state.
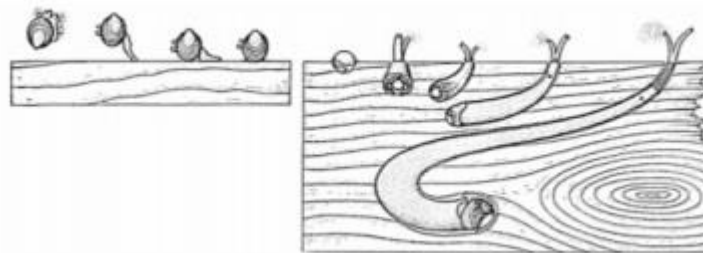


Galleries excavated by the teredo navalis in the wood

## 5.2. The conservation of water-soaked wood

Historic timbers extracted from an underwater environment pose very specific conservation problems. The first is their extraction, because although they maintain their original shape due to the role of filling agent played by water, they are usually very fragile and will not be able to support their own structure when removing them from the water. This problem can be solved by using supports or reinforcement structures and keeping the wood with the degree of humidity it had - avoiding its

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drying and water loss - by immersing it in water or wrapping it in materials that prevent moisture loss.

**Properties of wood**

The humidity of freshly cut wood ranges between 50 and 60%, but after being submerged for a long time, it can reach figures above 300%. Wood is hygroscopic, which means that it absorbs or gives off moisture according to the relative humidity of the environment. If the desiccation is rapid the wood will lose its shape, bulge and crack. If it is done slowly and controlledly, no. Wood also experiences an increase when temperature does.

The duration varies greatly depending on the type of wood and the medium in which it is located. Submerged in fresh water, it can be preserved indefinitely if there are no corrosive processes. Submerged in salt water, they endure a lot as long as it does not train in the action of the aforementioned mollusks, which are destroying it. If a ship appears buried in wet sand or clay soil, it is better preserved than if the ground is limestone.

**Alteration of water-soaked wood**

Damage to submerged wood is the result of a combined attack by water, in the form of physical and chemical action, and by microorganisms or fungi.

The degree of humidity of a piece is in direct relation to its degree of deterioration and will be a decisive fact when choosing the appropriate conservation treatment.

The purpose of all water-soaked wood treatments is to prevent its desiccation, consolidating it with a material that replaces water in its mission as a filling and supporting agent, which subsequently allows the elimination of the excess of water, without deformations or contraction. Provision should also be made for treatment that prevents the action of living organisms, which destroy organic matter.

**Most used treatments**

Controlled drying. It consists of a very slow drying, during which the wood is continuously moist, while gradually decreasing the relative humidity. When done slowly the contraction is uniform and no deformations occur.

Other options are based on replacing water with alum, also in successive baths of alcohol-ether and resin, Bouis method, Lyofix, Gamma irradiation, treatments with polyethylene glycol (PEG) waxes in which the waxes are used as a filling material to replace the water that saturates the wood, lyophilization (total or partial dehydration under the combined action of cold and vacuum. First the wood is frozen and then subjected to vacuum to remove the water by sublimation).

Mention is made of the option that instead of extracting the woods from the water, obtain reproductions of the pieces to avoid their deterioration, as has been done in the wreck of the san juan ship sunk in Red Bay (Canada).

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## 5.3. Restoration

Liberation, Consolidation, Restructuring, Reintegration, Integration and Reconstruction are the most frequent Types of Intervention in Restoration.

Its depth and scope vary depending on the degree of intervention that is carried out.

- **Release**: It is the intervention that aims to eliminate (materials and elements) additions, aggregates and material that does not correspond to the original good as well as the "... suppression of aggregate elements without cultural or natural value that [damage, alter, the cultural property] affect the conservation or impede the knowledge of the object". These aggregates are not original nor do they have a value corresponding to the historicity of the whole. Release tasks include debris removal, cleaning, removal of moisture, salts, flora, fauna and/or aggregates due to human causes, as well as, where necessary, removal of previous interventions.

- **Consolidation** "It is the most respectful intervention within the restoration and aims to stop the alterations in process. As the term itself implies, it "gives solidity" to an element that has lost it or is losing it. In this sense, consolidation implies any action that is carried out to give solidity to the elements that form an object. Sometimes it also involves the application of adhesive or support materials on the property in order to ensure its structural integrity and its permanence over time. intervene in order to give it greater solidity.

- **Restructuring**: "It is the intervention that returns the conditions of stability lost or deteriorated, guaranteeing, without foreseeable limit, the life of an architectural structure." Within the Executive Restoration Project, the study and solution of structural damage must necessarily be carried out by a specialist in historical structures, who must also advise on the execution of said intervention in the work.

- **Reintegration**: It is the intervention that aims to return unity to deteriorated, mutilated, or dislocated elements. There are two schools, one that advocates that the material to be added be neutral, as the majority tone of the object. Include a lighter tone so that it is clear what is added or the technique you must imitate as much as possible the color of the piece, among others.

- **Integration**: This intervention has been defined as the "... contribution of clearly new and visible elements to ensure the conservation of the object and consists of "completing or redoing the missing parts of a cultural asset with new materials or similar to the originals, with the purpose of giving stability and / or [visual] unity to the work","19 of course, without intending to deceive, so it will differ in some way from the original.

- **Reconstruction**: "It is the intervention that aims to rebuild missing or lost parts. In the reintegration we speak of deteriorated or mutilated elements, in the reconstruction, of lost parts [...] Reconstruction involves the use of new materials and not the reuse of elements belonging to the original construction already lost." This intervention refers to the work carried out at the structural

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level; it must be based on respect for the original object and shall be carried out in such a way that it is recognizable.

**Theoretical principles**

They are those that normalize the interventions that will be carried out in a historical object. Basically, they are respect for the historicity of the property, non-counterfeiting, respect for the patina, in situ conservation and reversibility.

- **Respect for the historicity** of the object refers to the fact that its function, structure and context must be respected.
- The principle of **non-Falsification** applies when an intervention requires integration (completing some architectural element or reproducing certain lost forms). If for some reason conservation requires the replacement or integration of a particular part, form or element, as well as the use of traditional materials similar to those that constitute the object, this intervention must be recognizable, but at the same time achieve a visual integration with the object, that is, it must not stand out or attract attention. This has been achieved in different ways, such as: dating the new elements, using different materials but compatible with the originals or using the same materials but giving them a different finish or treatment than the original.
- Principle of **respect for the patina**, this time in the buildings. The patina acquired over time has a value of its own and constitutes an essential element of its history. On many occasions the dirt has been confused with the patina, but this represents part of the historicity of the architectural good to be provided by the natural aging of the materials that constitute a monument. That is, the patina is a natural protection of the material, so it does not deteriorate it.
- The principle of **in situ conservation** refers to the fact that the object and its elements are not separated from their place of origin.
- Finally, the principle of **reversibility** refers to the selection of "... those techniques, instruments and materials that allow the easy cancellation of their effects, to recover the state of the object prior to the intervention, if with a new contribution of data, approaches, or criteria, it is judged useless, inadequate or harmful to the restored good.

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## 6. Dissemination

Although the function of museums to disseminate maritime heritage was admitted as such, in archives, focused on documentary preservation, there was some doubt about the need to make known to the public the important funds they hold.

### 6. 1. Singularities of the dissemination of maritime heritage

Beyond specific national legislation, the conservation and dissemination of cultural heritage took on an international legal status in 1972 with the "Convention on the Protection of the World Cultural and Natural Heritage", formulated by the General Conference of UNESCO (United Nations Educational, Scientific and Cultural Organization) at its seventeenth meeting held in Paris from 17 to 21 November 1972[14]. This declaration is the culmination of a set of guidelines that UNESCO itself had outlined years earlier and is the source that allows the further implementation of other complementary declarations.

The spirit of the 1972 Convention implies not only the taking of measures for the protection of the cultural heritage of individual nations, but also the establishment of a set of actions that allow and encourage access to and dissemination of such content. Despite this, the fact is that the urgent need to avoid plunder and destruction (and subsequently address their conservation and restoration) has meant that the part related to dissemination has been left in the background in the cultural policies of the countries, which have focused primarily on the facet of preservation, especially given the urgent nature of a large part of its actions dedicated to the loss of as few cultural assets as possible. All this has been concretized in numerous national and transnational regulations that promote this conservation work. Coinciding with this growing legal concern, which affects all countries regardless of their degree of development or organizational structure, we are witnessing a significant mutation in the process of access to documentary archives. Until just a few decades ago, physical access to archives was the only possibility of knowing the documentary collections that contained cultural heritage.

But one of the achievements of the Information Society has been, precisely, the development of a new generation of technological tools that allow us to move from physical to virtual contemplation. Expressed in other words, new technologies make it possible to enjoy historical documentary goods without deteriorating them (a matter that clearly differentiates them from other goods such as, for example, natural resources, which the more they are used, the more they wear out because they are limited). A copy of a digitized document, the original of which is kept in proper condition in a secure warehouse, can be used by millions of citizens and will never be degraded by that employment; on the contrary, it will multiply its usefulness and value. That is why documentary science (and within it the retrieval of information) has been insisting for years that the passage from an obsolete documentary institution to a modern one inexorably implies the awareness that the goods that are guarded should not serve only for those who know their existence to use them, nor exclusively to

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bequeath them to future generations. That is, the passive function of offering documents to users who request it must be changed as quickly as possible to that of searching for which users may be interested, studying how to better describe their content and generating tools that facilitate access to them. The idea that the "rule is unalterable" should be changed to that the user, in this case the citizen, is what matters.

The commitment we make to the Internet when it comes to putting it at the service of the dissemination of cultural heritage is based on some features inherent to the Network that have been usually underlined by the scientific literature. Of all these characteristics we can highlight, among others, the following: transnationality, overcoming the traditional geographical or border limitations; transtemporality, since it is a virtual space in operation 24 hours a day; universal access to content from any fixed, wireless, or portable device; and global interconnectivity, by bringing users from all over the world into contact from functionalities such as hypertextuality, multimediality, interactivity, integrality or participation.

### 6.2. Archives as institutions that disseminate documentary heritage

Archives are our written memory. Among its valuable funds are the roots of the identity of a people and, therefore, those who conserve, manage, and disseminate them, contribute to making their relevance more evident.

Although for a long time the idea that has been transmitted is that historical archives should only guard information, the other task entrusted, that of dissemination and with it the service to the citizen, is fortunately taking shape and penetrating both among the users of these organizations and in those responsible for them. Many times, the scarcity of material and human resources, the lack of time, the abandonment of the Administration itself and the absence of specific university training in this regard, have meant that one of the richest documentary institutions in the world, the historical archives, have long been abandoned to their fate.

When these deposits were run by expert archivists, or by persons who, without specific training, were genuinely interested in maintaining their collections, their collections were treated appropriately, described as accurately as possible according to the means and knowledge available, and in one way or another enriched by the care and care of intellectuals, whether of training or devotion,  aware of their wealth and patrimonial value, and of the social function that the archives have: to guard to make known, to serve as evidence of what once happened. Some did everything possible so that the collection did not fragment, continue to deteriorate or disappear eaten away by adverse climatic conditions, microscopic animals and plants, insects and small mammals that nest in their files and shelves, and by institutional oblivion and uprooting. This situation is being gradually eradicated, giving way to greater awareness on the part of all stakeholders (public administrations, direct managers, staff in charge and users).

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In this diffusing function typical of any documentary institution (archives, libraries, museums, documentation centers, information services, reference, etc.) information and communication technologies in general and the Internet in particular, are a great ally. All the efforts dedicated to offering these valuable funds on the Internet are, and will be, a sign that the situation described above is changing, and that the policy "of oblivion" is giving way to that of interest in the social and dissemination function.

The last, and so far, shows more valuable in the example of Spain is the PARES system that from the website of the Ministry of Culture offers a magnificent service to citizens interested in the funds kept in the historical archives dependent on this Ministry. Through a single portal, the existing funds in these archives are disseminated, both those that now only offer the description of the document and those that are already digitized and available for direct consultation on the source through the Network.

General Archive of the Indies (Seville, Spain)

It has been said many times that a people without history is not a people, because without archives it will be difficult to prove that it is. We make history with your documents, we enjoy finding the events that happened in another time, we look for our roots in them again and again. In return, they only ask us for a dignified state of conservation, our own treatment and care that should be exquisite given its importance.

Nor should we forget (never to imitate them) those who, in an attempt to bend consciences, have wanted to erase the events that occurred by destroying archives, those who from their ignorance have ended up with millenary memories, those who have consumed under the fire of their hatred parchments and files, and those who,

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having under their tutelage an important part of our Heritage, they don't want to bring it to light because of unfounded fears.

A history that is not based on archival sources is easy to manipulate, to lead down the narrow and tortuous path of intransigence; in short, to do it to the taste of the one who writes it or those who pay for it.



Burning documents

A small child if he sees a file will quickly think that it is old paper, but if we teach him the History, he transmits he will dream of it, he will see himself on an island of pirates looking for a treasure or he will believe himself a midshipman learning to interpret a course and then sail as a captain in the Holy Trinity. On your journey you will see mermaids and sea monsters, discover new distant territories, be illuminated by ancient lighthouses. When you wake up you will never think that a file is an old paper, because it will remind you of the stories you dreamed of and, for a moment, when you grow up you will want to be a historian, geographer, navigator, archivist, naval architect, discoverer ... and all thanks to a simple paper written centuries ago and a person who in a few minutes has taken him to that wonderful destination.

To verify the endless wealth referred to the documentary heritage that we have available, and that, as a rule, is quite unknown, we attach two tables with part of the statistics of the Census Guide of Archives of Spain and Ibero-America.

The first corresponds to the total number of archives registered, divided by Spanish Autonomous Communities, and the second includes those found in Latin American countries. It should be noted that both historical and administrative are included (those that, after time, will become historical).

We also include here some sample of the beauty of this documentary heritage, which according to the Constitution belongs to all Spaniards, but which very few know, so it is difficult for them to appreciate its value, and what is more important: to contribute to its preservation and dissemination.

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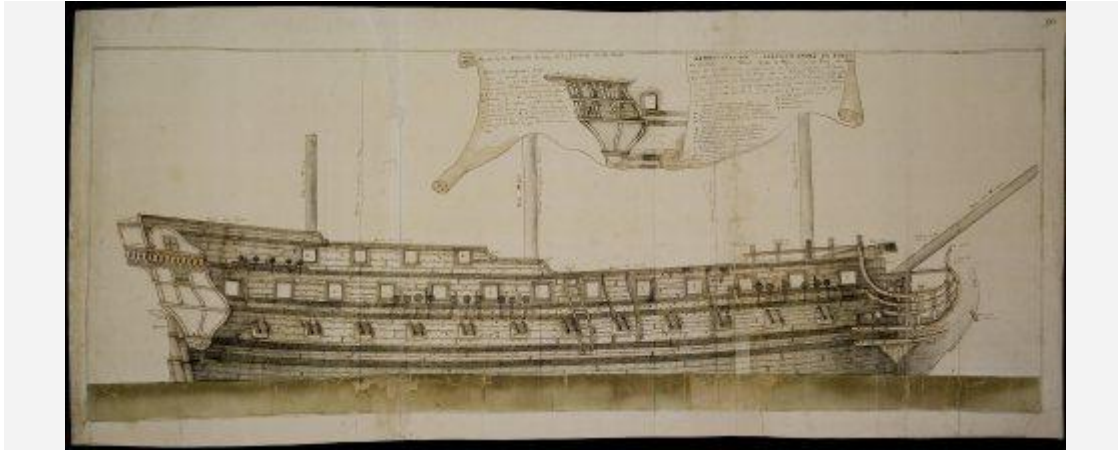


Representation of the side of a ship. Archive of the Naval Museum of Madrid

## 6. 3. Digital repositories

Digital repositories are permanent deposits of documents in electronic version of an institution (educational, research, Public Administration or private) that are accessible through the Internet free of charge in full text for all citizens. These documents can be periodicals, books, doctoral theses, archival, sound, audiovisual or any other type of funds as long as they are in digital format (Chaín 2016).

The relevant thing about the repositories is that they are allowing the translation of all kinds of sources to the digital medium for free and accessible from anywhere in the world just by having an Internet connection, a unique fact so far. Almost all of them are prepared for access through mobiles, since they use an application that allows viewing effectively.

For history in general, there are many and varied digital deposits. There is no single tool that allows unified access to all of them. They are spread over several continents, mainly in Europe, America and Oceania. Most offer academic publications (journals and doctoral theses), since they are part of university institutions, but there are also attempts to offer primary sources from the governments themselves, especially from national heritage institutions.

We expose and comment on some of the most useful repositories and aggregators for this matter. The fact that they are not systems produced in the Hispanic sphere at all means that manuscripts, books, magazines, letters or plans related to any subject of History cannot be found. To access any of these digital repositories, simply put your name in a browser.

The first repositories explained here are tools that contain, unless otherwise specified, all kinds of documents useful for research, and that are maintained by different countries. It includes first the Spanish and later those produced in other countries.

- **PARES Portal**. This platform unifies in a single database the access to the funds of a multitude of Spanish archives. It was the first and also the basis on which

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other European portals have been developed. It collects the funds of the main Spanish archives, both those that are not available in full text and those that are, becoming an indispensable source to know what archival funds there are in Spain.

Fue a world milestone because for the first time from a website you could access the description of the funds of the most important Spanish archives. The reference is available and, when scanned, the full text.

- **APENET**. Years later Apenet tried to offer the same for European archives. However, open access archival projects are still burdened by the lack of description of certain funds and also by the absence of standardization in the descriptions already made, which greatly hinders the effective action of resource collectors.

- **Hispanic Digital Library**. This digital repository offers digitized texts from the National Library of Spain since 2008. It is one of the best in the world, both for the richness of its fund and for the detailed and accurate description of each of the available specimens. We can find documents from the eleventh century to the present, and the variety and interest of the collection are impressive.

Possibly this is, together with the PARES Portal, the most important tool of all those described to find documents, both primary and secondary, on the History of Spain and Latin America.

- **Hispana**. It is a multiple digital repository that brings together the digital collections of Spanish archives, libraries and museums. These include the institutional repositories of Spanish universities and the digital libraries of the Autonomous Communities, which offer access to growing sets of all kinds of materials (manuscripts, printed books, photographs, maps ...) of the Spanish bibliographic heritage. It also incorporates the collective catalogue of the Digital Network of Museum Collections of Spain.

These are, for the most part, unique collections, of interest to researchers and the general public. They are of varied subject matter and cover a wide historical period.

**Miguel de Cervantes Virtual Library**. The Miguel de Cervantes Virtual Library began its development in 1998 and was presented a year later as a virtual collection of classic works in Hispanic languages. The project has established itself as an indisputable reference space for culture in Spanish and as an open, universal and integrating project. It offers a multitude of complete works of literature in Spanish.

- **Virtual Library of Science and Technology in the American company**. The Virtual Library of Science and Technology in the American company is a joint Spanish project of the Ignacio Larramendi Foundation and the MAPFRE Foundation. It is the only one of those described here that is managed by a private institution.

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Although we can find documents from previous times, the collection begins in the sixteenth century. It offers access to the works and documents of the most important polygraphs of the time related to the arrival in America of the Spaniards, as well as to the authors linked to them.

- **Gallica**. It is the digital repository of the National Library of France. Like most documentary institutions of national rank, it preserves a rich heritage in which we can find documents of interest to other countries and regions, both linked to the history of the Mediterranean and the Atlantic or the Pacific. It has about 2 million digital objects and allows you to search for information by type of document, by subjects or by continents. The description of the documents is very adequate and the viewers allow a good interaction with the system.

- **Digital Public Library of America**. This digital library created in 2012 is American and was one of the last to join this philosophy of offering thousands of documents over the Internet for free. It is an aggregator of resources from relevant institutions in this country. Although some work from the Modern era can be found, it is above all a source for the Contemporary History of the continent.

  This repository brings together the digital collections of large libraries, such as the New York Public, which have always had among their collections a multitude of documents related to the History of Spain and Latin America in past centuries, but there is no shortage of historical documents linked to other geographical areas.

- **Digital Library of Ibero-American Heritage**. The Digital Library of Ibero-American Heritage (BDPI) contains an immense historical and patrimonial collection. It is a project promoted by the Association of National Libraries of Ibero-America (ABINIA), which allows access from a single point of consultation to the digital resources of all participating institutions. It is destined to become an example of international cooperation at the Ibero-American level.

- **Europeana**. It offers access to the heritage of multiple libraries and museums in the countries of the European Union. It is like a large database that gives access to thousands of documents to full text (aggregator). The collections come from the major European libraries, both national and otherwise. Lately it has also added archival and museological collections.

  We can find books, manuscripts, nautical charts, coins, planispheres, portraits, decorations, scores, paintings. A whole heritage universe related to History that will surely be of interest to anyone interested in the subject.

- **Internet Archive**. Digital library, one of the oldest, which includes books, archival documents, audio, moving images, and software, as well as web pages. It was created as a file to store what at a certain time has been on the Internet and then disappeared. It provides specialized services for adaptive reading and access to information for people who are blind and have other disabilities.