

IMT Institute for Advanced Studies, Lucca
Lucca, Italy

**The Underwater Cultural Heritage: a Comparative Analysis of
International Perspectives, Laws and Methods of Management**

PhD Program in MDCH
XXV Cycle

By
Alberto Frigerio
2013

The dissertation of Alberto Frigerio is approved.

Programme Coordinator: Maria Luisa Catoni, IMT Lucca

Supervisor: Lorenzo Casini, La Sapienza, Roma

Tutor: Lorenzo Casini, La Sapienza, Roma

The dissertation of Alberto Frigerio has been reviewed by:

[Name, Surname, Affiliation]

[Name, Surname, Affiliation]

IMT Institute for Advanced Studies, Lucca

2013

*Dedicated to my family:
You're the best crew a captain could wish for!*

Table of Contents

LIST OF FIGURES AND TABLES	p. X
ACKNOWLEDGMENTS	p. XII
VITA AND PUBLICATIONS	p. XIII
ABSTRACT	p. XIV
INTRODUCTION	p. 1
CHAPTER 1: THE THEORETICAL FRAMEWORK OF THE UNDERWATER CULTURAL HERITAGE MANAGEMENT	p. 16
1. The difficulties to elaborate a shared definition of underwater cultural heritage	p. 16
2. The identification and assessment of the values associated with the underwater cultural heritage: a complex challenge, but of great importance	p. 23
3. Managing the risk: the principal threats affecting the underwater cultural heritage	p. 30
4. The interplaying interests related to the management of the underwater cultural heritage	p. 36
4.1 Evaluating the compatibility of the interests at stake: trade-off or constructive interaction?	p. 43
4.2 Planning the underwater cultural heritage management: a hierarchical pyramid of interests with a bottom up impact	p. 51
5. Stakeholders identification and analysis: the problem to fulfill different expectations	p. 54
6. A comprehensive theoretical model aimed to guide decision makers in the management of the underwater cultural heritage	p. 62
CHAPTER 2: INTERNATIONAL LAWS AND PERSPECTIVES RELATED TO THE UNDERWATER CULTURAL HERITAGE	p. 69
1. The 1982 United Nations Convention on the Law of the Sea: the development of a comprehensive system regulating the maritime issues	p. 69
1.1 The protection of the underwater cultural heritage in the UNCLOS: too less, too generic	p. 77
2. Salvage law and the law of finds: the application of commercial schemes on the underwater cultural heritage	p. 81
2.1 New trends emerging from the US case law: more demanding rules for the historic salvage operations	p. 92
3. The 2001 UNESCO Convention: an advanced system of protection based on “constructive ambiguities”	p. 101
3.1 The historical development of the Convention	p. 101

3.2 The text of the Convention: principles, ambiguities and clashing arguments	p. 104
3.3 The Rules of the Annex: a shared model of underwater archaeology	p. 147
3.4 Planning the next steps. The firsts consultations of the Meeting of States Parties and the Scientific and Technique Advisory Body	p. 162
4. Interpreting the will of the states: a comparative analysis on the ratifications of the main international conventions in force	p. 167
4.1 Comparing the 1982 UNCLOS and the 2001 UNESCO Convention: the constraints that delayed their enforcement	p. 174
4.2 Comparing the 1989 Salvage Law Convention and the 2001 UNESCO Convention: the co-existence of two conflicting international regimes	p. 178
5. Title and sovereign immunity of ancient sunken state vessels: are they principles of customary international law?	p. 183
6. Archaeologists vs. historic salvage companies: ethical, legal and methodological divergences	p. 195
6.1 High costs, low profits and increasingly stringent rules: three reasons why the historic salvage companies should reconsider their plans	p. 204
CHAPTER 3: ASSESSING THE EFFICACY OF THE MAIN METHODS OF MANAGEMENT FOR THE UNDERWATER CULTURAL HERITAGE	
1. Exhibition (or storage) in “on-land” museums	p. 208
1.1 Introduction	p. 208
1.2 The Vasa Museum	p. 209
1.3 Benefits and limits of the exhibition (or storage) of underwater cultural goods in “on-land” museums	p. 228
2. Underwater museums	p. 233
2.1 Introduction	p. 233
2.2 The underwater museums of Baiheliang and Alexandria	p. 234
2.3 Benefits and limits of the underwater museums	p. 244
3. Underwater archaeological parks	p. 247
3.1 Introduction	p. 247
3.2 The Florida’s Underwater Archaeological Preserves	p. 249
3.3 Benefits and limits of the underwater archaeological parks	p. 263
4. Restricted access sites	p. 269
4.1 Introduction	p. 269
4.2 The Protected Wreck Sites in UK	p. 270
4.3 Benefits and limits of the restricted access sites	p. 279

5. Reburial or covering sites	p. 282
5.1 Introduction	p. 282
5.2 The BurgZand Noord 10	p. 283
5.3 Benefits and limits of the reburial or covering sites	p. 290
6. Benefits and limits of the “no action” option	p. 294
7. Comparative analysis of the different methods of management: main features and area of applicability	p. 296
CONCLUSION	p. 310
1. Theoretical reflections: the management of the underwater cultural heritage as a complex system	p. 310
2. Juridical considerations: how the 2001 UNESCO Convention has completely changed the international legal context	p. 314
3. Management analysis: the importance to assess the methods of management for compensating the lack of a “perfect solution”	p. 328
4. Final remarks	p. 336
SELECTED BIBLIOGRAPHY	p. 340

List of Figures and Tables

1. Diagram for the assessment of the risks
2. Table relating interests, objects and main aims
3. Table on the interacting interests
4. Hierarchical pyramid of interests with a bottom up impact
5. Table of stakeholder and interests
6. A theoretical model for the underwater cultural heritage management
7. Schema of the different maritime zones regulated by UNCLOS
8. The reporting and notification system in the EEZ and on the Continental Shelf
9. Main matches and differences between the protection in the EEZ and on the Continental Shelf (arts. 9-10) and in the Area (arts. 11-12)
10. Schema on the settlement of disputes according to art. 25
11. Procedure for the adoption and entrance into force of amendments
12. Ratification of UNCLOS, Salvage Law Convention and 2001 UNESCO Convention
13. Chart illustrating the number of ratifications of the UNCLOS per year
14. Chart illustrating the growing number of states parties to the UNCLOS
15. Chart illustrating the number of ratifications per year, in the first 10 years, of the UNCLOS and the 2001 UNESCO Convention
16. Chart illustrating the growing number of states parties to the UNCLOS and the 2001 UNESCO Convention in the first 10 years from their adoption
17. Chart showing the attitude of the states which have ratified the 1989 Salvage Law Convention in relation to reservation of art. 30, par. 1(d) and 2001 UNESCO Convention
18. Table illustrating the diverse interpretation of the factors of risk
19. Organizational chart Swedish National Maritime Museums
20. Number of visitors per year of the Vasa Museum
21. Division of the revenues obtained by the Vasa Museum
22. Operational revenues and costs of the Swedish National Maritime Museums in 2011

23. Number of visitors per year of some of the main international maritime museums
24. Table summarizing benefits and limits of the recovery and exhibition of the underwater cultural heritage in “on-land” museums
25. Table summarizing benefits and limits of underwater museums
26. Chart on the average number of PADI certifications/year
27. Table summarizing benefits and limits of underwater archaeological parks
28. Table summarizing benefits and limits of restricted access sites
29. Table summarizing benefits and limits of reburial or covering sites
30. Table summarizing benefits and limits of unmanaged free access sites
31. Table comparing the efficacy of the main methods of management
32. Pre-excavation and post-excavation methods
33. Defining the preservation *in situ* in the active management
34. Assessing the conservation efficiency
35. Comparing the active conservation “on-land” and *in situ*
36. Assessing protection efficiency
37. Comparing protection “on-land” and *in situ*
38. Assessing the accessibility efficiency
39. Comparing accessibility “on-land” and *in situ*

Acknowledgments

Attending to this PhD has been a pleasant, but also challenging experience. Fortunately, in all these three years I had the opportunity of being supported by many people to whom I am grateful.

First of all, I want to acknowledge my supervisor, Lorenzo Casini, who sustained the hard tasks of reviewing my final dissertation and of signing an infinite list of bureaucratic documents. In both these practices he showed infinite patience and inestimable competence.

Special thanks go to professor Johan Rönby, who supported my research during my (wonderful) four months at the Swedish Maritime Archaeological Research Institute (MARIS). Thanks to him I had the occasion to meet and interview several experts of underwater archaeology as well as the opportunity to participate to the MARIS workshop and other seminars.

In addition, I want to acknowledge all those who dedicated time answering my questions or providing me suggestions. I very much appreciate your willingness to help me.

I have to express my infinite gratitude to my family (mum Angy, dad Killus, sister Ary, brother Alex and grandma Gianna) who financially and morally supported me. You gave me the chance to realize my dream and, therefore, I dedicate to you this thesis. An extra thank to my brother Alessandro who helped me to improve the standard of English of my dissertation.

I thank all my dear friends of Monza and surrounding areas. Spend time with you is always an immense pleasure. I am also grateful to my Turkish community of Stockholm (Yasemin, Volkan and Nur). You are crazy-lovely people. I express gratitude to my PhD colleagues (and friends). You made pleasant, hilarious and exciting our time spent in Lucca.

Last, but not least I am grateful to my love Elvira. She motivated me whenever doubts and fears troubled me. I completed this PhD only thanks to her.

Vita

Alberto Frigerio (31/08/1984, Melzo, Italy) is a PhD student in Management and Development of Cultural Heritage at IMT Advanced Studies of Lucca. He got a bachelor degree in International Science and European Institutions in 2006 and a master degree in International Relations in 2009 (110/110), both at Università Statale di Milano, Italy.

International experiences: six months Erasmus scholarship at the Södertörn Hogskola of Huddinge (Sweden) in 2005; three months internship at the Italian Trade Commission of Los Angeles (USA) in 2007; four months research visiting at the Swedish Maritime Archaeological Research Institute (MARIS) in 2011.

Publications related to the underwater cultural heritage

Alberto Frigerio, "Il quadro giuridico del Titanic a 100 anni dalla tragedia", *Aedon, reviews of arts and law on line*, n°1-2 - 2012, Il Mulino:http://www.aedon.mulino.it/archivio/2012/1_2/frigerio.htm;

Alberto Frigerio, "From the Past to the Future: the Promotion of Underwater Cultural Heritage through Advanced Technologies", Eva 2011 Florence, Pitagora Editrice Bologna, Aprile 2011;

Alberto Frigerio, "L'entrata in vigore in Italia della Convenzione UNESCO 2001 sulla protezione del patrimonio culturale subacqueo", *Aedon, reviews of arts and law on line*, n°2 - 2010, Il Mulino: <http://www.aedon.mulino.it/archivio/2010/2/frigerio.htm>;

Conferences & Seminars

2nd MARIS PhD-researchers network workshop, Alberto Frigerio, "Public Awareness and Interest toward the Underwater Cultural Heritage: a survey-game to test common knowledge", University of Helsinki (Finland), 18-20 November 2011;

IKUWA 4, Alberto Frigerio, "The clash of interests in the management of the underwater cultural heritage", University of Zadar (Croatia), 29 September - 02 October 2011;

EVA 2011 Florence, Alberto Frigerio, "From the Past to the Future: the Promotion of Underwater Cultural Heritage through Advanced Technologies", Grand Hotel Minerva of Florence (Italy), 4-6 May 2011;

Abstract

This dissertation investigates the underwater cultural heritage from a multidisciplinary approach, sustained by argumentative reflections, comparative analysis and problem solving techniques in a combination of theoretical, legal and managerial perspectives. The main purpose is to provide a complete, dynamic and innovative framework of analysis that may also serve as a guide for implementation. Specifically, the research aims to accomplish three tasks: first, to elucidate for the complexity of transforming divergent interests into converging opportunities; second, to provide a comprehensive key for interpreting the contradictory views manifested in the international legal scenario; and, third, to compare benefits and limits of the most sensible methods of management of the underwater cultural heritage.

This research begins exploring the existing theoretical framework in order to identify, explain and organize the basic variables of underwater cultural heritage management into an advanced conceptual model. This framework recognizes the hierarchical pyramid of interests and the necessity to strike the right balance among them in order to provide a long-term sustainable management.

The second part of the research considers the current international legal context and the issues related to its implementation. Positively, despite an excessive use of “constructive ambiguities”, the entrance into force of the 2001 UNESCO Convention has significantly strengthened the protection of the underwater cultural heritage. Negatively, several factors thwart the harmonization of this framework: the structural incompatibility between this Convention and the salvage regime, the different and ambivalent approaches of states toward this heritage, the unsolved doubts about the legal value of title and sovereign immunity on ancient sunken state vessels, and the conflicting professional ethical view of archaeologists and historic salvage companies.

In the final part, this work evaluates and compares the main methods for the management of underwater cultural heritage (museums “on-land”, underwater museums, underwater archaeological parks, restricted access sites, reburial or covering sites, and unmanaged sites). Two related conclusions emerge: first, the absence of a “perfect method”; second, the necessity to understand in which specific circumstances the adoption of each method is more appropriate and efficient.

INTRODUCTION

“Homme libre, toujours tu chériras la mer!”.

Charles Baudelaire, *L’homme et la mer*

1. Personal reasons for investigating the underwater cultural heritage

Fascinated by the sea and the incredible works of art that found rest in its waves, I started wondering about the underwater cultural heritage and its management. The idea of this thesis arose when the complexity of this issue became clear to me. An intricate plot of interrelated interests (cultural preservation, environmental protection, economic growth, legal frameworks, etc.) melt around the management of the underwater cultural heritage: sometimes their interaction is simple and constructive, but most of the time their harmonization is constrained by a series of conflicting views like, for example, consumption vs. conservation, preservation *in situ* vs. recovery, coastal states vs. flag states, and *salvors* vs. archaeologists. The overall scenario is so tricky that in the drawing of the 2001 UNESCO Convention, the main international legal tool for the protection of the underwater cultural heritage, some key-aspects have been intentionally left ambiguous or they have been completely excluded from the final text. This complexity makes the underwater cultural heritage management a difficult and, therefore, motivating topic of research.

The high number of underwater cultural sites in the world and the extraordinary preservation of most of them are additional reasons for investigating this issue. In 1832, the British geologist Sir Charles Lyell stated: “*It is probable that a greater number of monuments of the skill and industry of man will in the course of ages be collected together in the bed of the oceans, than will exist at any one time on the surface of the continents*”¹. This forecast may, at first glance, seem foolish or just provocative. Actually, it could be fairly truthful considering two elements. First, waters cover around 70% of the earth. Second, over the centuries, humans have regularly tried to dominate the water spaces. Since ancient times rivers, lakes, seas and oceans have been sailed and exploited for the development of trade, transport, fishing and other important human

¹ Lyell C., *Principles of Geology, being an attempt to explain the former changes of the earth surface, by reference to causes now in operation*, John Murray, Vol. 2, London, 1832, p. 258.

activities. Therefore, thousands of years of direct contact between the water element and human beings have presumably made these spaces the biggest self-constituted museums of the world. As stated by Bass *"if only one vessel sank in every year of every decade of every century of every millennium since the first seafarers sailed out from their cave dwellings in Greece 11,000 years ago, we would have 11,000 wrecks in the Aegean alone. But hundreds of ships have sunk in Aegean storms in a single day. We cannot calculate the number of wrecks in that one sea. The number of wrecks beneath the Seven Seas is truly unimaginable"*². The Wreck Protect Project estimates, for example, that in the sole Baltic Sea there are over 100.000 samples of shipwrecks and other submerged man-made assets of varying scale.

However, the importance of the underwater cultural heritage is not just related to its numeric relevance. As highlighted by Maarleveld *"while there may be many archaeological sites, their number is nevertheless finite [and] each site... is unique"*³. This consideration carries two consequences. First, despite the fact that the overall number of underwater cultural sites may seem incredibly high, its amount is in any case fixed. Second, most of the times each site presents distinctive features that make it special and irreplaceable from an archaeological, historical or artistic point of view. As a result, the underwater cultural heritage is like a collection of unique non-renewable pieces: the loss of one of them cannot be substituted. For this reason the fruition of this heritage has to be carefully planned and evaluated.

There is also an intrinsic charming around the underwater cultural heritage. This is probably due to a long list of reasons as, for example, the fascinating stories associated with the sea, the prevailing perception of the "underwater world" as something still shrouded in mystery and the supernatural value that the human beings have attributed, during the centuries, to the ships. As highlight by Cederlund, *"since the beginning of history, even prehistory, the ship has been loaded with strong symbolic value. It has had a central position in the economic system of many societies and has played roles in religion and myth. Ships carried the sun across the sky. Ships took the dead to the land of death. The ship was one of the magic assets of the gods, also magic in the respect that it could carry humans*

² Bass G. F., *Beneath the Seven Seas: Adventures with the Institute of Nautical Archaeology*, Thames and Hudson, London, 2005, p. 27.

³ Maarleveld T. J., "How and Why will Underwater Cultural Heritage Benefit from the 2001 UNESCO Convention?", *Museum International*, Vol. 60, Issue 4, February 2009, p. 56.

on water: It made humans able to “walk on water”. Perhaps the ship has a similar value and attraction today, both for archaeologists and others, as it had at the time when the sun was carried across the sky on a ship”⁴.

Finally, several data confirm that the relevance of the underwater cultural heritage, at international level, is growing. First, the increasing number of people who attend maritime museums: since 2007, for example, more than 1.000.000 people each year regularly visit the Vasa Museum. Second, the growing investments directed at the underwater cultural heritage: in China, for example, since 2006 the central government have allocated, each year, more than 20 million Yen (around \$3 million) for the protection of the underwater cultural heritage. Moreover, for the construction of the Baiheliang underwater museum, the Guangdong Provincial government has invested over 190 million Yen (almost \$28 million). Third, the regular organization of conferences dealing with the maritime and underwater cultural heritage: for instance, since 1999 an international association named IKUWA has organized, in different parts of the world, high-scale international congresses focusing on the underwater archaeology⁵. In 2011, for example, hundreds of experts from different part of the world attended the IKUWA 4 Conference held at the University of Zadar (Croatia). Fourth, the development of new underwater archaeological parks and trails: in the last 20 years their number has multiplied and nowadays it is possible to find them in many states of the world. Fifth, starting from 2014 the 2001 UNESCO Convention will protect the wreckages of World War I. This event (100th anniversary), most likely, will be significantly celebrated at international level.

2. Main goals and overall structure of this dissertation

This thesis investigates the underwater cultural heritage from a theoretical, legal and managerial perspective. My main purpose is to provide a complete, dynamic and innovative framework of analysis that may also serve as a guide for implementation.

⁴ Cederlund C. O., “Archaeology in the Marine Environment in Sweden”, in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002, p. 334.

⁵ Here an overview concerning data and locations of the IKUWA conferences: IKUWA 1, 1999, Germany; IKUWA 2, 2004, Switzerland; IKUWA 3, 2008, England; IKUWA 4, 2011, Croatia; IKUWA 5, 2014, Spain; IKUWA 6, 2016, Australia.

This dissertation aims to be comprehensive because, unlike most of the published literature, it explores in-depth a wide range of themes (theoretical basis, legal principles, ethical considerations, methodological approaches and managerial practices) in order to exhaustively address the challenges related to the management of the underwater cultural heritage.

It is dynamic because each issue is analyzed in details, but keeping in mind that all of them are interlinked components of one (complex) system. The theoretical framework provides a key to the overall interpretation of the underwater cultural heritage management, the legal framework sets out the basic principles regulating this sector, and the managerial framework examines the concrete protection and enhancement of this heritage.

Finally, it is innovative because not only it critically investigates some aspects that have not been accurately examined yet (such as, for example, the requests of the main groups of interests associated with the underwater cultural heritage management, the levels of ratification of the main international conventions dealing with the underwater cultural heritage and the diverse feasibility of the main methods of management currently available), but also it resorts to original strategies for assessing those problems that have already been studied, but that were left without shared (such as, for instance, shaping a theoretical model for the underwater cultural heritage management, assessing the state vessel sovereign immunity issue or comparing the advantages and disadvantages of the main methods of management).

The complexity of the underwater cultural heritage management required for a research activity intended to shed light on its structural mechanisms. For this purpose, the core questions examined in the first part of this dissertation are: What are the theoretical interests at the base of the underwater cultural heritage management? How are they interrelated? Is it possible to organize them in a model describing the main steps of the underwater cultural heritage management?

The international legal protection of underwater cultural heritage, compared to the land based heritage, is more challenging because it (also) operates on areas beyond the sovereignty of states, has a relatively recent juridical history and is currently characterized by the coexistence of legal instruments fundamentally incompatible. Therefore, considering these points, the second part of this thesis aims

to answer the following question: What are the main clashing aspects affecting the international legal protection of the underwater cultural heritage? However, my dissertation intends also to broaden the scope of the research. Thus, it poses and answers a further question: What is the origin of these diverging views?

The management of underwater cultural heritage is expensive and problematic due to the need to adequately balance a set of different interests. To guard against a waste of resources as well as to improve its efficacy and sustainability, the third part of my thesis investigates the main methods for the underwater cultural heritage management answering the following questions: What are their main benefits and limits? In which circumstances are these methods more suitable?

According to these questions, my research has been organized in three main areas: theoretical framework, international laws and perspectives, and main methods of management.

3. The theoretical framework

The first part of this thesis aims to identify, explain and organize in a structured model the variables that should be considered in the underwater cultural heritage management. These theoretical considerations are the keys for interpreting the different laws and perspectives emerging from the international legal scenario as well as the tool for evaluating the main advantages and disadvantages of each method of management.

This section starts evaluating the concept of underwater cultural heritage and presents the main critiques moved to the definition provided by the 2001 UNESCO Convention. The core question is: why is it complex to provide a (legal) definition of underwater cultural heritage? Then, paragraphs 2 and 3 respectively identify the values and threats associated to this heritage and they explain why their assessment is an important, but challenging issue. Why and from what should this heritage be protected and preserved? Why and how should values and threats be assessed?

Paragraph 4 focuses the attention on the main interests related to the underwater cultural heritage. The goal is to evaluate their compatibility, underline which are the main diverging interests and provide an attempt of prioritization in view of the successive plan of

management. The questions assessed are: What are the main factors that influence the decision makers? How do these factors interact (converging or diverging)? How is possible to establish a sustainable prioritization of the interests at stake?

Paragraph 5 provides an overall view of the main group of interests that can directly or indirectly affect (or be affected by) the underwater cultural heritage management, highlighting the difficulties inherent to the administration of different demands. Which are the main groups whose interests are related to the underwater cultural heritage? How do they influence the decision-making process?

To conclude, paragraph 6 elaborates a comprehensive theoretical model aimed to guiding decision makers in the management of the underwater cultural heritage. The key question is: how should these factors (values, threats and interests) be arranged in order to identify the proper method of management for a certain underwater cultural site?

The literature on the theoretical framework is fragmentary. Several interesting considerations have been proposed for the definition (Boesten, Carducci, Henderson, Forrest and O’Keefe), the values (Claesson, Dunkley, Manders and the UNESCO Manual) and the threats (Dunkley, Gregory, Manders, Memet and Oxley) related to the underwater cultural heritage. Various authors (such as Dunkley, Khalil and Scott-Ireton) have also provided some stimulating reflections on the interests connected with the management of the underwater cultural heritage and their interactions. On this last topic, Jayme in his article “Globalization in Art Law: Clash of Interests and International Tendencies” accurately identifies the main interests related to the international arts law. Most of them are re-proposed in this thesis.

Only few studies, instead, have been dedicated to the stakeholders’ analysis. Green has identified some groups of interests affecting the underwater cultural heritage, but there are no advanced studies about their influence on the decision-making process. Similarly, few authors have tried to articulate in a single model the different theoretical aspects at the base of the underwater cultural heritage management. Nevertheless, the diagrams suggested by Manders in “Guidelines for Protection of Submerged Wooden Cultural Heritage” and Hannahs in “Underwater Parks versus Preserves: Data or Access” have considerably inspired the author in the drawing of his personal theoretical model for the underwater cultural heritage management.

Overall, there are three main limits affecting the analysis provided in this part. First, I identify and explain a set of values that justify the investment of resources in the management of the underwater cultural heritage (chapter 1, paragraph 2). However, this passage does not explain how to extrapolate these values from the observation and investigation of a site. In other words, according to which parameters is it possible to affirm, for example, that a specific underwater cultural site is more relevant from an historical or archaeological perspective than another one? This process has been excluded from this analysis because, despite a general attempt to make it scientifically measurable, it is still highly based on subjective interpretations. Several states have tried to face this challenge proposing disparate logical schemes aimed to guide the decision makers' interpretations. According to the author one of the most advanced is the Dutch model⁶, which is, therefore, here shortly presented. Similar considerations are also valid for the risk assessment that I introduced in paragraph three. In this case the British method is particularly appealing and, as a result, it is briefly explained.

Second, the figure named "hierarchical pyramid of interests with a bottom up impact" (chapter 1, paragraph 4) is the result of a personal interpretation of the principles adopted in the 2001 UNESCO Convention. There are no definitive proofs of its validity and, consequently, it may not be unanimously accepted. Nevertheless, this figure has been here principally used as a conceptual tool for explaining the net of interests related to the underwater cultural heritage management.

Third, the last paragraph of this chapter proposes a theoretical model that may assist those who are responsible for the underwater cultural heritage management. This model has been drawn organizing in logical and structured steps the decisional process aimed to identify the best method of management for a specific site. Being a simplified generalization of a complex and dynamic system this model is a flexible tool of analysis. Therefore, the order of the identified flowcharts may be eventually modified according to the observed specific conditions of each underwater cultural site.

⁶ The document Nisa, *Management Plan of shipwreck site Burgzand Noord 10*, 2004, pp. 18-21, shows how this model has been applied on the shipwreck site BZN 10.

4. International laws and perspectives

The second part of this thesis focuses on international laws and interpretative perspectives related to the underwater cultural heritage. The analysis of these topics may be divided in two sections: the identification of clashing aspects and the interpretation of their origins.

The first section (the first three paragraphs of chapter 2) provides a detailed study of the most relevant international laws dealing with the underwater cultural heritage. The goal is to explain the current international legal scenario through the analysis of the basic principles of the 1982 United Nations Convention on the Law of the Sea, the 1989 Salvage Law Convention, the Law of Finds, and the 2001 UNESCO Convention and its Annex.

The first paragraph highlights how the 1982 UNCLOS has introduced an advanced system for the management of maritime issues but, it has dedicated scarce attention to the underwater cultural heritage. The main question discussed in this paragraph is: why the provisions on the underwater cultural heritage, established in the 1982 Convention, are considered obsolete and ineffective?

Paragraph 2 shows: first, how the applications of the Salvage Law and the Law of Finds have been extended to the underwater cultural heritage, raising serious doubts about the suitability of these regimes; second, how the latest US-courts sentences have introduced more demanding requirements for historic salvage companies. What are the mechanisms that regulate the salvage law and the law of finds? How can the salvage of a wreck in international waters be judged by a US court? According to case law, what are the emerging trends related to the historic salvage law? What are the consequences of this new trend?

Paragraph 3 is dedicated to the 2001 UNESCO Convention. It aims to present the historical development of this convention in order to show how it has significantly changed the global system of protection of the underwater cultural heritage, despite some structural limits and ambiguities, and to highlight the next steps for strengthening its implementation. Among the issues that will be considered in this paragraph there are, for example, the following questions: On which principles has the 2001 UNESCO Convention been structured? Which ones have been the most debated aspects in the drafting of the Convention? Why does the text of the 2001 UNESCO Convention contain “constructive ambiguities”? What is the relation between the

2001 UNESCO Convention and the 1982 UNCLOS, the Salvage Law and the Law of Finds? Why, contrary to the text of the Convention, the Rules of the Annex have immediately achieved a wide global success? What are the next steps for strengthening the 2001 UNESCO Convention enforcement?

The second section (last three paragraphs of chapter 2) aims to investigate the causes of this vibrant context, still dominated by diverging views. The current lack, at international level, of a harmonic and shared system of protection endangers the underwater cultural heritage and, in addition, it might also cause possible clashes.

For this purpose, the will of the states is firstly examined (paragraph 4) interpreting their ratification of the main international conventions in force (1982 United Nations Convention on the Law of the Sea, 1989 Salvage Law Convention and 2001 UNESCO Convention). Why has the 2001 UNESCO Convention entered into force only seven years after its adoption? What is the origin of the states' diverging perspectives on the protection of the underwater cultural heritage? Is it possible to classify these positions through category-related patterns like, for example, "producer states" vs. "consumer states"?

Following, in paragraph 5, I offer some clarifications on a topic widely debated: the title and sovereign immunity of ancient sunken state vessels. Are title and sovereign immunity aspects of a unique principle or they are two different, but strictly interlinked factors? Should they be considered principles of customary international law? Why is it important (but still hard) to dissipate the doubts on this issue?

The last section of this chapter is dedicated to the clash between archaeologists and historic salvage companies. These diverging views are evaluated from a legal, methodological and ethical perspective. Therefore, what are the main reasons at the base of this conflict? Is it possible to harmonize these diverging views? Then, I try to evaluate whether historic salvage is really a cost-effective business or not. Is it profitable to invest in historic salvage activities? What would presumably be the role of historic salvage companies in the future management of the underwater cultural heritage?

Considering the related literature, several papers and books describe the juridical principles adopted in the 2001 UNESCO Convention, their presumed compatibility with the UNCLOS system and their clashes

with the Salvage law and the Laws of Find. Authors as, for example, Bederman, Boesten, Dromgoole, Garabello, O’Keefe, Rau and Scovazzi have accurately investigated these issues. Nonetheless, these topics are still under debate at international level and several doubts have not been completely clarified yet.

Differently, there are no studies that compare the states’ ratifications to the UNCLOS, 1989 Salvage Law Convention and 2001 UNESCO Convention. Therefore, this area is a fruitful place for original research. In my attempt to find the causes at the base of the states’ conflicting views, I tested the Merryman’s distinction between market and source states as a possible explanatory theory, but the result is only a partially satisfactory.

Among the authors who have more actively participated in the debate related to the sovereign immunity of ancient sunken states’ vessels we can mention Aznar-Gomez, Boasten, Bederman, Caflish, Forrest, Mainetti, Riphagen and Roach. Even if these authors have generally investigated the same case studies, their analyses reach diverse and, at times, divergent conclusions. After accurately considering their opinions, I propose my own interpretation of this complex issue.

Finally, concerning the clash between underwater archaeologists and salvage companies, Villegas Zamora and Maarleveld have published excellent studies on their methodological and ethical incompatibility. Instead, there are not advanced researches on the financial (in)succes of the historic salvage companies (with the relative exception of Throckmorton, “The World’s Worst Investment: The Economics of Treasure Hunting with Real-Life Comparisons”).

Clearly, this part of the thesis has also three main constraints. First, for the analysis of the last trends in the historic salvage law I focused the attention exclusively on the U.S. sentences of the last 20 years. This decision is justified by the fact that: first, the main sentences on this issue have usually passed through the U.S. courts, and, second, that the goal of this analysis is purely to show the new emerging trends on the matter. Therefore, the author has considered pointless to explore all the sentences related to the historic salvages and, as a result, he has simply summarized their main directions.

Second, the analysis conducted on the issue of sovereign immunity may dispel some doubts and misunderstandings. However, this is a

delicate issue that requires convincing data to be definitively solved. Despite the rigorous investigation conducted, the overall scenario is so complicated and, for some aspects, confusing that some reservations persist.

Third, assessing the monetary outcomes of historic salvage companies, the author has considered the yearly financial statement of only one company: the Odyssey Marine Exploration. Truthfully, this is one of the most organized and active historic salvage companies in the world. Moreover, differently from other salvage companies, the Odyssey Marine Exploration has undertaken a policy of (relative) transparency at least for what concerns the financial results annually achieved. Nevertheless, assessing the results of other historic salvage companies could substantially strengthen the results reached in this section.

5. Main methods of management

The thesis concludes analyzing and comparing the main methods of management for the underwater cultural heritage. Considering the scarce resources (financial, technical, human, etc.) available, the high costs for operating in submerged contexts and the desire to efficiently and efficaciously protect and enhance this heritage, it is extremely important to consciously choose the right method of management for each site. Therefore, the main goals of this part are to explain: first, in which specific circumstances the adoption of these methods is more convenient; second, which are their related advantages and disadvantages; and, third, which technical and decision-making aspects should be deeper examined in the future.

The methods of management here analyzed are: recovery and exhibition in museums “on-land”, underwater museums, underwater archaeological parks, restricted access sites and reburial or covering sites (plus a short introduction to the “no-management” option). The features of these methods are primarily explored through the detailed analysis of a main case study. They are: the Vasa Museum (Sweden), the Baiheliang Underwater Museum (China) and the plans for the development of an Underwater Museum in Alexandria (Egypt), the Florida’s Underwater Archaeological Preserves (USA), the Protected Wreck Sites (UK) and the BurgZand Noord 10 (the Netherlands). However, in the text, there are also numerous references to other

“secondary cases”: they permit to compare alternative technical solutions or to underline the distinct results achievable in spite of using the same method of management.

The case studies have been principally selected in view of their relevance for the international scientific community. This condition has been assessed evaluating factors such as, for example, the number of visitors per year (whether the site is accessible), the adoption of innovative and successful conservation treatments, the effective capacity to involve the local communities in the process of management, the number of related scientific publications and speeches in international conferences. Furthermore, this part focuses the attention to those sites located in “relatively” shallow waters (within 40 meter deep) due to their more favorable conditions for public access. The adoption of these parameters has considerably downsized the list of potential candidates. Anyway, practical factors have also been taken into account, such as, for example, the possibility to get an adequate amount of research material in English and the availability of the personnel involved in the management of the selected sites to offer clarifications or missing data.

As a result, this research examines different typologies of sites (such as, for example, shipwrecks, sunken cities, etc.) dislocated in the territorial waters of several states like Sweden, China, Egypt, United States, United Kingdom and the Netherlands.

From an organizational viewpoint, the analysis of the methods of management and their related case studies has been organized in this way: general introduction, brief history of the selected site, short evaluation of its organizational and legal context, identification of the values and threats affecting it, analysis of the interests at stake. The information collected is then rationalized in tables that sum up benefits and limits of each method of management. The last part of the thesis proposes a comparative analysis of the applicable methods of management, considering their positive and negative outcomes.

In all the paragraphs of this final chapter the main question is one: What are the structural benefits and limits of each method of management? However, answering this question, further questions can be raised. For example: How is possible to explain the immense success of the Vasa Museum compared to other maritime museums? Should the reburial sites be publically promoted? Which are the boards of

preservation *in situ* concept? Therefore, in the end, this part results more articulated than expected.

Concerning the literature, some authors have proposed fairly comprehensive books and articles on the solutions adopted to manage the underwater cultural sites (among them, for example, Manders, Maniscalco, Palma, Satchel, Scott-Ireton and Spirek). However, there are some evident limits. First of all, most of the time the attention is focused only on the history of the considered sites and the techniques adopted to investigate them. The aspects concerning the management of these sites are often only superficially considered. Second, there are no complete studies proposing a comparative analysis of the methods of management applicable to this heritage.

Concerning the traditional literature related to the selected main case studies, the following works proved to be helpful: Almkvist, Cederlund, Hocker and Olsson, provide a detailed view of the Vasa history, conservation and archaeological investigation; Chuanping, Houxy and Xiuriun Ge comprehensively describe the reasons that led to the construction of the Baiheliang Underwater Museum; Goddio (*et all.*) reports the results of the archaeological investigations conducted at the submerged royal quarters of Alexandria, while Amin, Fuchs and Guerin provide interesting considerations about the feasibility to construct an underwater museum and its impact at local level; Scott-Ireton offers a complete analysis (archaeological, juridical, managerial, etc.) of the Florida's Underwater Archaeological Preserves; Dromgoole reflects on the legal and practical efficiency of the U.K. Protected Wreck Sites; Manders, Maarleveld and Vos evaluate the BurgZand Noord 10 site from different viewpoints (archaeological, conservational and legal). The documents published by these authors have significantly contributed to the development of this dissertation. However, in several circumstances, some essential data for this research were not available in the published material. Consequently, the author has also tried to access missing data through interviews or email exchanges with the personnel involved in the management of these sites. In some cases this activity has resulted to be really beneficial for the research, while in others it has been unsuccessful.

This final part faces three main limits as well. First, due to the restricted time available for the drawing up of this dissertation (three years), it has been possible to examine only a limited number of selected case

studies. As a result, some factors may be overestimated, while other may be underestimated.

Second, despite the good will of the author, the investigation of some aspects is evidently incomplete or marginal. Unfortunately, in some cases the access to specific key-information has been limited due to different causes (a perceptible decision makers' unwillingness to discuss about some aspects, an effective lack of data concerning certain issues, etc.). These barriers have partially constrained my attempt to provide an advanced research on aspects like, for example, the distribution of the financial resources available, the effective public access to certain underwater sites or the social utility of some measures.

Third, information related to different methods of management is not balanced. For example, on one side, there is a good amount of information and case studies covering the recovery and exhibition of underwater cultural goods in "on-land" museums. This abundance of data favors a deep investigation of the benefits and limits affecting this method of management and it permits to compare the results achieved by different structures. On the other side, it is a challenging issue to evaluate the advantages and disadvantages of an underwater museum because currently only one underwater museum is active (the Baiheliang Underwater Museum of Chongqing, China) and another one is planned, but it has not been constructed yet (the Alexandria Underwater Museum, Egypt). Therefore, the benefits and limits of this method (and moderately of other methods as well) have been assessed more on the base of hypothetical assumptions and expectations (being signaled as such), than on "gathered evidences".

6. Final remarks

Concluding, I would like to add a few remarks on the issue of methodology. A wide-ranging multidisciplinary approach has been embraced in this thesis due to the need for systematical coordination and examination of different typologies of empirical data and literature evidences like, for example, historical investigations, archaeological surveys, conservative analysis, international laws, juridical sentences, codes of ethic, financial statements, and managerial studies. Moreover, for a comprehensive exploration of this topic the author has regularly used argumentative reflections, comparative analysis and problem

solving techniques (such as, for instance, interpretative models, frameworks for the prioritization of issues and executive summaries).

CHAPTER 1: THE THEORETICAL FRAMEWORK OF THE UNDERWATER CULTURAL HERITAGE MANAGEMENT

1. The difficulties to elaborate a shared definition of underwater cultural heritage

Generally speaking underwater cultural heritage and shipwrecks are considered synonyms. However, this interpretation presents two main limits. First, it is under inclusive: the underwater cultural heritage includes different typologies of sites other than shipwrecks (such as, for example, sunken cities, venerated sites, ancient harbors, prehistoric landscapes, fish traps, etc.). Second, it is simultaneously over inclusive: not all the shipwrecks are considered part of the underwater cultural heritage (for example, contemporary shipwreck sites are generally excluded). Therefore, defining the underwater cultural heritage requires the identification of one or more shared features among assets that are (or have been for a certain period of time) in an underwater environment. This is a complex issue because *“the terms ‘underwater’, ‘culture’, and ‘heritage’ are individually susceptible to various interpretations that are made no easier by their amalgamation. In particular, the term ‘culture’ is an all-embracing term that applies to every aspect of contemporary society”*⁷.

An interesting attempt to define the concept of underwater cultural heritage is offered by the art. 1, par. 1, of the 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage.

According to art. 1, par. 1: *“For the purposes of this Convention:*

- 1) (a) *‘Underwater cultural heritage’ means all traces of human existence having a cultural, historical or archaeological character which have been partially or totally underwater, periodically or continuously, for at least 100 years such as:*
 - (i) *sites, structures, buildings, artefacts and human remains, together with their archaeological and natural context;*
 - (ii) *vessels, aircraft, other vehicles or any part thereof, their cargo or other contents, together with their archaeological and natural context; and*
 - (iii) *objects of prehistoric character.*

⁷ Forrest C. J. S., *“Defining ‘underwater cultural heritage’”, International Journal of Nautical Archaeology*, Vol. 31, N. 1, 2002, p. 3.

(b) Pipelines and cables placed on the seabed shall not be considered as underwater cultural heritage.

(c) Installations other than pipelines and cables, placed on the seabed and still in use, shall not be considered as underwater cultural heritage.”⁸.

As sustained by Cottrell, a legal definition “must be broad enough to satisfy the states parties, specific enough to be clear in its scope, and narrow enough to leave out especially problematic regional or historical problem”⁹. This is exactly what the drafters of the 2001 UNESCO Convention tried to achieve proposing this definition of underwater cultural heritage.

The identification of the underwater cultural heritage as “all traces of human experience” it is a clear reference to the art. 1, par. 1 of the International Law Association (ILA) Draft Convention on the Protection of the Underwater Cultural Heritage (1994) which established that:

“For the purposes of this Convention:

1) “Underwater cultural heritage” means all traces of human existence including:

(a) sites, structures, buildings, artifacts and human remains, together with their archaeological and natural context; and

(b) wreck such as vessels, aircraft, other vehicles or any part thereof, its cargo or other contents, together with its archaeological and natural context.”¹⁰.

So, as first classification, the concept of underwater cultural heritage is linked to an idea of humanity¹¹: this means that they are elements (traces) created, used or somehow connected with the human beings.

⁸ UNESCO, Convention on the Protection of the Underwater Cultural Heritage, 2001, art. 1, par. 1, ref. <http://www.unesco.org/new/en/unesco/themes/underwater-cultural-heritage/the-2001-convention/official-text/>.

⁹ Cottrell E. M., “Keeping the Barbarians outside the Gate: Toward Comprehensive International Agreement Protecting Cultural Property”, *Chicago Journal of International Law*, Vol. 9, No. 2, Winter 2009, p. 633.

¹⁰ International Law Association (ILA), Draft Convention on the Protection of the Underwater Cultural Heritage, Buenos Aires, 1994, art. 1, par. 1. The text of the draft Convention is available at O’Keefe P. J., *Shipwrecked Heritage: A Commentary on the UNESCO Convention on Underwater Cultural Heritage*, Institute of Art and Law (IAL), 2002, pp. 192-197.

¹¹ See O’Keefe P. J. (2002), *last op. cit.*, p. 41.

Then art. 1, par. 1, limits the extension of this definition establishing two additional parameters: a qualitative “*character*” and a time-limit. An asset must possess both these parameters to be included in the group of the underwater cultural goods.

This solution is the final result of a difficult compromise. During the negotiations of the 2001 UNESCO Convention, some states (mainly US and UK) proposed a “narrow” definition aimed to restrict the protection to only ‘*significant*’ assets. This position has been justified remarking the incredible high amount of financial resources and research capacities required to preserve all cultural goods that have been underwater for over 100 years. In their view, no state is able to bear such obligation and, as a result, it would be better to direct the resources available toward a selected group of particularly significant sites. Other states, on the contrary, sustained the so-called ‘*blanket protection*’ in which any sites over a certain age are worthy of protection¹².

As a result, the definition establishes “a cultural, historical or archaeological character” as first qualifying parameter. This condition allows a certain “*flexibility of interpretation*” within, of course, the limit of a *bona fide* interpretation of the Convention¹³. However, as already emphasized by O’Keefe, the phrase ‘archaeological character’ is meaningless and “*whether something is ‘cultural’ or ‘historical’ cannot be objective determined*”¹⁴.

Moreover, as already stressed in different circumstances, “*it is very difficult in practice to evaluate whether a given rest is underwater cultural heritage or not until an activity has been directed at such heritage*”¹⁵. According to Forrest, this barrier may be overcome assuming that “*prima facie all traces of human existence over 100 years old have a cultural, historical, or archaeological character and are subject to the protection regime*

¹² See O’Keefe P. J. (2002), *op. cit.*, p. 42.

¹³ Carducci G., “The Expanding Protection of the Underwater Cultural Heritage: The New UNESCO Convention versus Existing International Law”, in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002.

¹⁴ O’Keefe P. J. (2002), *op. cit.*, p. 43.

¹⁵ Gonzalez A. W., “Negotiating the Convention on Underwater Cultural Heritage: Myths and Reality”, in Garabello R. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Before and After the 2001 UNESCO Convention*, Publications on Ocean Development, Vol. 41, Martinus Nijhoff Publishers, Leiden, 2003, p. 109.

until such time as the contrary is proven”¹⁶. In his opinion, the adoption of this approach could be cost-effective from a managerial perspective: the resources required for determining whether a site is significant or not, could be distributed for more (scientific) beneficial aims¹⁷.

Finally, according to Boesten, “the concept of cultural heritage is not necessarily linked to archaeological or historical value only but can be linked to emotional value as well”¹⁸. This consideration is particularly valid for venerated site and war graves. However, a flexible interpretation of the “cultural character” should permit to include, whether appropriate, an evaluation of the emotional value too.

The second parameter included in the definition is the time-limit. According to the Convention, underwater cultural heritage are the traces of human existence that have been underwater for at least 100 years. This time-limit was added with the aim to exclude vessels sunken in too recent years. The reference to 100 years was adopted taking into consideration the frequent recurrence of this specific time lapse in several national legislations dealing with cultural heritage.

Nevertheless, some experts criticized this parameter, considering the time-limit of 100 years overextended and “instituted for administrative purpose only”¹⁹. In the view of Boesten “there is neither scientific proof nor any convincing evidence that the majority of wrecks of more than 100 years old are of ‘cultural heritage’ significance and therefore should qualify for protection”²⁰. Moreover, according to the same author, “A convention, which would exhort protection without imposing a duty to ensure the effectiveness of protection, would be meaningless. Accordingly, whilst the obligation is understandable it is undermined by the incapacity of most States to meet it”²¹.

These critics provide interesting considerations. Nonetheless, they may be contested in view of three main argumentations.

¹⁶ Forrest C. J. S. (2002), *op. cit.*, p. 9. The problem to “objectively” assess the values associated with underwater cultural heritage will be further examined in the next paragraph.

¹⁷ See Forrest C. J. S. (2002), *last op. cit.*, pp. 8-10.

¹⁸ Boesten E., *Archaeological and/or Historic Valuable Shipwrecks in International Waters*, TMC Asser Press, The Hague, 2002, p. 140.

¹⁹ Boesten E. (2002), *last op. cit.*, p. 140.

²⁰ Boesten E. (2002), *last op. cit.*, p. 140.

²¹ Boesten E. (2002), *last op. cit.*, p. 141.

First, as already stated, both “character” and time-limit are necessary parameters in the identification of the underwater cultural heritage. Therefore, even if an object has rested underwater more than 100 years, but, according to the competent authorities, it doesn’t possess “a cultural, historical or archaeological character”, it will not probably be considered as a piece of underwater cultural heritage. Therefore, as highlighted by Rau, “it would have been preferable to speak of “value”, “significance” or “importance” instead of “character””²².

Second, the time-limit represents a debatable, but objective element: in association with the flexible interpretation of the cultural, historical and archaeological character it guarantees a fixed common legal definition of underwater cultural heritage at international level²³.

Finally, it is evident that the relevant number of underwater cultural sites and the few financial resources available to manage them represents a major challenge. However, this is not a good reason to exclude *a priori* the protection of certain sites²⁴: following such approach the risk is that “the significance of the underwater cultural heritage is a reflection of the capacity or political willingness of the State to provide funding for the management of the underwater cultural heritage. This is certainly not conducive to a regime that will preserve underwater cultural heritage for the benefit of humankind”²⁵. On the contrary, the adoption and enforcement of a shared international legal framework may already strength the protection for the underwater cultural heritage regardless of the limited resources available. According to Henderson, assuming in advance that all objects which have been underwater more than 100 years possess a cultural, historical or archaeological character (shifting in this way the burden of proof to a second moment and providing at first instance protection to all of them) could be “the most convenient and

²² Rau M., “The UNESCO Convention on Underwater Cultural Heritage and the International Law of the Sea”, in Frowein J. A. and Wolfrum R. (eds.), *Max Planck Yearbook of United Nations Law*, Vol. 6, 2002, p. 404.

²³ It is debatable in the sense that the cut-off date could be defined in terms of a shorter or longer period of time. For instance, the 1992 Draft proposed a 50 years limitation, but it was rejected for practical and administrative problems.

²⁴ Of course this does not mean that all the underwater cultural sites must be protected in the same way and allocating the same resources for each of them. But for all of them a minimum standard of legal protection must be ensured.

²⁵ Forrest C. J. S. (2002), *op. cit.*, p. 9.

effective administrative procedure for the protection of the underwater cultural heritage"²⁶.

Therefore, even if it is possible that the limit of 100 years was primarily added for administrative reasons, it provides, in any case, an objective parameter that reduces the risk of misunderstandings, harmonize the entire system, and tries to accommodate the different views expressed.

This definition, on the contrary, fails to take into account the existence of "more recent" underwater cultural sites (those that have spent less than 100 years underwater). The warships that sank during the Second World War are, for example, currently excluded by this definition despite their unquestioned historical value. Probably the decision to (temporarily) omit these sites was taken in order to avoid discussions on the tricky issue of the state vessel sovereign immunity²⁷. This evident limit could be partially overcome adopting specific measures in the national legislation or signing *ad hoc* bilateral, regional or multilateral agreements (thus, indirectly extending the definition of underwater cultural heritage)²⁸.

Article 1 proposes also a non-exclusive list ("*such as*") of the most common underwater cultural goods. The first two points of the list, recall objects already included in the definition of the ILA Draft Convention like, sites, structures, buildings, artifacts and human remains from one hand, and vessels, aircrafts, other vehicles and their cargo on the other hand. Interestingly, this article stresses the relevance of the archaeological and natural context as part of the underwater cultural heritage. This is clearly an attempt to encourage the spread of an "archaeological perspective": an underwater archaeological site is composed of tangible artifacts, but also intangible information that archaeologist may discover examining the spatial dislocation of these

²⁶ Henderson G., "Significance assessment or blanket protection", *International Journal of Nautical Archaeology*, Vol. 30, Issue 1, 2001, p. 3. See, also, Forrest C. J. S. (2002), *last op. cit.*, pp. 7-10.

²⁷ The state vessel sovereign immunity issue will be analyzed in chapter 2, par. 5.

²⁸ For instance according to the article 1 of the *Code of good Practice for the management of the Underwater Cultural Heritage in the Baltic Sea Region (COPUCH)* developed by the Monitoring Group on Cultural Heritage in the Baltic Sea States, "'Underwater cultural heritage' means all cultural, historical and/or archaeological traces of human existence which have been under water for at least 100 years, or which otherwise are regarded as historically significant or protected by heritage legislation".

objects within their surrounding environment. Therefore, “*consideration has to be given to a site as a whole*”²⁹.

Concerning the third point, it has been preferred the sentence “*objects of prehistoric character*” rather than “*paleontological material*” probably to stress again the link to humans³⁰.

Evaluating the list proposed by art. 1, it is possible to classify the underwater cultural heritage in different typology of sites: movable, immovable, semi-movable and a combination of such conditions. Movable artifacts are those that may be easily recovered or relocated like, for example, amphorae, jars and bottles. Immovable sites are those structurally interlinked with the places in which they are located such as sunken cities or ancient port facilities. The structure of a shipwreck can be considered as a semi-movable site: theoretically it is possible to recover it, but practically this option is strictly limited due to several constraints (like, for instance, extremely high operative costs, the necessity of advanced technologies and professional divers, and the required long-term conservative processes once the wreck is exposed to the air). Several sites comprehend different typologies of goods: for example, they may include the semi-movable hull of the ship, but also numerous movable artifacts (inventory, cargo and personal belongings) that were on-board when the vessel sank. This distinction in movable, immovable and semi-movable sites is particularly relevant in two circumstances: first, to assess the factor of risks; second, to organize the display of these goods.

The 2001 UNESCO Convention definition of underwater cultural heritage will be considered as a reference point in this thesis in view of the wide consensus that it achieved in the international archaeological community. However, as already stressed, this definition is an attempt to accommodate different views; and, in addition, it is a “legal definition” specifically adopted to suit the aims of the 2001 UNESCO Convention. Therefore, this definition “*does not, and cannot, determine what is underwater cultural heritage, but only what underwater cultural heritage will be subject to the protective regime*”³¹.

²⁹ Koschtial U., “The 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage: advantages and challenges”, *Museum International*, Vol. 60, Issue 4, February 2009, p. 66.

³⁰ See O’Keef P. J. (2002), *op. cit.*, p. 44.

³¹ Forrest C. J. S. (2002), *op. cit.*, p. 6.

2. The identification and assessment of the values associated with the underwater cultural heritage: a complex challenge, but of great importance

Nowadays the international community recognizes the relevance of the underwater cultural heritage as archaeological and historical resource. The preamble of the 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage explicitly declares: *“Acknowledging the importance of underwater cultural heritage as an integral part of the cultural heritage of humanity and a particularly important element in the history of peoples, nations, and their relations which each other concerning their common heritage”*³². Several values seem associated with the underwater cultural heritage. It is primarily due to these values that different stakeholders express a serious interest (educational, recreational and scientific) toward the management of this heritage.

Before listing and explaining the values generally attributed to the underwater cultural heritage some considerations are required.

First, a heritage value is not an “objective element”, but it is a feature assigned to a specific good by a social process: *“The tangible fabric of heritage places and objects is capable of objective quantification, but it is the values we attach to places and objects that are the fuel of the fire heritage”*³³. Therefore, a value could be perceived differently according to:

- the quantity and quality of the information available. For example, the uniqueness of a site is evaluated considering the information currently available. Further investigations could confirm its significance, but they could also reveal overstated expectations: *“a wreck that used to be the only one of its kind can be, many years later, one of many”*³⁴;
- the geographical context. The values attributed to a site might be different at local, national or international level (this is, in particular, the case of venerated sites and war graves in which the emotional aspect is predominantly). Moreover, two countries may associate different values to the same site: “a

³² UNESCO, Convention on the Protection of the Underwater Cultural Heritage, 2001, *op. cit.*, preamble.

³³ Taylor K., “Cultural heritage management: a possible role for charters and principles in Asia”, *International Journals of Heritage Studies*, Vol. 10, Issue 5, 2004, p. 420.

³⁴ Manders M., “Safeguarding a site: the Master-Management Plan”, *MoSS Newsletter*3, May 2004a, p. 16.

wreck with a certain historical value, because it can be related to a certain event, can be very important for some of us (it becomes a relic), but for other it can be one of many as well”³⁵;

- the period of time considered. An object with a high value today could lose its significance in the future, as well as the opposite. As a result, as stated by Drury and McPherson, “*Each generation should therefore shape and sustain the historic environment in ways that allow people to use, enjoy and benefit from it, without compromising the ability of future generations to do the same*”³⁶.

For this reason, the “significance approach” suggested by some states for defining the underwater cultural heritage seems unreliable, highly subjective and inadequate for the organization of an international system aimed to protect the underwater cultural heritage wherever located.

Second, despite the considerations exposed above, identifying the values of an underwater cultural site is an important step in order, from one hand, to assess its most suitable and sustainable methods of management; on the other hand, to justify the costs invested in its protection and enhancement. On the contrary, as highlight by Claesson, “*maritime and cultural resources, specifically underwater heritage sites such as shipwrecks, are generally not assessed in terms of overall value, and heritage managers charge with their conservation, redevelopment, and long-term care rarely consider valuation as an assessment tool*”³⁷. Probably, this lack is due to the difficulties to provide an empirical assessment of the values of a site.

At international level there is not a shared model for assessing the values of the underwater cultural heritage. Several states have tried to face this challenge proposing disparate logical schemes aimed to guide the decision makers’ interpretations. According to the author one of the most advanced is, probably, the Dutch model³⁸.

³⁵ Manders M. (2004a), *last op. cit.*, p. 16.

³⁶ Drury P. and McPherson A., *Conservation Principles, Policies and Guidance, for the Sustainable Management of the Historic Environment*, English Heritage, London, April 2008, p. 19.

³⁷ Claesson S., “The Value and Valuation of Maritime Cultural Heritage”, *International Journal of Cultural Property*, Vol. 18, Issue 1, 2011, p. 2.

³⁸ The document Nisa, *Management Plan of shipwreck site Burgzand Noord* 10, 2004, pp. 18-21, shows how this model has been applied on the shipwreck site BZN 10.

This model collects and analysis a huge amounts of scientific data (state of preservation and integrity, environmental conditions, relation between mobilia and wreck parts, constructional features, etc.) in order to assess the values of a sites (aesthetic value, memory value, grade of uniqueness, etc.)³⁹. As expressively states in the report “*the values can be expressed by using descriptive, judgmental or scoring method*”⁴⁰. Therefore, there is still (inevitably) a “qualitative interpretation” of the values of a site. Nevertheless, requiring the registration of a wide set of parameters and observations, adopting a strict format for the descriptive parts and relying on the *bona fide* of the underwater archaeologists, this method can be used to compare different wreck sites and, eventually, to prioritize them.

Third, defining the values of a site does not mean necessarily excavating it⁴¹. Certainly, through an archaeological excavation new information can be discovered and the values of a site could be better identified. However, an excavation is a destructive process that act on non-renewable resources and, therefore, it is an activity that must be carefully evaluated and planned. Fortunately, the recent technological development (side scan sonar, multibeam, sub bottom profiler, etc.) has significantly reinforced the non-intrusive archaeological investigation of underwater cultural site and it is nowadays possible to get a first assessment of the values of a site without physically disturbing it.

Fourth, in the list below, I have intentionally avoided to delineate a ‘*cultural value*’ for the underwater cultural heritage. First of all, because the concept of culture is too wide and without precise boundaries; and, second, because all the objects that fall within the definition of underwater *cultural* heritage have already, at least implicitly, a ‘*cultural value*’.

³⁹ Actually this model does not only assess the values of a site, but it also aims to evaluate the factors of risks and to provide overall considerations about its future management and the related research activities.

⁴⁰ Nisa (2004), *last op. cit.*, p. 18.

⁴¹ In broad terms, an excavation is “*the process of uncovering a site by removing spoil or intrusive material, observing and identifying the archaeological material, and then recording and recovering it*”. Delgado J. P. (Edited by), *Encyclopaedia of Underwater and Maritime Archaeology*, British Museum Press, 1997, p. 144.

Overall, the values that characterize the underwater cultural heritage are the following⁴²:

- Aesthetic value: this value is based on several factors such as, for example, the integrity of the site, the visibility (the artifact is above the sea bed or covered by sediments) and its interaction with the surrounding environment. It is the value that often generates in the viewer a sense of pleasure and amazement. For example, the view of a group of ancient and almost intact amphorae in a rich biological marine ecosystem may be highly appreciated by sport divers, while such idyllic image may be lost if these amphorae were recovered and exhibited in a museum. At the same time an ancient vessel, almost totally covered by sediments and in a context of low water visibility, could not offer the same appealing view like if it was recovered, restored and exhibited in a museum⁴³.
- Archaeological value: it is the value that occurs mainly when the archaeological interpretation of an underwater cultural site and its context can supply unknown or additional information about: a) the historical evolution of the relations between man

⁴² The following value system is developed by the author in order to cover all the relevant aspects connected with the analysis of the underwater cultural heritage management. It is possible that other authors have used similar concepts, but giving them different meanings or without specifying their scope. For instance, in the explanation of the Rule 14, assessment of significance – criteria, the UNESCO Underwater Cultural Heritage Manual identifies seven ‘significances’ that determine the intrinsic value of the underwater cultural heritage. They are: archaeological significance, historical significance, research significance, aesthetic significance, social or spiritual significance and remembrance value, visibility and experience value, economical significance. UNESCO, Manual for activities directed at Underwater Cultural Heritage, Paris, 2011, ref. www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/unesco-manual-for-activities-directed-at-underwater-cultural-heritage/unesco-manual/, last access 14/11/2011.

On this topic see also: Throsby D., “Determining the Value of Cultural Goods: How Much (or How Little) Does Contingent Valuation Tell Us?”, *Journal of Cultural Economics*, Vol. 27, 2003, pp. 5-6; Claesson S. (2011), *op. cit.*, pp. 5-6; De la Torre M. (edited by), *Assessing the Values of Cultural Heritage*, Research Report From the Getty Conservation Institute, Los Angeles, 2002; Dunkley M., “The value of historic shipwrecks”, in Radić Rossi I., Gaspari A. and Pydyn A. (edited by), *Proceedings of the 13th Annual Meeting of the European Association of Archaeologists (Zadar, Croatia, 18-23 September 2007)*. Session: *Underwater Archaeology*, Croatian Archaeological Society, Zagreb, 2008; Zhang Y., *Rethinking Cultural Heritage: Valuations and Dilemmas*, University of Cambridge Development Studies, May 2010, pp. 3-4.

⁴³ Notice that these are just hypothetical examples. The debate between preservation *in situ* and recovery of the underwater cultural heritage will be analyzed later on.

and sea (commercial routes, maritime technologies, etc.); b) the lifestyles of societies during different époques (let's consider that the cultural goods that are nowadays underwater in origin were created in specific cultural, economic and social contexts); c) what happened in a specific historical event.

For example, the recovery and investigation of the sunken warship Vasa and its cargo has developed the knowledge about the Swedish society in the XVII century⁴⁴.

- Artistic value: among the discovered underwater cultural goods there are wonderful works of art. Examples are the roman statues found on the Grotta Azzurra (Blue Cave) at the island of Capri⁴⁵ or the statues recovered from the submerged city of Baia⁴⁶. Other time is the shipwreck itself to have an artistic value, like the warship Vasa which was decorated with several hundreds of wooden sculptures and ornaments.
- Economic value: in general terms, it is the monetary value of an underwater cultural good. The economic value can be evaluated following two different perspectives. Firstly, the direct economic value, which is the monetary value of the material used to construct an object, like the value of 1,000 gold coins. Usually it is possible to estimate the monetary value of the object considering the current value of its material. Secondly, the indirect economic value, which is the value linked, for example, to the public willingness to pay a ticket for its fruition⁴⁷. In this second case seems possible to provide an assessment of the indirect monetary value of the artifact too⁴⁸. Actually the economic value of the underwater cultural heritage is a debated issue between those, like treasure hunters, who perceived such heritage as a commodity that can be sold

⁴⁴ The Vasa shipwreck and its museum will be analyzed at chapter 3, paragraph 1, section 2.

⁴⁵ See the article Lorenzi R., *Roman statues found in Blue Grotto Cave*, September 2009.

⁴⁶ To get more information about the underwater archaeological park of Baia you can check the web site: <http://www.parcoarcheologicosommersodi.baia.it/>, last access 14/11/2011.

⁴⁷ An interesting attempt to estimate how much people are willing to pay in order to maintain shipwrecks in their pristine state is provided by Whitehead J. C. and Finney S. S., "Willingness to Pay for Submerged Maritime Cultural Resources", *Journal of Cultural Economics*, Vol. 27, 2003.

⁴⁸ A more detailed analysis on the economic value of cultural heritage and the criteria for its estimation is provided by Zhang Y. (2010), *op. cit.*, pp. 4-24.

in the antiquarian markets, and those, like the underwater archaeologists, who considered immeasurable in monetary terms an archaeological discovery. Numerous underwater archaeologists do not consider the economic value as a feature of the underwater cultural heritage, probably fearing the diffusion of an erroneous idea of “treasure”. However, on one hand, denying the existence of the economic value means to miss the vision of the reality and of the circumstances, even if undesirable, related thereto. On the other hand, the recognition of the economic value cannot be at odds with what clearly established in the 2001 Convention on the Protection of the Underwater Cultural Heritage: “*Underwater cultural heritage shall not be commercially exploited*”⁴⁹.

- Historical value: this value makes reference to the historical relevance of an asset before finishing underwater. It is the story of the object itself or the circumstances leading to its sinking that make it interesting for the public and the researchers. For example, the H. L. Hunley wreck, a submarine active during the American Civil War, has an historical value because it was the first submarine able to successfully sink an enemy ship (the USS Housatonic) in wartime, before sinking itself in “mysterious circumstances”⁵⁰.
- Research value: it is the value connected to the discoveries generated by the analysis of the underwater cultural heritage in various disciplines (other than archaeology and history). This sphere of value includes, for example, engineering studies on the technical construction of vessels, oceanographic studies on the ocean physical attributes or biological studies on the shipwrecks impact, as underwater artificial reefs, in the development of the marine ecosystem. For example, through the analysis of the hydrological inscription engraved at Baiheliang experts have the opportunity to “*study the hydrology, and regional and global changes of the Changjiang River*”⁵¹;

⁴⁹ UNESCO, Convention on the Protection of the Underwater Cultural Heritage, 2001, *op. cit.*, art. 2, par. 7. The debate between underwater archaeologists and salvage companies will be analyzed deeper in chapter 2, par. 6.

⁵⁰ Several information about the H. L. Hunley are available at the following web-site: <http://www.hunley.org/>, last access 14/11/2011.

⁵¹ Jixiang S., “From Underwater Archaeology to Underwater Cultural Heritage Protection: Speech for the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage”, *Proceedings of the International Meeting on*

- Spiritual value: the concept of underwater cultural heritage includes venerated sites and sunken vessels with human remains. These sites express a spiritual value: the firsts are tangible places of religious cults; the latter are relics of past dramatic human events that, working as natural submerged graveyards, keep alive the memory of those who died sinking with them. Examples of venerated sites are the Mayan Cenotes⁵². On the contrary, a well-known example of maritime graveyard is the wreck of the RMS Titanic⁵³. In 1912, due to the collision with an iceberg, this colossal steam ship sunk causing the death of over 1.500 people. This dramatic event is one of the deadliest peacetime maritime disasters in history.
- Symbolic value: some underwater cultural goods are so popular that they become symbols of proud and identity within a community. A clear example of this socio-anthropological process is the Riace Bronzes case. Once recovered, these statues literally became (and still are nowadays) the symbol of Reggio Calabria (despite the regrettable treatment reserved to them in the last few years).

To sum up, the values generally associated with the underwater cultural heritage are: aesthetic, archaeological, artistic, economic, historical, research, symbolic and spiritual. These values highlight the importance of the underwater cultural heritage and justify the investments allocated for its protection. Therefore, despite the complexity to empirically assess them, their evaluation is a core step in the process of management of the underwater cultural heritage.

the Protection, Presentation and Valorization of Underwater Cultural Heritage, Chongqing, (China), 2010, p. 202.

⁵² About the Mayan Cenotes is possible to read the article Martos López L. A., "Underwater Archaeological Exploration of the Mayan Cenotes", *Museum International*, Vol. 60, Issue 4, February 2009.

⁵³ About the RMS Titanic and its problematic management see, for instance, Miller M. L., "Underwater Cultural Heritage: is the Titanic still in peril as courts battle over the future of the historical vessel?", *Emory International Law Review*, Vol. 20; Varmer O., "RMS Titanic", in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006; McCormack, *The Titanic Ventures: Who Owns the Ocean Deep?*, Sep. 1999; Lin R. J., "Salvage Rights and Intellectual Property: are Copyright and Trademark Rights Included in the Salvage Rights to the R.M.S. Titanic?", *Tulane Maritime Law Journal*, 1998-99; Frigerio A., "Il quadro giuridico del Titanic a 100 anni dalla tragedia", *Aedon, reviews of arts and law on line*, n°1-2 - 2012.

3. Managing the risk: the principal threats affecting the underwater cultural heritage

As highlight by Grenier *“under the sea, irreplaceable site can be destroyed by acts of man or nature without anyone knowing”*⁵⁴. To avoid this regrettable situation it is essential to: discover the underwater cultural sites and organize *ad hoc* databases for planning their management⁵⁵; regulate the activities directed at underwater cultural heritage; and be aware of the threats that may put at risk this heritage. This paragraph aims to provide an organized list of the main perils affecting the underwater cultural heritage and to present a model for their assessment.

Two different kinds of sources may cause damages to the underwater cultural heritage: the human activities and the environmental (physical, biological and chemical) threats.

Among the human activities that may damage the underwater cultural heritage two sub-categories can be distinguished:

- the activities directed at underwater cultural heritage, which are the activities *“having underwater cultural heritage as their primary object and which may, directly or indirectly, physically disturb or otherwise damage underwater cultural heritage”*⁵⁶;
- the activities incidentally affecting the underwater cultural heritage which are the activities *“which, despite not having underwater cultural heritage as their primary object or one of their objects, may physically disturb or otherwise damage underwater cultural heritage”*⁵⁷.

⁵⁴ Grenier R., “Introduction: Mankind, and at Times Nature, are the True Risk to Underwater Cultural Heritage”, in Grenier R., Nutley D. and Cohran I. (eds.), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006, p. X.

⁵⁵ The importance of national and international databases will be successively highlight analyzing art. 19 of the 2001 UNESCO Convention. On the topic see, also, Waddell P. J. A., “Electronic Mapping of Underwater Sites”, in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998.

⁵⁶ UNESCO, Convention on the Protection of the Underwater Cultural Heritage, 2001, *op. cit.*, art. 1, par. 6.

⁵⁷ UNESCO (2001), *last op. cit.*, art. 1, par. 7.

The human activities directly threatening the underwater cultural heritage are relatively new⁵⁸. Starting from the invention of aqualung by Jacques-Yves Cousteau and Emile Gagnan (1942-43) the underwater cultural heritage has become increasingly accessible over the years. Thanks to the development of the diving equipment and the deep-sea exploration technologies, underwater archaeologists (and, as well, the general public) have more and better tools to access, investigate and comprehend the underwater cultural heritage⁵⁹. As pointed out by O'Keefe: "*submersibles has been built that allow access to depths in excess of 6,000 meters, enough to reach 98% of all ocean floor*"⁶⁰.

However, this increased accessibility has also produced negative side effects, strengthening the risk of looting, destruction and dispersal of the underwater cultural heritage. In general, there are two categories of "underwater looters": the irresponsible leisure divers, which aim to recover some "souvenirs" as proof of their experiences; and the treasure hunters, which plunder the underwater cultural goods in order to sell them in the (licit or illicit) antiquarian markets. Both of them represent a serious threat to the underwater cultural heritage. According to the UNESCO "*more than 160 large vessels have been commercially exploited on a large scale in the last thirty years, with up to 500.000 objects recovered and sold per wreck, and the ship's hull left destroyed*"⁶¹.

While the treasure hunters' activities are nowadays morally condemned in the international community, it is still under debate the role of historic salvage companies: should they be considered like treasure hunters, as stressed by the majority of the archaeological community or, on the contrary, these companies actively work in the protection and promotion of the underwater cultural heritage? Chapter 2, paragraph 6 will deeply examine this issue.

⁵⁸ Hutchinson G., "Threats to underwater cultural heritage. The problems of unprotected archaeological and historical sites, wrecks and objects found at sea", *Marine Policy*, Vol. 24, Issue 4, Jul 1996, p. 287.

⁵⁹ For a deeper historical reconstruction of the sea exploration see Maarleveld T. J., *History of diving*, course synopsis, Esbjerg.

⁶⁰ O'Keef P. J. (2002), *op. cit.*, p. 4.

⁶¹ These data are available at the web-site: http://portal.unesco.org/culture/en/ev.php-URL_ID=34464&URL_DO=DO_TOPIC&URL_SECTION=201.html, last access 22/03/2011.

On the contrary, the main human activities that could incidentally destroy or damage the underwater cultural heritage are fishing (using, for example, bottom trawl nets), anchorage, infrastructural works (such as, for example, the development of harbors or of power generation infrastructures) and drilling operations (related, for instance, to the installation of pipelines and cables or the extraction of oil, gas and minerals)⁶². Military practice area and transportation routes can represent additional factors of risk for the safeguard of the underwater cultural heritage.

It is hard to control the impact of these activities on the underwater cultural heritage. Nonetheless, competent authorities may adopt some measures in order to prevent or, at least, reduce the potential impact of these threats. Among the available solutions there are, for example, the delimitation of the already known underwater sites through warning signal buoys, the development of predictive models aimed to protect sites not yet discovered⁶³ or the negotiation and ratification of cooperative agreements with construction and extractive companies⁶⁴.

⁶² On this topic see Evans A. M., Firth A. and Staniforth M., "Old and New Threats to Submerged Cultural Landscape: Fishing, Farming and Energy Development", *Conservation and Management of Archaeological Sites*, Vol. 11, No. 1, March, 2009.

⁶³ A predictive model of archaeological heritage management has been developed in Netherlands, the 2nd generation IKAW (Indicatieve Kaart van Archaeologische Waarden). In order to know more about it read: Deebe J., Hallewas D. P. and Maarleveld T. J., *Predictive modeling in Archaeological Heritage Management of the Netherlands: the Indicative Map of Archaeological Values (2nd Generation)*, Proceedings of the National Service for Archaeological Heritage in the Netherlands, Vol. 45, 2002 and Maarleveld T. J., "Finding 'New' Boats: enhancing our chances in heritage management, a predictive approach", in Clark P., *The Dover Bronze Age Boat in Context. Society and water transport in prehistoric Europe*, Oxford, 2004.

⁶⁴ The Baltic area offers several cases of good cooperation. An example, even if it concerns a cooperation between public bodies, is the agreement signed by the Maritime Museum, the Stockholm City Museum and the Swedish Transport Administration for the archaeological investigation of the lake outside Riddarholmen. The lake will have to be temporarily drained for the construction of a tunnel for commuter train between Tomtebodavägen and Stockholms. Thanks to such collaboration a team of archaeologists will have the opportunity to excavate such area before the construction operations begin.

Another example of cooperation is the agreement signed by some Baltic states and the Nord Stream AG, for the construction of two gas pipelines through the Baltic Sea. As a result, the company planned the pipeline route avoiding, as far as possible, underwater cultural sites (already known or just discovered during the survey's operations), it adopted mitigation measures for protecting the underwater cultural heritage (like precautions in anchoring) and it involved local maritime and underwater archaeologists whenever required by the circumstances. See Nord Stream AG official web-site: <http://www.nord-stream.com/>.

Moreover, as suggested by Badalamenti *et al.*, involving “local fishers can provide valuable contributions through their knowledge of the area, assisting in the choice of the most suitable site to be placed under protection and providing useful information for its successful management”⁶⁵.

Besides the human activities, the maritime environment has also an impact on the conservation of the underwater cultural heritage. At international level the majority of the underwater archeologists shared the idea that, if undisturbed, inorganic and organic materials may resist several centuries underwater. The low levels of oxygen and light that characterize the underwater environment slow down the deterioration processes, favoring a long-term stabilization of the submerged cultural sites. Organic artifacts are, in particular, well preserved underwater whether covered by sediments and, thus, conserved in an anaerobic environment. This is one of the reasons why the 2001 UNESCO Convention emphasizes the conservation *in situ* as first option⁶⁶. However, in other circumstances, the underwater environment can also represent a major font of risk⁶⁷.

To begin with, the underwater context may threaten a site from a physical viewpoint. First of all, there is a risk of abrasion generated by the mechanical actions of water (currents and waves) and sediments (tidal movements). Second, sites located close to the coast (like, for example, ancient harbors and sunken cities) may be damaged by coastal erosion and other similar processes. Third, some underwater sites could be struck down and destroyed by catastrophic (but fortunately rare) natural events such as earthquakes, violent storms or tsunamis. Finally, the long-term effects of other natural events such as, for example, bradyseism and subsidence may also be viewed as font of risk.

Differently, the biological threat is mainly connected to the deterioration impact of fungi, bacteria and woodborers on the underwater cultural heritage. The biological threat is particularly

⁶⁵ Badalamenti F. *et al.*, “Cultural and socio-economic impacts of Mediterranean marine protected areas”, *Environmental Conservation*, Vol. 27, 2000, p.116.

⁶⁶ See chapter. 2, par. 3.

⁶⁷ About the environmental effect on the underwater cultural heritage and the relative measures of conservation see, for example, Memet J-B., “Conservation of Underwater Cultural Heritage: characteristics and new technologies”, *Museum International*, Vol. 60, Issue 4, February 2009 and Oxley I., “The Investigation of the Factors that Affect the Preservation of Underwater Archaeological Sites”, in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998.

strong on submerged organic elements that can be destroyed in few months if attacked by these organisms. Possibly due to the sea temperature variation, some wood boring organisms (like the *Teredo navalis*) have started to contaminate places previously viewed as “safe areas” like, for example, the south part of the Baltic Sea⁶⁸. Factors such as, for example, water temperature, percentage of salinity, amount of light, levels of oxygen and seabed features (morphology, composition, etc.) must be considered in order to evaluate the effective entity of the biological risk.

A third factor of risk is the result of the chemical interaction between the underwater cultural heritage and its surrounding environment. The effects can be different depending on the materials examined. Among the most relevant effects there are the corrosion of the metals (and the resulting graphitization and chromatic variation) and the disintegration of cellulose in wooden artifacts and structures (with a consequent risk of structural collapse if they are exposed to air before being treated). The chemical threat is one of the most difficult challenges to face because often it produces long-term period effects, which may persist even after the adoption of conservative treatments.

Managing the threats affecting the underwater cultural heritage is a complex issue due to different causes (the significant number of sites, the territorial extension of the sea, the costs to operate underwater, the limited technological and skilled human resources available, etc.). As a result, it is possible to operate simultaneously only on a restricted number of sites. For this reason a key aspect is to plan and act in advance for reducing, as far as possible, the factors of risks.

One way to strength the protection of the underwater cultural heritage is to assess in advance the potential threats (both of human or natural origin) that may affect a site. For such an aim, English Heritage (UK) and Heritage Council of Victoria (Australia) propose an interpretative model of risk management. As reported in the document, “*for each wreck site, information is gauged against a set of standard terms within 34 data fields. This enables assessment within a necessarily subjective process in a systematic and supportable manner*”⁶⁹.

⁶⁸ An advanced research on the diffusion of shipworm in the Baltic Sea is provided by Manders M. (editors), *Guidelines for predicting decay by shipworm in the Baltic Sea*, WreckProtect, 2011(a).

⁶⁹ See Dunkley M. (edited by), *Protected Wreck Sites at Risk: a Risk Management Handbook*, English Heritage, 2008 and Heritage Council of Victoria, *Public Access to Historic*

Once the required data are collected the level of risk for a site is assessed adopting the diagram reported below.

ESTIMATED LEVEL OF IMPACT	High	Med. Risk	High Risk	High Risk
	Medium	Low Risk	Med. Risk	High Risk
	Low	Low Risk	Low Risk	Med. Risk
		Low	Medium	High
		PROBABILITY OF OCCURRENCE		

1. Diagram for the assessment of the risks

This diagram evaluates the risk on the base of two factors: on one hand, estimating the potential negative effects that a threat could generate; on the other hand, evaluating the probability that this circumstance of peril may truly occur. On the base of these considerations, an underwater site *“will be considered to be at high risk if there is a significant likelihood of loss or further loss of historical, archaeological or artistic significance from it within the foreseeable future. Assessment at medium risk indicates that there is a reasonable likelihood of loss of historical, archaeological or artistic significance in the future if no change in the management regimes takes place. Low risk indicates that the site is being managed in a way that is sympathetic to its historical, archaeological or artistic significance”*⁷⁰.

This model is a simple, but helpful tool in the planning process, when decision makers have to evaluate issues such as, for example, the possibility to preserve a site *in situ*, the need to adopt preventive measures or the opportunity to make publically accessible an underwater cultural site. Moreover, registering the collected data and keeping monitored the concerned sites, the experts may observe eventual variations in the features of a site and, if required by the circumstances, they may promptly act to protect it.

Obviously, some menaces cannot be predicted and, in some cases, it is necessarily to take decisions in circumstances of emergency⁷¹. Nonetheless, assessing the risk is a practice that helps to plan and optimize the use of the (limited) available resources.

Shipwrecks: Guidelines 2010, p. 3. This document provides a comprehensive explanation of the data fields to fulfill (survival, overall conditions, condition trend, principal vulnerability, visibility, physical accessibility, intellectual accessibility, etc.). Moreover, it provides four case studies showing how this model should be used.

⁷⁰ Dunkley M. (2008), *last op. cit.*, p. 1.

⁷¹ See, for example, Bernier M. A., “To Dig or not to Dig? The Example of the Shipwreck of the Elizabeth and Mary”, in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006.

4. The interplaying interests related to the management of the underwater cultural heritage

Recognized the importance and the threats associated with the underwater cultural sites, the question to solve is how to manage them. The cultural background of these goods implies a set of interactive “interests” which evaluation seems fundamental in the development of a management plan⁷².

These interests are:

- Scientific research: it concerns the possibility of investigating the site in order to discover new information. This interest operates immediately after the localization of a site,⁷³ through the operations of recording and documentation, but it also persists after the implementation of a method of management. Mainly it represents the desire of underwater and maritime archaeologists to investigate, identify and interpret a site, although it can also involve other stakeholders such as, for example, naval engineers who are interested in the structure of a sunken vessel or marine biologists who study the interactions between an underwater cultural site and the surrounding marine environment.

Scientific research needs to balance the will to provide knowledge to the current generation through the analysis and interpretation of a site against the preservation of the site itself for future generations: *“both professional and amateur archaeologists should feel a responsibility to hand on as much of the evidence as possible, so that future generations can make sense of the clues that cannot be understood today”*⁷⁴.

The necessity to strike such a delicate balance is particularly evident when deciding whether to excavate or not a site. Excavation is a destructive process, but it could be a necessary (or preferable) step for understanding and interpreting a site. Recently non-destructive methods of investigation have been progressively recognized and supported by the archaeological

⁷² The word “interest” here means a series of aims that should be achieved, directly or indirectly, through an efficient management of the underwater cultural heritage.

⁷³ Actually the studies developed in order to localize a specific underwater site can be considered as part of this interest too.

⁷⁴ Bowens A. (editor), *Underwater Archaeology: The NAS Guide to Principles and Practice*, Second Edition, Nautical Archaeology Society, Portsmouth, 2009, p. 4.

community as a priority, considering the finite number of underwater cultural sites in the world. However, it is the responsibility of underwater and maritime archaeologists to define, on a case-by-case approach, whether a site should be excavated or not. Moreover, a plan of excavation must necessarily consider the processes of conservation and exhibition of the goods, as well as the related costs.

The interests of scientific research have a clear impact for the identification of a proper method of management: they cover the entire spectrum that runs from the preservation *in situ* to the possible recovery of the cultural goods and their display (or storage) in an on-land museum.

- Conservation: the conservation process aims to reduce and stabilize the deterioration of underwater cultural goods in order to ensure their study and enjoyment to present and future generations. In other words, the interest of conservation is to limit or block natural threats (physical, biological and chemical) that could damage or destroy the underwater cultural heritage. As stated by Hamilton: *"without conservation... most artifacts will perish, and important historic data will be lost"*⁷⁵.

There are two main typologies of conservative procedures: preventive measures, which aim to avoid future deterioration of the artifacts, and curative measures, which aim to arrest an ongoing process of deterioration. The restoration process may be also included as part of the conservation issue since it is intended to retrieve, as far as possible, the original appearance of the discovered artifact.

The structural weakness of some underwater cultural artifacts (in particular those made of organic) may require the adoption of conservative measures that are potentially in conflict with other interests: from a limitation of the access to the proscription of the recovery of the objects.

- Protection: it aims to prevent and defend the underwater cultural heritage from the risk of being looted, destroyed or damaged by voluntary or accidental human activities.

⁷⁵ Hamilton D. L., *Methods of Conserving Archaeological Material from Underwater Sites*, 1999, p. 4.

The fragility of the underwater cultural heritage in some cases requires the adoption of protective measures in order to ensure its continued existence (for example, from the reburial of a site to restrictions to its access). However, as remarked in the explanation of Rule 7 of the UNESCO Manual for activities directed at Underwater Cultural Heritage: “*The validity of protective policies depends on the extent to which the heritage can be experienced by the public and therefore on access. Restricting admission results in a lack of growth in public awareness, appreciation and knowledge. This is contrary to the objective of research, which is the creation of understanding and knowledge. Allowing access and permitting authentic experiences make protection valuable, less exclusive and better understood*”⁷⁶.

For obvious reasons, a primary impact on the protection of the underwater cultural heritage is played by the legal system in force at national and international level.

- Preservation *in situ*: this is at the same time an interest, in terms of conservation of the context, and a method of management. It is “*based on the recognition of the importance of the interplay between the site, its story and its context*”⁷⁷.

The 2001 UNESCO Convention emphasizes the preservation *in situ* as the first option due to different reasons.

First, underwater archaeologists usually agree that, in general, after an initial period of deterioration, an underwater object reaches a sort of equilibrium with the environment that leads to a stabilization of the degradation processes. This situation favors a long-term conservation of the artifacts underwater (if the surrounding conditions do not change). Therefore, the underwater cultural heritage is not necessarily in danger if preserved *in situ*⁷⁸.

Second, it has been suggested that the authenticity of the underwater cultural heritage “*is best experienced in situ*”⁷⁹. Although this view may be deemed as excessively rigid, it

⁷⁶ UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 7.

⁷⁷ UNESCO (2011), *last op. cit.*, explanation Rule 1.

⁷⁸ Actually, as highlight by Nutley, certain materials result better preserved underwater than on-land. See Nutley D., “Submerged Cultural Sites: opening a time capsule”, *Museum International*, Vol. 60, Issue 4, February 2009, p. 10.

⁷⁹ UNESCO (2011), *op. cit.*, explanation Rule 25.

should be noted that the “particularity” of this heritage is strictly connected with its underwater environmental context. As stated by Guerin *“the recovery of wrecks and their dry exhibition in museums... did much to make submerged heritage known and their display excited a large public. It was however always felt that the water that surrounds a wreck or submerged ruin and the context of the historical site were assets that were important for the full appreciation of a submerged relic”*⁸⁰.

Third, the archaeological investigation of a site (considering the positioning of the elements and their interactions with the surrounding environment) may lead to more advanced discoveries than that of a decontextualized and isolated artifact: *“underwater cultural heritage sites are truly time capsules of infinite variety, each with a story to tell”*⁸¹.

Fourth, the number of underwater sites is huge, but finite. So, it is important to keep a representative quantity of them for the analysis of future generations⁸².

Finally, the costs of excavation, recovery and conservation in the long-term of underwater cultural goods are very high due to the technologies needed to operate in such context and to the treatments required in order to conserve waterlogged objects. Given the numerous sites underwater and the limited financial resources, the preservation *in situ* may be the best choice in terms of costs and benefits. As Bowens puts it: *“in these circumstances every archaeologist must think hard before undertaking any excavation (itself a destructive process) that is not rescuing information ahead of inevitable destruction”*⁸³.

In addition, considering that shipwrecks often become artificial reefs enabling the growth of biological maritime ecosystems, the recovery of their hulls could produce related damage to the surrounding natural environment. This situation can generate a potential conflict between those agencies aiming to protect the

⁸⁰ Guerin U., “The UNESCO Convention on the Protection of the Underwater Cultural Heritage and the development of underwater museums”, *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010, pp. 209-210.

⁸¹ Nutley D. (2009), *op. cit.*, p. 16.

⁸² See Manders M., “In Situ Preservation: ‘the preferred option’”, *Museum International*, Vol. 60, Issue 4, February 2009, p. 32.

⁸³ Bowens A. ed. (2001), *op. cit.*, p. 5.

underwater cultural heritage and those seeking to protect the underwater environment.

Despite these considerations, the preservation *in situ* is not suitable for all cases, but “*placing this option first, however, obliges stakeholders and decision-makers to articulate their reasons why*”⁸⁴.

- Access: it aims to make publically enjoyable the underwater cultural heritage. The access can be direct, for example the view of an authentic artifact, or indirect, such as a reconstruction (material or virtual) of the object. However, the indirect access loses the authenticity that characterizes the original good (and, probably, it produces in the viewers different emotions).

Granting or denying access to a site is one of the most controversial issues. Negatively, a public access can generate a relevant risk for the conservation and protection of the site itself: the delicate conditions of a site can be destabilized and cases of damaging or looting are possible. In addition allowing access to significant heritage sites may imply costs. Positively, an open access to the sites raises visitors’ awareness of the importance and appeal of the underwater cultural heritage. Accordingly, it may favor the public willingness to respect, protect and sustain the underwater cultural heritage. As emphasized by Bower: “*If, for whatever reason, people do not believe that the past is significant, preservation of the visible part of the past will not be an issue and public funding will evaporate*”⁸⁵.

Finally, the local population could gain social and economic benefits from an efficient and sustainable plan of access (for instance, in terms of practical skills or revenues generated by tourism).

- Promotion: this interest aims to the enhancement of the underwater cultural heritage, encouraging the debate in the scientific community and the creation of public awareness. Promotion implies both the development of educational programs and the implementation of efficient communication processes. Educational programs help to foster different

⁸⁴ Maarleveld T. J., “How and Why Will Underwater Cultural Heritage Benefit from the 2001 UNESCO Convention?”, *Museum International*, Vol. 60, Issue 4, February 2009, p. 56.

⁸⁵ Bower M., “Marketing Nostalgia: An exploration of heritage management and its relation to the human consciousness”, in Cooper M. A., Firth A., Carman J. and Wheatley D. (edited by), *Managing Archaeology*, Routledge, London, 1995, p. 34.

positive activities: training people on the protection of the underwater cultural heritage, spreading good practices through divers' centers, raising awareness in local communities (such as the advice of "looking without touching")⁸⁶. Successful examples are the SSEAS (Sites Education and Archaeological Stewardship) program developed in Florida by the FPAN (Florida Public Archaeology Network), where divers are trained to get involved in researches and investigations, and the several educational initiatives promoted by the HWTMA (Hampshire and Wight Trust for Maritime Archaeology)⁸⁷.

The communication process focuses on the dissemination of information and it can be developed through different media: books, articles, brochures, waterproof information sheets, panels, documentaries, conferences, events, web sites, forum, social networks and databases. It works on different levels on the basis of the target to be achieved: information considered interesting and useful for underwater archaeologists (like, for example, side-scan sonar images) can be too difficult or not exciting for the general public (unless carefully explained)⁸⁸.

Promotion is professional and ethical responsibility for all those involved in the underwater cultural heritage management. It disseminates awareness and educates the public about the importance, appeal and fragility of the underwater cultural sites. Promoting its significance makes the underwater cultural heritage safer and its management more

⁸⁶ On the relevance of the educational programs see, for example, Hamer A. and Satchell J., "Engaging audiences with maritime archaeology: Delivering education, learning and training experiences from the classroom to the field", in Radić Rossi I., Gaspari A. and Pydyn A. (edited by), *Proceedings of the 13th Annual Meeting of the European Association of Archaeologists (Zadar, Croatia, 18-23 September 2007). Session: Underwater Archaeology*, Croatian Archaeological Society, Zagreb, 2008; Amer C. F. and Steen C., "The South Caroline Hobby Diver Program", in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998; and Staniforth M., "The Flinder University Intensive Program in Underwater Cultural Heritage Management", *Proceedings of the Inaugural Asia-Pacific Regional Conference on Underwater Cultural Heritage*, Asian Academy for Heritage Management, Manila, 2011.

⁸⁷ A short explanation of the SSEAS program is available at the following web-site: <http://www.flpublicarchaeology.org/documents/SSEAS.pdf>, while the HWTMA initiatives can be consulted at the official web-site: <http://www.hwtma.org.uk/>.

⁸⁸ On the communication process and how to involve the public on marine issues see, for example, Pettifer E. and Smeardon L. (edited by), *Dive Straight In! A Dip-In Resource for Engaging Public in Marine Issues*, CoastNet, UK, 2006.

sustainable from an economic perspective: *“The bulk of the money for activities directed at underwater cultural heritage covered by the Underwater Convention will come from governments, sale of images, tourism, non-profit foundations and possibly public subscription. For all these an enthusiastic public is essential and enthusiasm can only be generated by education of the public in the values of the underwater cultural heritage”*⁸⁹.

- Socio-economic impact: it aims, as a whole, to consider the social effects and the monetary costs-benefits that are generated, directly and indirectly, by the management of the underwater cultural heritage. The final goal is to provide a sustainable management of the underwater cultural heritage favoring, at the same time, the social and economic development of the local communities associated with this heritage (if any). The socio-economic impact interest is based on four different elements.

First, the direct social impact considers the involvement of the local population in the management of the underwater cultural heritage, in particular the creation of specialist workers and trained employees with relevant skills.

Second, the indirect social impact concerns the spread of knowledge, the creation of new job opportunities and the increase in the quality of life (social cohesion, sense of identity, etc.) within the community where a certain site is managed.

Third, the direct economic impact focuses on the economic feasibility, in terms of costs and benefits, of the method of management adopted. The costs could be connected to the recovery of the properties, the conservation treatments, the measures for safety and accessibility of the sites for visitors. The benefits, for example, are generated by the sale of tickets for visiting the site, merchandising, and copyright on images. However, as highlighted by the 2001 UNESCO Convention, *“underwater cultural heritage shall not be commercially exploited”*⁹⁰.

Fourth, the indirect economic impact highlights the monetary benefits enjoyed by local companies (like hotels, restaurants

⁸⁹ O’Keef P. J. (2002), *op. cit.*, p. 188.

⁹⁰ UNESCO, Convention on the Protection of the Underwater Cultural Heritage, 2001, art. 2, par. 7.

and transportation), deriving from the development of the heritage tourism sector.

Table 2 schematically re-organizes the interests on the basis of the different objects under focus and the general aims that they intend to reach.

Interest	Object	Main Aims
Scientific Research	Study of the Underwater Cultural Sites	To identify and interpret the underwater cultural sites
Conservation	Underwater Cultural Resources	To avoid the destruction and degradation of the underwater cultural heritage in order to keep it available for current and future generations
Protection	Underwater Cultural Resources	To avoid damages and the pillaging of the underwater cultural heritage in order to keep it available for current and future generations
Preservation <i>in situ</i>	Underwater Cultural Heritage Context	To maintain the underwater cultural heritage untouched in its context
Access	Public	To create the conditions for the enjoyment of the underwater cultural heritage by the general public
Promotion	Scientific Community and Public	To create awareness and understanding of the underwater cultural heritage
Socio-Economic Impact	Local Community	To derive socio-economic benefits from the management of the underwater cultural heritage

2. Table relating interests, objects and main aims

4.1 Evaluating the compatibility of the interests at stake: trade-off or constructive interaction?

All these interests are strictly interrelated and the development of one of them can generate both positive and negative effects on the others.

The following table summarizes the theoretical compatibility of aims between each interest⁹¹.

	Sci. Res.	Cons.	Prot.	Pres. <i>in situ</i>	Acc.	Prom.	So-Ec. Imp.
Scientific Research		High Com	High Com	Com	Neut	High Com	Neut
Conservation	High Com		High Com	Neut	Low Com	Com	Neut
Protection	High Com	High Com		Neut	Low Com	Com	Neut
Preservation <i>in situ</i>	Com	Neut	Neut		Low Com	Com	Neut
Access	Neut	Low Com	Low Com	Low Com		High Com	High Com
Promotion	High Com	Com	Com	Com	High Com		High Com
Soc.-Eco. Impact	Neut	Neut	Neut	Neut	High Com	High Com	

3. Table on the interacting interests

Two interests are considered: highly compatible when they have a constructive relation, so enhancing one of them produces significant benefits for the other too; compatible when, on the whole, their interaction may produce marginal benefits for both; neutral when the two interests are tenuously connected or the pros and cons produce by their interaction is balanced; low compatible when strengthening an interest may, in turn, adversely affect another one.

The results of the table can be explained analyzing each bilateral interaction.

- Scientific Research and Conservation: despite the fact that excavation is a destructive process, the interest for scientific research is inextricably connected with conservation. Each archaeological plan involves the responsibility for archeologists to consider the consequences of their activities in terms of conservation. Conversely underwater cultural goods are primarily conserved because their analysis can provide new or additional information about societies and cultures of the past.

⁹¹ This table is a personal attempt aimed to assess, through argumentative explanations, the positive and negative effects commonly generated by the interactions among interests. As a result, it must be considered as a flexible tool, open to possible different interpretations.

Therefore, the interests promoted by scientific research and conservation are compatible and strictly linked.

- Scientific Research and Protection: scientific research is totally compatible with the protection of the underwater cultural heritage. Essentially, scientific discoveries are the main reason for cultural goods to be protected.
- Scientific Research and Preservation *in situ*: this is a more tricky interaction. The context of a site is an extraordinary font of information which worth specific interpretation: for example, it may explain why a vessel sank and provide a chronology of past events. Contemporary technological developments allow the adoption of non-destructive archaeological methods for the analysis of an underwater site. Nevertheless, the excavation of a site is still (sometimes) the best option for its study. But an intrusive archaeological investigation requires considerable resources, making unrealizable (and even undesirable) the contemporary excavation of all sites. Thus, the preservation *in situ* may also work as a temporally solution waiting for a successive fully investigation of the site. For these reasons, scientific research and preservation *in situ* are nowadays considered compatible interests despite the consciousness that an excavation is a destructive process.
- Scientific Research and Access: the dissemination of the results of scientific research is the basic tool for promoting (from an educational perspective) the public access to the underwater cultural heritage. Scientific research can disclose the archaeological and historical value of an underwater site. So, the scientific recording of a site should be operational, in a reasonable time, before the definition of a management plan (and, therefore, before the opening of the site to the public). It is mainly when this order is not respected that these interests can clash.
- Scientific Research and Promotion: scientific research and promotion are the two sides of same coin. The dissemination of the results is an ethical responsibility of the researchers. Scientific discoveries must be communicated to the scientific community as well as to the public, adopting a proper

information methodology each time. Therefore, these two interests are fully compatible.

- Scientific Research and Socio-Economic Impact: scientific research defines the value of a specific underwater site and this, in addition to the dissemination of scientific results to the public, can generate interest toward a certain site and develop the heritage tourism. Furthermore, scientific research can generate positive social effects in terms of knowledge and skills. On the other hand, scientific research represents a cost that must be supported by public or private funds.
- Conservation and Protection: this is a positive and compatible interaction of interests with the common goal of preserving underwater cultural goods, for current and future generations, against their destruction, plunder or damaging.
- Conservation and Preservation *in situ*: it is a positive interaction because the underwater cultural heritage is not necessarily in danger if preserved *in situ*. Moreover, whether the sites should be threatened by natural factors, measures of conservation *in situ* could be adopted (like the reburial or covering of a site). However, certain physical, chemical or biological threats may compel the adoption of conservative measures incompatible with the preservation *in situ* (substantially it can become necessary the recovery of the goods). So, despite a general compatible goal, there could be a clash principally depending on the specific environmental conditions and the degree of exposition of the sites.
- Conservation and Access: the aims of these two interests pursue different goals. Even if they are not necessarily in contrast, an unsustainable or uncontrolled access can alter the delicate conditions of a site creating the necessity of specific measures of conservation that could be incompatible with the access interest (such as restricted access, reburial or recovering). Therefore, the interaction between protection and access may lead to a potential clash of interests that calls for further evaluation.
- Conservation and Promotion: even in this case the aims are different, but not necessarily in contrast. The promotion

through the scientific community can spread knowledge concerning the conservative treatments available and the adoption of best practices. Only under certain limited conditions it could be better to avoid the spread of information on a site (in particular its position and depth) for conservative reasons.

- Conservation and Socio-Economic Impact: conservation represents an economic cost for society and, from this perspective, it seems to generate a clash of interest. However, an object is conserved when it has historical, archaeological or cultural value, or in other words when it represents an asset for a society (in terms of knowledge, identification and enjoyment). The public benefit is particularly evident when the site is promoted and made accessible. Therefore the interaction between these two interests should be evaluated from a wider perspective that considers also access and promotion.
- Protection and Preservation *in situ*: the aims of protection and preservation *in situ* are compatible, but there are several potential threats to consider (such as, for example, treasure hunters, souvenir-divers, anchoring and fishing activities). In some cases a good and effective legislation could be enough to protect underwater cultural sites, while in others protective measures may be essential for facing these challenges (even requiring the sacrifice of the preservation *in situ*, for example, recovering the site). Therefore, protection and preservation *in situ* are not necessarily moved by diverging aims, but their interaction requires careful analysis.
- Protection and Access: these two interests are focused on different objects (underwater cultural goods - public) and aims (avoid damages or pillaging - offer a recreational-educative experience). These aims are not in conflict: access can generate public awareness of the importance of the underwater cultural heritage – a step that represents the best system of protection. Anyway, the accessibility of a site creates inevitably a series of risks, such as possible damages to the goods made by careless divers or looting by souvenirs divers. Therefore, the interaction between protection and access is another issue in need of further careful evaluation.

- Protection and Promotion: in some particular cases, when sites are extremely fragile or in presence of movable small artifacts, it may be necessary to keep confidential information on the location and to restrict it to the competent authorities. However, in general, promotion does not clash with protection because it focuses on the creation of public appreciation and understanding of the underwater cultural heritage. The promotion of this issue, as already stated, represents the best mechanism of protection.
- Protection and Socio-Economic Impact: it is possible to apply the same considerations expressed for the interaction between conservation and socio-economic impact. Protection represents an economic cost for society and, from this perspective, it seems to generate a clash of interest. However, an object is protected when it has historical, archaeological or cultural significance, or in other words when it represents an asset for a society (in terms of knowledge, identification, and enjoyment). The public benefit is particularly evident when the site is promoted and made accessible. Therefore, the interaction between these two interests should be evaluated from a wider perspective that considers also access and promotion.
- Preservation *in situ* and Access: most of the times, the preservation *in situ* of an underwater site strongly limits the possibility for the common public to have a direct access. However divers and (sometimes) snorkelers have the opportunity to visit and enjoy such incredible time capsules. Therefore, these two interests are not totally incompatible, but their interaction requires careful evaluation (in particular concerning the quality of the experience *in situ* and the development of opportunities for non-divers).
- Preservation *in situ* and Promotion: promotion represents a key issue for strengthening the preservation *in situ*. Explaining why a site is better preserved *in situ*, why it is important and its appealing features are all aspects that can generate public awareness, fostering respect and appreciation for the underwater cultural heritage. Only in few circumstances the promotion of a site should be kept (temporarily) confidential or some information should be made unavailable (without

reference, for instance, to the position or the depth of a site) in order to keep the preservation *in situ*.

- Preservation *in situ* and Socio-Economic Impact: the preservation in the context can represent an ideal solution from an economic perspective, considering the high costs of recovery and conservation of underwater cultural goods. On the other side, often also the preservation *in situ* has its costs, such as the adoption of specific measures for the conservation and protection. Moreover, a detailed evaluation is necessary for understanding if *in situ* preservation can reach the same positive socio-economic impact of a site whose goods are recovered and exhibited on land.
- Access and Promotion: access and promotion are compatible interests. Together they represent the basis for the promotion of awareness and understanding of the underwater cultural heritage.
- Access and Socio-Economic Impact: access represents one of the two main elements for the development of the socio-economic impact (promotion being the other). Granting accessibility to a site attracts heritage tourists and spreads the knowledge of the underwater cultural heritage. Reversing the perspective, decision makers can choose to open an underwater site because of the expected positive socio-economic impact.
- Promotion and Socio-Economic Impact: promotion represents the other main element for the development of a positive socio-economic impact. Promotion raises the interest of the public and develops the heritage tourism. Often underwater sites or artifacts that achieve higher socio-economic impact are those better promoted.

Therefore, the interests that must be considered for the management of the underwater cultural heritage are not strictly incompatible. Anyway, in some cases, their interaction can generate potential clashes that must be further evaluated.

First of all, it is possible to observe a potential conflict between three interests (conservation, protection and preservation *in situ*) and access. It may seem that the maximization of conservation, protection and

preservation *in situ* require the sacrifice of the access, probably generating, as a consequence, negative outcomes in terms of promotion and socio-economic impact.

However, this “trade-off” is partially misleading because access to the underwater cultural heritage fosters the awareness of its importance and appeal. Besides, educational programs can disseminate the respect for underwater cultural heritage, and public investments for the conservation and protection of these artifacts can be justified (and maybe incremented) in the name of public interest. Therefore, providing a sustainable access it is possible to increase the conservation, protection and preservation *in situ* (concurrently to the promotion and the socio-economic impact): “Access, in other words, is not only an important aim in itself, it also contributes to awareness and to joint support for protective approaches”⁹².

Second, overall preservation *in situ* and protection are interests moved by independent aims. However, different international cases show how, due to the development and diffusion in the market of advanced underwater exploration technologies, the risk of looting, damages and destruction to the underwater cultural heritage preserved *in situ* has extremely grown in the last thirty years⁹³. Therefore, at extreme level, certain sites may be removed from their underwater context for protective reasons.

Nonetheless, nowadays most of the factors of risk can be successfully faced *in situ* through: the implementation, both at national and international level, of effective juridical measures on the protection of the underwater cultural heritage, the development of special agreements with fishermen and other commercial companies involved in underwater activities, and the adoption of protective tools like, for example, metal nets and underwater cameras. For this reason the compatibility between protection and preservation *in situ* has been finally assessed as “neutral”.

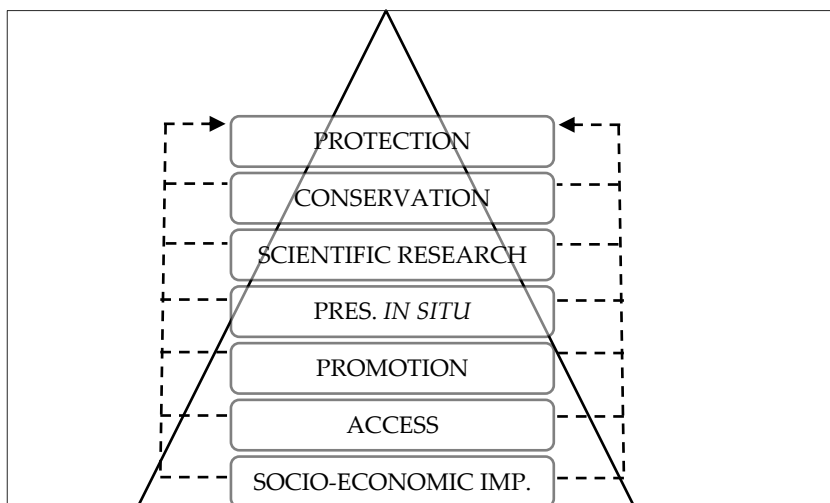
⁹² UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 7.

⁹³ See, for example, Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, 2006 and Throckmorton P., “The World’s Worst Investment: The Economics of Treasure Hunting with Real-Life Comparisons”, in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998.

Finally, from a theoretical perspective, it is interesting to notice how the increase in the promotion of a site seems to generate positive results for all the other interests (with the sole exception of those special cases that, due to the extremely fragility of the site or a high risk of looting, requires a more “cautious approach”). As a result, in a theoretical plan of management the promotion should be granted a relevant position because of its positive spread effects, but inexplicably this is often an underestimated factor.

4.2 Planning the underwater cultural heritage management: a hierarchical pyramid of interests with a bottom up impact

A plan of management, in order to be effectively implemented, requires the prioritization of the different interests involved. Taking into consideration the principles adopted in the 2001 UNESCO Convention as well as the emerging international trends, it is possible to define the following hierarchical pyramid of interests⁹⁴.



4. Hierarchical pyramid of interests with a bottom up impact

At the top of this hierarchical pyramid there are the protection, conservation and scientific research. According to article 2 paragraph 1 of the 2001 UNESCO Convention: “*This Convention aims to ensure and*

⁹⁴ Notice that the defined hierarchy of interests is an extrapolation of the author. This hierarchy may not correspond to the perspectives and ideas of the UNESCO.

strengthen the protection of underwater cultural heritage”.⁹⁵ This passage immediately emphasizes the basic purpose of the Convention. This aspect is remarked in several parts of the 2001 UNESCO Convention, from the preamble (“Realising the importance of protecting and preserving such underwater cultural heritage”⁹⁶) to other several articles and Rules⁹⁷. The preamble of the Convention highlights the link between protection and scientific research: “Convinced of the importance of research, information and education to the protection and preservation of underwater cultural heritage”⁹⁸, but Rule 4 of the Annex considers their possible divergence and tries to accommodate it: “Activities directed at underwater cultural heritage must use non-destructive techniques and survey methods in preference to recovery of objects. If excavation or recovery is necessary for the purpose of scientific studies or for the ultimate protection of the underwater cultural heritage, the methods and techniques used must be as non-destructive as possible and contribute to the preservation of the remains”⁹⁹.

In the pyramid, after protection, conservation and scientific research there is the preservation *in situ* that, according to the 2001 UNESCO Convention, should be considered as the first option in the management of the underwater cultural heritage. This point is strongly stated in art. 2, par. 5 “The preservation *in situ* of underwater cultural heritage shall be considered as the first option before allowing or engaging in any activities directed at this heritage”¹⁰⁰ and in Rule 1 of the Annex “The protection of underwater cultural heritage through *in situ* preservation shall be considered as the first option”¹⁰¹. However, as emphasized in the UNESCO Underwater Cultural Heritage Manual: “‘first option’ is not the same as ‘only option’, or ‘preferred option’”¹⁰².

The preservation *in situ* is then followed in the pyramid by the promotion of and the access to the underwater cultural heritage for

⁹⁵ UNESCO, Convention on the Protection of the Underwater Cultural Heritage, 2001, *op. cit.*, art. 2, par. 1.

⁹⁶ UNESCO (2001), *last op. cit.*, preamble.

⁹⁷ See, for example, UNESCO (2001), *last op. cit.*, art. 2, par. 3, 4 and 6, or art. 18, par. 2.

⁹⁸ UNESCO (2001), *last op. cit.*, preamble.

⁹⁹ UNESCO, Annex to the Convention on the Protection of the Underwater Cultural Heritage, 2001, *op. cit.*, Rule 4.

¹⁰⁰ UNESCO, Convention on the Protection of the Underwater Cultural Heritage, 2001, *op. cit.*, art. 2, par. 5.

¹⁰¹ UNESCO, Annex to the Convention on the Protection of the Underwater Cultural Heritage, 2001, *op. cit.*, Rule 1.

¹⁰² UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 1.

educational and recreational benefits (“*Convinced that the public’s right to enjoy educational and recreational benefits of responsible non-intrusive access to in situ underwater cultural heritage...*”¹⁰³), but also aimed to generate public awareness as disposed by art. 20: “*Each State Party shall take all practicable measures to raise public awareness regarding the value and significance of underwater cultural heritage and the importance of protecting it under this Convention*”¹⁰⁴. Furthermore, according to Rule 7 of the Annex “*Public access to in situ underwater cultural heritage shall be promoted, except where such access is incompatible with protection and management*”¹⁰⁵.

The final step is the necessity to consider the socio-economic impact related to the management of the underwater cultural heritage: despite its position at the base of the pyramid, this is the main element that justifies public investment toward the underwater cultural heritage.

In this way a hierarchy has been established among the different interests involved in the management of the underwater cultural heritage. However, as already noted, most of these interests are strictly linked each one to the other. This means that the underestimation of one interest could generate negatives impacts on all the others while, conversely, a proper evaluation and management of each interest could provide positive outcomes for the others as well.

Therefore, the hierarchical pyramid of interests defined above is based on a bottom up impact: good management of underwater cultural heritage cannot focus solely on the satisfaction of the requirements of the top of the pyramid (protection, conservation and scientific research) without considering the interests at its base (preservation *in situ*, promotion, access and socio-economic impact) otherwise the pyramid can easily collapse. The maximum of stability and efficiency is reached when a proper equilibrium among all the different interests is created, balancing the necessity of conservation, protection and preservation *in situ* with the scientific, educational and leisure wills.

¹⁰³ UNESCO, Convention on the Protection of the Underwater Cultural Heritage, 2001, *op. cit.*, preamble.

¹⁰⁴ UNESCO (2001), *last op. cit.*, art. 20.

¹⁰⁵ UNESCO, Annex to the Convention on the Protection of the Underwater Cultural Heritage, 2001, *op. cit.*, Rule 7.

5. Stakeholder identification and analysis: the problem to fulfill different expectations

The aim of this paragraph is to identify the main groups that can directly or indirectly affect or be affected by the management of the underwater cultural heritage. In order to successfully fulfill this aim I adopted a “marketing approach” which “links the line of business to customer benefits, and seeks to define what benefits the customer is seeking”¹⁰⁶.

The identification and classification of these groups of interest inevitably implies the risk of an over simplification of the real circumstances. In the analysis of each group, in order to partially mitigate such risk, eventual internal diverging views will be pointed out.

Assessing the impact of each stakeholder is an additional challenge. Clearly the identified groups of interests operate at different levels and with different aims. Some of them are directly involved in the decision-making process or have a direct interest toward the underwater cultural heritage. Others, on the contrary, operate as external actors, but they have a significant influence on the underwater cultural heritage management. In this dynamic scenario the effective impact of each stakeholder is hardly valuable. Therefore, in the absence of a reliable interpretative system, the following reflections should be viewed as an unpretentious attempt to schematically sum up the main positions emerging from the general context.

The main stakeholders, related to the management of the underwater cultural heritage, are the following¹⁰⁷:

1) General (non-diving) public: the general public is interested to access and gain information about the underwater cultural heritage, considering its importance, appealing and recreational/educational function. The members of this group are (predominantly) non-divers, therefore a preservation *in situ* policy could strongly reduce their accessibility, unless the site is managed as an underwater museum or it is organized to support snorkeling experiences, visits through bottomed glass boats or other similar solutions.

¹⁰⁶ Blockley M., “Archaeologists in the marketplace”, at Cooper M. A., Firth A., Carman J. and Wheatley D. eds. (1995), *op. cit.*, p. 101.

¹⁰⁷ Some of these groups of interest have been already identified in Green J., *Maritime Archaeology: A Technical Handbook*, Elsevier Inc., San Diego, 2004, pp. 375 – 380.

Satisfying the general non-diving public is a primary goal because this group can contribute to the protection of this heritage (well educated non-divers today may become conscious divers tomorrow) and to the economic sustainability of a site (the non-divers are the largest group of people among the stakeholders).

2) Sport diving public: like the general non-diving public, the sport diving public is a group interested in the recreational and the educational functions of the underwater cultural heritage. However, for the sport diving public the preservation *in situ* is not a barrier, but, on the contrary, an opportunity. The aesthetic and historical values are probably the most appealing aspects for this group. Therefore, the primary interests of this group are accessibility and knowledge.

Meeting the will of the sport diving community is a fundamental issue, because it may transform a potential threat (in particular considering damages and lootings committed by “souvenir-divers”) in an ally. Educated and trained sport divers can support the underwater archaeologists in the localization and protection of the underwater cultural sites. Moreover, the members of this group, acting as donors or paying visitors, can financially sustain the development of underwater archaeological parks and trails.

Nevertheless, despite the number of divers in the world is growing, they still represent a small elite within the global population.

3) Local population: local population here means the communities who are geographically located in close proximity to an underwater cultural site or who are emotionally connected to it. Evaluating their viewpoint is a complicated issue. First, underwater cultural sites situated far from the coast may not have a local population of reference, considering that they are not physically located in the space of a community¹⁰⁸. Second, considering that each society is composed by several groups, identifying a common perspective for the local population necessarily implies an over simplification (for example, the interests of local fishermen could be in contrast with those of local hotel and restaurant managers). Moreover, sociological, cultural and economic factors may determine opposite reactions in different populations: the local

¹⁰⁸ See Maarleveld T. J., “Drama, Place and Verifiable Link: Underwater Cultural Heritage, Present Experience and Contention”, in Turgeon L. (edited by), *Spirit of Place: Between Tangible and Intangible Heritage*, Les Presses de l’université Laval, Québec, 2009, p. 103.

population of an extended urban center with a tourism sector already developed could react differently from the local population of an isolated island where the main source of livelihood is fishing.

Therefore, within the same group are enrolled several diverging forces that act for different aims such as:

- the protection of underwater sites which have a spiritual or symbolic value;
- the development of a sustainable tourism sector;
- the safeguarding of the local style of life;
- the protection of local economic industries (fishing, port activities, etc.);
- the preservation for the locals to access and enjoy a site.

Irrespective of the different interests pursued, making aware and involve the local population in the process of management of the underwater cultural heritage is a key aspect: the shared benefits generated by the planned management should be explained to the locals and eventual protests should be opportunely considered. Positively, the local population can provide an additional support to the protection, promotion and economic sustainability of an underwater cultural site. Negatively, in a displeased local population the private (illicit) interest may prevail on the shared public interest, generating episodes of looting and damaging. Therefore *“Keeping local communities informed and encouraging them to participate throughout all the stages of planning, establishing and managing MPAs contributes substantially to the likelihood of long-term success of the initiative”*¹⁰⁹. Evaluating the potential beneficial role of the local population in the management of the underwater cultural heritage is an important aspect that requires further studies¹¹⁰.

4) Commercial diving centers: the commercial diving centers are structures that offer public access to underwater sites gaining in return economic benefits. In some circumstances a specifically trained diver guides the sport divers visiting the sites while, in other occasions,

¹⁰⁹ Badalamenti F. *et al.* referring to the establishment of Marine Protected Areas (MPAs). Analogous reasoning seems valid also for the management *in situ* of the underwater cultural heritage. See Badalamenti F. *et al.* (2000), *op. cit.*, p. 117.

¹¹⁰ On this issue see Hampton M. P., “Heritage, Local Communities and Economic Development”, *Annals of Tourism Research*, Vol. 32, No. 3, 2005.

recreational divers can independently access to the sites (sometimes filling in a registration-form). As suggested by Green: *"If sites can be protected and made available for operators to take their dive groups to visit, then they are likely to increase their business"*¹¹¹. It is in the interests of the commercial diving centers to protect and preserve *in situ* accessible underwater cultural sites. Therefore, educated and trained members of commercial diving centers may play a central role, monitoring the state of conservation of a shipwreck, acting as "inspectors" in the protection of a site or being directly involved in the financial management of an underwater archaeological park.

5) Other commercial operators (fishing enterprises, energetic industries and cable laying operators): in this group are included all those operators and companies whose activities could indirectly affect (or sometimes be affected by) the management of the underwater cultural heritage.

As highlighted by Evans, Firth and Staniforth the challenge is to *"balance the protection of the underwater cultural heritage without denying or unfairly restricting the economic development of the coastal zone"*¹¹². This group may represent a potential (involuntarily) threat toward the conservation, protection and preservation *in situ* of the underwater cultural heritage. However, solutions of compromise may be achieved, balancing the protection and enhancement of the underwater cultural heritage and the financial interests that move the members of this group. In return for their cooperative efforts commercial operators could improve their "public image" supporting archaeological investigations and researches. *"It is fair to suggest that the marine renewables industry is, overall, among the most proactive and responsible of any sector with respect to archaeology... [However] more needs to be done to ensure greater consistency in the inclusion of archaeological resources within the policies and procedures related to offshore energy extraction on the one hand, and, in particular, offshore fishing and mining on the other"*¹¹³.

6) Non-Profit Organizations: this group is mainly composed of amateur associations (operating at local, national or international level) that have an overall interest toward the underwater cultural heritage. The members of this group can play a central role providing economic

¹¹¹ Green J. (2004), *op. cit.*, p. 378.

¹¹² Evans A. M., Firth A. and Staniforth M. (2009), *op. cit.*, p. 43.

¹¹³ Evans A. M., Firth A. and Staniforth M. (2009), *last op. cit.*, p. 51.

resources, technical tools and volunteers for the management of the underwater cultural heritage both *in situ* and “on-land”. Non-Profit Organizations could also be directly involved in the promotion of the underwater cultural heritage, for instance, creating official web-sites, developing forums of discussion and organizing public conferences¹¹⁴.

7) National Government: presumably, national governments are interested in the preservation and enhancement of their underwater cultural heritage, directly acting for the benefits of their citizens¹¹⁵. From the management of this heritage the national governments can realize social and economic benefits like, for instance, improving the quality of life, spreading the cultural knowledge and developing the tourism sector. However, the costs to manage this heritage are high, while the public resources available for this aim are usually limited. Therefore, in the last years, the national governments have considered the economic sustainability of underwater cultural heritage management as a primary goal. Consequently, two different cost-benefit approaches have been mainly investigated: the reduction of expenses, exploring more affordable methods of management; the identification of new fonts of resources (for example, signing cooperative agreements or involving private actors). In any case, worldwide, national governments are still the primary source of funds for the scientific research and the managerial activities related to the underwater cultural heritage.

8) UNESCO (United Nations Educational, Scientific, and Cultural Organizations): the main aims of UNESCO concerning the underwater cultural heritage are: first, to provide an international legal framework for the protection of the underwater cultural heritage; second, to diffuse and explain the principles of the 2001 UNESCO Convention; third, to strengthen the public awareness and understanding of this heritage through the development of a global communication process. The specific tasks undertaken by the UNESCO staff and, in particular, its general-director will be explained more in details in chapter 2, paragraph 3.

¹¹⁴ On this topic see Allotta G., “Le attività delle associazioni non governative”, in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002.

¹¹⁵ Some governments have actually signed commercial agreements with private salvage companies for the salvage of some historic shipwrecks. Considering the effects on the long period it is unclear how these agreements might provide benefits for its citizen .

9) Underwater archaeologists: underwater archaeologists aim to investigate the underwater cultural sites in order to extract (and interpret) data about past human behaviors. Publishing the results of their researches and analysis they spread the knowledge on the underwater cultural heritage both at academic and public level. Moreover, as maximum experts of the sector, they are primarily involved in the decision-making process related to the management (protection and enhancement) of these sites.

10) Museums: directors of museums “on-land” may be interested in the research, conservation and display of underwater cultural goods (shipwrecks, artifacts, assemblages, etc.). However, in view of the limited storage areas available and the high costs of management, the recovery of those goods, that are already widely available for public and scientific consumption, could be considered unneeded or undesirable. Moreover, as clearly stated by the ICOM Code of Ethics: *“members of the museum profession should not support the illicit traffic or market in natural or cultural property, directly or indirectly”*¹¹⁶.

11) Universities and research institutions: universities and research institutions are focused on the analysis of underwater artifacts and structures having historical, archaeological, research, spiritual, artistic and symbolic value. The studies conducted by these institutes can spread the knowledge, both at academic and public level, on the underwater cultural heritage. Moreover, some of these centers are directly engaged in the sectorial formation process through the organization of educational programs in underwater and maritime archaeology. Finally, research centers of chemistry and restoration may be directly involved in the conservation and protection of waterlogged goods and corroded artifacts.

12) Agencies in charge to protect the underwater environment: this group enrolls those institutions which aim is to protect the maritime ecosystem. Their interest is focused on the interaction between the underwater cultural heritage and its surrounding natural environment. Particular attention is usually paid in two circumstances. First, on shipwrecks and structures that, acting as artificial reefs, have been colonized by different biological organisms. In these cases these agencies may appreciate a preservation *in situ* approach aimed to jointly protect the underwater cultural resources and the marine

¹¹⁶ ICOM, *Code of Ethics for Museums*, 2013, art. 8.5.

ecosystem. Second, on wrecks that, transporting contaminating materials (fuel, explosive or other dangerous substances), represent a risk for the surrounding natural environment. In some cases, intrusive operations to secure these sites could be deemed necessary regardless the archaeological and cultural value of these wrecks¹¹⁷.

13) Commercial salvage companies¹¹⁸: the historical commercial salvage companies are private companies substantially interested in shipwrecks that transported objects of high economic value (gold and silver coins, ceramic potteries, jewelries, etc.). In general these companies attract considerable amount of money from private investors promising them financial returns from the discovery of “treasure-ships” and the selling of their artifacts. As private societies, their policy is to minimize the costs and to maximize the profit, salvaging objects with high commercial value in a short time, often following “doubtful” archaeological practices. In recent years, some of these companies have assumed archaeologists, adopted active approaches toward the media and signed specific codes of ethics in order to counter the remonstrations moved to them by the international archaeological community. Maybe the managers of these companies are really inspired by a sincere appreciation of the maritime history, but their ethical and practical approach is still in contrast with the standards required by the archaeological community. One of the main clash-point is, for example, the possibility to sell the recovered artifacts recovered in the antiquities markets or through auction houses. This prospect is considered ethically acceptable by the commercial salvage companies (and sustained by the use of the Salvage Law and the Law Finds) while it is firmly condemned by archaeologists and the 2001 UNESCO Convention. Therefore, the role that these companies should play in the management of the underwater cultural heritage (if any) is still under debate¹¹⁹.

Table 5 summarizes the stakeholders’ interests toward the underwater cultural heritage, what may constrain the realization of their expectations and which interests may be (positively or negatively) affected by the activities of these groups.

¹¹⁷ On this topic see Forrest C., “Culturally and Environmentally Sensitive Sunken Warship”, *Australian & New Zealand Maritime Law Journal*, vol. 26, N°1, 2012.

¹¹⁸ The main aspects (juridical, ethical and practical) of the clash between commercial salvage companies and archaeologists will be deeper analyzed in the next chapter.

¹¹⁹ On the clash between archaeologists and salvage companies see chapter 2, par. 6.

Stakeholders	Main interests of reference	Potential barriers	Interests positively affected by satisfied stakeholders	Interests negatively affected by unsatisfied stakeholders
Gen. N-Div. Pub.	Access and awareness	Inaccessible sites preserved <i>in situ</i>	Resources, protection, promotion	Resources and protection
Spo. Div. Pub.	Access <i>in situ</i> and awareness	Recovery, reburial or access restriction	Resources, protection, promotion	Protection
Loc. Pop.	All interests related to the UCH	Lack of management, access restrictions, relocation	Resources, protection, promotion	Projects' sustainability and protection
Com. Div. Cen.	Access, pres. <i>in situ</i> and econ. impact	Recovery, reburial or access restriction	Access, protection, promotion	Protection
Oth. Com. Op.	Development of their businesses	Legal measures protecting the UCH	Resources, protection, promotion	Protection
NPO	Promotion and access	-	Resources and promotion	-
Nat. Gov.	All interests related to the UCH	Resources and decision makers' awareness	All interests related to the UCH	Protection and resources
UNESCO	All interests related to the UCH	-	Protection and promotion	-
Und. Arc.	Scientific research	Resources and technologies available	Scientific research and promotion	-
Mus.	Conservation and exhibition of artifacts	Preservation <i>in situ</i> and costs of management	All interests related to the UCH	-
Uni. & Res. Ins.	Scientific research, conservation, promotion	Resources and technologies available	Scient. Res., conservation, promotion, social impact	-
Age. Pro. U. E.	Protection of underwater environment	Methods not environmentally sustainable	Protection and promotion	-
Com. Sal. Com.	Make profit selling underwater cultural goods	International legislation (2001 UNESCO Convention)	Display, public promotion, resources	Protection, scient. res., promotion, pres. <i>in situ</i>

5. Table of stakeholder and interests

It is clear, observing this table, that there are two mayor problems to consider.

First of all, the stakeholders' interests are several times incompatibles. The recreational divers' desire to access the underwater cultural site *in situ*, for example, may clash with the non-diving public accessibility. Accordingly, the method chosen for the management of an underwater cultural site will hardly satisfy the entire group of stakeholders. However, an unsatisfied stakeholder may produce negative effects on the management of the underwater cultural heritage. Consequently a key aspect is to provide, whether possible, solutions of compromise (concerning the above example, the non-diving public accessibility issue could be faced providing a glass bottomed boat system to access an underwater site), and to diversify the method of management adopted, satisfying in this way the diverse needs of the different stakeholders. Moreover, in any circumstance, decision makers should argue the decisions taken and clearly explain their beneficial effects. Adopting an approach of transparency and accountability is the best way to reduce, as far as possible, the contrast with dissatisfied parties.

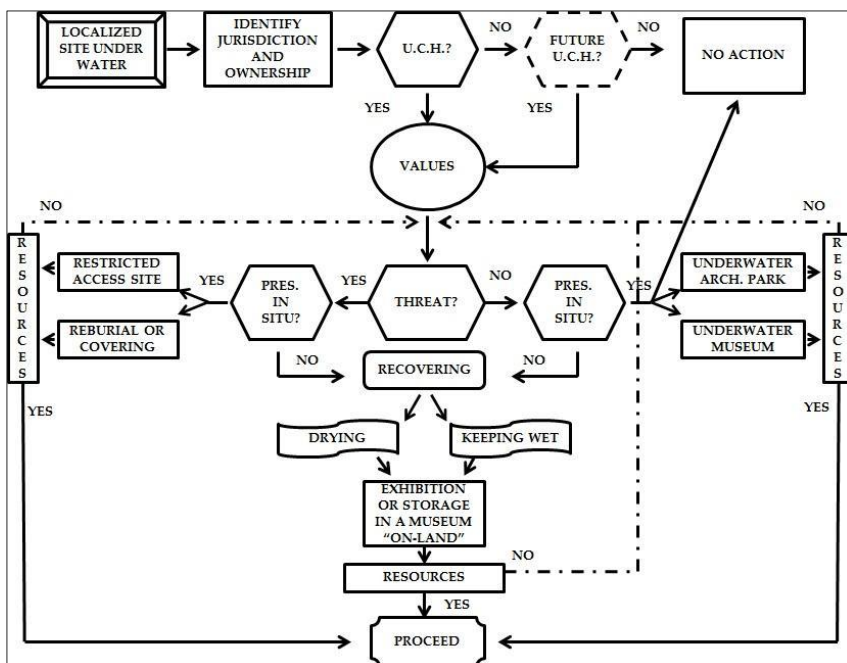
Second, the mass communication activity sustained by commercial salvage companies is a tricky process that implies both positive and negative aspects. The salvage company "Odyssey Marine Exploration", for example, has produced a TV-series, transmitted by Discovery Channel, in which it shows and explains to the public its main activities: form the discovery of ancient shipwrecks to the salvage of their artifacts. Positively, these documentaries attract the attention of mass audience and spread the knowledge about the history of some underwater cultural sites; negatively, they may also diffuse a wrong message, promoting an idea of "treasure" and "exploitation" that is incompatible with the concept of "heritage" and "protection" sustained by underwater archaeologists.

6. A comprehensive theoretical model aimed to guide decision makers in the management of the underwater cultural heritage

Managing the underwater cultural heritage is a challenging task. For this reason it is essential to provide a theoretical framework that may explain which are the basic elements of this complex system and how they are structurally organized as a whole.

Values, threats and interests are the key components of the underwater cultural heritage framework. It is through their assessment and organization that it is possible to define an efficient, effective and sustainable management plan for the underwater cultural heritage.

This paragraph provides a theoretical model that shows how to identify the best method of management for a certain underwater cultural site. As stated by Manders “a model in general is a way to represent and simplify the reality, thus creating a manageable platform for processing and viewing the real world factors that were included in the model”¹²⁰. Therefore, as an interpretative schematization and simplification of reality, this model suggests an ideal, but flexible sequence of steps. This logic scheme can be eventually re-organized according to the objects to be pursued and the effective status of the examined site.



6. A theoretical model for the underwater cultural heritage management¹²¹

¹²⁰ Manders M. (editors, 2011a), *op. cit.*, p. 23.

¹²¹ The diagram has been drawn considering a previous model developed by the author and presented during the Conference IKUWA 4, Zadar, Sept. 29 – Oct. 2 2011, the figure

This model is structured taking into consideration the main theoretical interactions among interests as well as the identified hierarchical pyramid of interests.

As soon as a site is localized and possibly identified, the first aspect that may be determined is its legal status¹²². This process implies the analysis of two main aspects: jurisdiction and ownership.

Identifying which state (if any) has jurisdiction on a certain underwater cultural site is an essential aspect to figure out which set of laws (national and international) will be applied to such site. Therefore the management of the site will be planned considering the rights and the duties defined by the applicable laws. At international level the legal tool of reference for the maritime jurisdiction issues is the 1982 United Nations Convention on the Law of the Sea (UNCLOS), which defines the limits of the coastal states' jurisdiction and the rights of the flag states¹²³. Moreover, some states have ratified the 2001 UNESCO Convention which, without modifying the jurisdictional limits defined by the UNCLOS, provides a system of international cooperation for the protection of underwater cultural sites located in international waters.

On the contrary, identifying the ownership means to establish who is the juridical person that can exercise the exclusive power of property right on a certain object. In the underwater cultural heritage sphere, this is a complex issue due to several reasons. First, it is not an issue directly treated by the two main international conventions related to the underwater cultural heritage (1982 United Nations Convention on the Law of the Sea and the 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage). Second, it implies a complex evaluation of national and international public and private laws (states can be the owners of a sunken vessel, but also private companies or individuals). Third, some legal aspects connected to the ownership

"The process of Underwater Cultural Heritage Management" provided in Manders M. (editors), *Guidelines for Protection of Submerged Wooden Cultural Heritage, including cost-benefit analysis*, WreckProtect, 2011(b), p. 7 and the considerations exposed in Hannahs T., "Underwater Parks Versus Preserves: Data or Access", in Spirek J. D. and Scott-Ireton D. A. (Edited by), *Submerged Cultural Resource Management: Preserving and Interpreting Our Sunken Maritime Heritage*, Kluwer Academic/Plenum Publishers, 2003.

¹²² Let's consider that the first archaeological surveys on a just discovered underwater cultural site are always conducted adopting non-intrusive techniques of investigation. Thus, in this phase, archaeologists could not be in possession of enough data to provide an undisputable identification of the site.

¹²³ See chapter 2, par. 1.

issue are still under debate in the international community (like, for instance, the extension of the state vessels sovereign immunity to ancient shipwrecks, or the request of an implicit or explicit act to considered a sunken vessel abandoned). Finally, identifying the owner of an ancient sunken vessel could require a deeper archaeological investigation of the site and of the historical archives: this slow process, that may require several years of research, should not prevent the adoption of consistent measures to protect (at least) the underwater cultural heritage in imminent danger.

The next chapter will provide an articulated analysis of the international conventions and laws protecting or dealing with the underwater cultural heritage: the identification of jurisdiction and ownership will be carefully investigated as well as the potential consequences of their interaction. For the moment it must be clear that the legal status of a site represents a relevant aspect in the management of the underwater cultural heritage and that, as good practice, it should be defined (and its related controversies should be solved) before the implementation of any activity on the site. However, the preservation of the archaeological and historical heritage for the human kind benefits is an equally relevant task. Therefore the adoption of measures of protection and conservation should be preventively admitted (thus, before the resolution of any eventual ownership issue) at least in those emergency situations in which the survival of the site requires the adoption of immediate actions¹²⁴.

Once solved the legal issues, it should be considered if the site under analysis is or is not part of the underwater cultural heritage according to definition provided by the applicable national and international laws. State parties of the 2001 UNESCO Convention will make reference to art. 1. Accordingly a site is considered part of the underwater cultural heritage if: 1) it is an expression of human traces; 2) it has been underwater for more than 100 years; 3) it possess cultural, historical or archaeological character; 4) it does not fall in one of the exceptions provided by art. 1, par. 1, letters b and c.

¹²⁴ This issue will be taken up analyzing the mechanisms for the protection of the underwater cultural heritage in the Exclusive Economic Zone, on the continental shelf and in the area defined by the 2001 UNESCO Convention.

No action will be required for sites that are not part of the underwater cultural heritage definition¹²⁵. On the contrary, for the sites considered as part of the underwater cultural heritage an initial assessment of their values will be required. Moving from the intrinsic values associated to a site, the decision makers should also start to consider which could be the stakeholders interested in the site and which benefits may be generated through its management.

The following step will be to consider the protection and conservation of the site (the top of the hierarchical pyramid of interests) evaluating the human and environmental threats. Therefore the possibility to preserve the site *in situ* will be analyzed as first option, but considering two elements: the risks that could threaten the site and the possibility to develop scientific researches (preferably adopting non-destructive techniques and survey methods).

If a site is threatened but, according to conservators and underwater archaeologists, it can be preserved *in situ*, then two different methods of management may be implemented: the imposition of a restricted access area around the site, which is mainly adopted when the risk is generated by human activities (pillaging, destruction, etc.)¹²⁶; or the reburial or covering of the site (with or without a previous archaeological excavation), primarily adopted to face environmental threats, but also some potential human threats like, for example, anchoring or souvenir divers¹²⁷.

On the contrary if the level of risk is acceptable and the site can be preserved *in situ*, three other options of management should be considered: the no action option, which leaves the site “unmanaged”, but opening it to the recreational divers’ access; the creation of an

¹²⁵ Actually there are also some sites which, despite being underwater less than 100 years, possess a relevant historical or archaeological value. This could be, for example, the case of the Second World War shipwrecks. Despite this consideration, my analysis is exclusively focused on site which have been underwater more than 100 years.

¹²⁶ The parameters of the restriction may vary according to case by case needs, moving from high restrictive sites opened only to professional divers for scientific research purposes, to less restrictive sites opened also to sport divers who have obtained an authorization by the competent authorities.

¹²⁷ Comprehensive guidelines concerning techniques and materials adopted for the reburial or covering of submerged wooden cultural sites are provided by Manders M. ed. (2011b), *op. cit.*, pp. 25-35, and by Davidde B., “Methods and Strategies for the Conservation and Museum Display *in situ* of Underwater Cultural Heritage”, *Archaeologia Maritima Mediterranea*, Vol. 1, Pisa-Roma, 2005.

underwater archaeological park, in which an underwater accessible site (sometimes freely accessible, other time reachable with the necessary presence of specific qualified divers) is promoted and monitored; or the development of an underwater museum, a structure which permits even to the non-diving public the enjoyment *in situ* of this heritage.

Finally, if the preservation *in situ* is not considered an option available (for reasons of protection, enhancement or scientific investigation), the artifacts can be recovered and, after the proper conservative treatments, they can be stored or exhibited in an “on-land” museum.

So, this model identifies six main methods of management:

- Exhibition (or storage) in a museum “on-land”;
- Reburial or covering site;
- Restricted access site;
- Underwater archaeological park;
- Underwater museum;
- Unmanaged free access sites.

Chapter 3 will provide a deeper analysis of these different approaches, considering the reasoning behind their adoption and comparing the benefits that they may generate, but also the challenges in which they may incur.

Evaluating a site according to the steps defined in the model it will be possible, on one hand, to understand toward which method of management the attention should be primarily focused¹²⁸; and, on the other, to reasonably harmonize the decision-making process.

To conclude, three additional aspects must be mentioned.

First, in some cases the identified hypothetical best method of management could be an option unavailable in practice: the resources required to realize it (such as, for example, costs, tools and qualified personnel) may be beyond the possibility of decision makers. In these cases the lack of resources may force the decision makers to discard the theoretical best option, implementing an alternative solution.

Second, the adoption of a certain method of management could be temporarily. The conditions of a site should be periodically monitored in order to identify eventual variations that, representing a risk for the

¹²⁸ Sometimes two or more solutions may appear equally acceptable (even if they will probably balance differently the interests at stake).

site survival, may make necessary the adoption of a different method of management¹²⁹. Moreover, in emergency circumstances, temporarily solutions could be implemented waiting that the legal issues will be solved: an example could be the imposition of a restricted access area around a fragile site.

Third, the complex structure and the features of an underwater cultural site may demand the adoption of different integrative methods of management. This event regularly occurs, for example, post-excavating ancient shipwrecks: the movable artifacts are usually recovered considering the high risk of pillaging and destruction, while the hull of the vessel is preserved *in situ* taking into account the complexity and the high costs of the conservation treatments. In Sweden, for instance, around 80% of the sunken battleship Kronan¹³⁰ has been archaeologically investigated, but only its artifacts have been recovered and exhibited at the Kalmar County Museum. On the contrary, the hull of the ship is still (for the moment) preserved underwater.

¹²⁹ Changing the method of management is a delicate process that should be evaluated adopting a reasonable, transparent and consistent approach.

¹³⁰ The battleship Kronan was built in 1668 and it sank off the eastern coast of the Baltic island of Öland in 1678, during a battle against a Danish-Dutch fleet. Seems that an explosion occurred after a sudden turn. Consequently the vessel quickly sank with 800 men of which only 50 survived. The hull of the shipwreck is nowadays preserved *in situ*, but there are plans to recover and exhibit it in a museum “on-land” in the next future. More information about the Kronan history and its exhibition are available at the web site: <http://www.kalmarlansmuseum.se/1/1.0.1.0/421/1/>.

CHAPTER 2: INTERNATIONAL LAWS AND PERSPECTIVES RELATED TO THE UNDERWATER CULTURAL HERITAGE

1. The 1982 United Nations Convention on the Law of the Sea (UNCLOS): the development of a comprehensive system regulating the maritime issues

The 1982 United Nations Convention on the Law of the Sea (UNCLOS) is the final result of an extensive process intended to settle all issues related to the law of the sea. The goals of this system are:

- to facilitate international communication;
- to promote the peaceful uses of the seas and oceans;
- to support an equitable and efficient utilization of organic and inorganic maritime resources (fishes, oil, gas, minerals, etc.);
- to encourage the conservation of the marine living species;
- to study, protect and preserve the marine environment¹³¹.

During the negotiation of this convention the legal protection of the underwater cultural heritage assumed a marginal role. Finally, only two articles were dedicated to this topic (art. 149 and 303)¹³².

The UNCLOS, which entered in force on November 1994, has achieved an almost universal adherence: 162 states have ratified/accessed this convention¹³³. The core of this convention is the division of the water spaces in zones (territorial sea, contiguous zone, exclusive economic zone, continental shelf and area) characterized by different rights and duties for the relative coastal states and flag states.

According to art. 2, par. 1 *"the sovereignty of a coastal State extends, beyond its land territory and internal waters and, in the case of an archipelagic State, its archipelagic waters, to an adjacent belt of the sea, described as territorial sea"*¹³⁴. Consistent with art. 3, every state has the right to establish the extent of its territorial sea within a limit of 12 nautical miles measured from the baselines. Article 5 states that *"except where otherwise provided*

¹³¹ See United Nations, United Nations Convention on the Law of the Sea (UNCLOS), Montego Bay, 1982, preamble.

¹³² Actually the UNCLOS does not make reference to the underwater cultural heritage, but to 'Archaeological and historical objects found at sea'.

¹³³ Data related to 20 September 2011. Source: unofficial table prepared by the Division for Ocean Affairs and the Law of the Sea, Office of the Legal Affairs.

¹³⁴ UNCLOS (1982), *op. cit.*, art. 2, par. 1.

*in this Convention, the normal baseline... is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State*¹³⁵. Whether two states have opposite or adjacent coasts, neither of them can “*extend its territorial sea beyond the median line every point of which is equidistant from the nearest points on the baselines from which the breadth of the territorial seas of each of the two States is measured*”, unless they have signed an agreement on this issue or where a different delimitation of the territorial seas of the two states “*is necessary by reason of historical title or other special circumstances*”¹³⁶.

Despite the sovereignty of the coastal state the ships of all states have the right of innocent passage through its territorial sea (art. 17). Article 18 specifies the meaning of ‘*passage*’ in two ways: the navigation aimed to traverse the territorial sea without “*entering internal waters or calling at a roadstead or port facilities outside internal waters*”; or the navigation “*proceeding to or from internal waters or a call at such roadstead or port facility*”¹³⁷. The same article, at paragraph 2, defines the conditions of the ships’ passage through territorial seas: “*passage shall be continuous and expeditious. However, passage includes stopping and anchoring, but only in so far as the same are incidental to ordinary navigation or are rendered necessary by force majeure or distress or for the purpose of rendering assistance to persons, ships or aircraft in danger or distress*”¹³⁸. According to art. 19 a passage is innocent when “*it is not prejudicial to the peace, good order or security of the coastal State*”¹³⁹. The passage shall occur in conformity with the UNCLOS Convention and with other rules of international law. In addition, art. 19 at par. 2 provides a list of actions contrary to the innocent passage. Among them there are: “*the loading or unloading of any commodity, currency or person contrary to the customs, fiscal, immigration or sanitary laws and regulations of the coastal State; ...the carrying out of research or survey activities; ...any other activity not having a direct bearing on passage*”¹⁴⁰.

¹³⁵ UNCLOS (1982), *last op. cit.*, art. 5.

¹³⁶ UNCLOS (1982), *last op. cit.*, art. 15.

¹³⁷ UNCLOS (1982), *last op. cit.*, art. 18, par. 1. According to art. 8 of the UNCLOS, art. 8, the internal waters of a state are the “*waters on the landward side of the baseline of the territorial sea*”. (Part IV of the UNCLOS establish some exceptions for archipelagic states). See UNCLOS (1982), *last op. cit.*, art. 8

¹³⁸ UNCLOS (1982), *last op. cit.*, art. 18, par. 2.

¹³⁹ UNCLOS (1982), *last op. cit.*, art. 19, par. 1.

¹⁴⁰ UNCLOS (1982), *last op. cit.*, art. 19, par. 2.

Article 21 proposes a list of issues on which the coastal state has the right to adopt laws and regulations acting in conformity with the provisions of the UNCLOS and of other rules of international law. Inside this list there are topics such as, for example, the conservation of the living resources of the sea, the regulation of marine scientific research and hydrographic survey, and the prevention of infringement of the customs, fiscal, immigration or sanitary laws and regulations of the coastal state. Moreover, according to art. 25, *“the coastal State may take the necessary steps in its territorial sea to prevent passage which is not innocent”*¹⁴¹.

Beyond the territorial waters, there is the contiguous zone. This zone covers a maximum extension of 24 nautical miles from the baselines from which the breadth of the territorial sea is measured. Article 33 states that in the contiguous zone the *“coastal state may exercise the control necessary to: (a) prevent infringement of its customs, fiscal, immigration, or sanitary laws and regulations within its territory or territorial sea; (b) punish infringement of the above laws and regulations committed within its territory or territorial sea”*¹⁴². However, as correctly highlighted by Carducci, *“a state has to proclaim a contiguous zone before being able to exercise rights pertaining to that zone”*¹⁴³.

Beyond the contiguous zone there are the Exclusive Economic Zone (EEZ) and the Continental Shelf.

The EEZ concept has been firstly introduced in the 80's by Latin American states and then it has been approved within the UNCLOS Convention¹⁴⁴. The EEZ is an area of sea extended till 200 nautical miles from the baselines from which the breadth of the territorial sea is measured (art. 57). As the contiguous zone, the EEZ needs to be claimed by coastal States. According to art. 56, par. 1: *“in the exclusive economic zone, the coastal State has:*

(a) sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with

¹⁴¹ UNCLOS (1982), *last op. cit.*, art. 25.

¹⁴² UNCLOS (1982), *last op. cit.*, art. 33.

¹⁴³ Carducci G., “New Developments in the Law of the Sea: The UNESCO Convention on the Protection of Underwater Cultural Heritage”, *The American Journal of International Law*, Vol. 96, No. 2, 2002 a, p. 428.

¹⁴⁴ See Conforti B., *Diritto Internazionale*, Editoriale Scientifica, Napoli, 2002, p. 247.

regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds;

(b) jurisdiction as provided for in the relevant provisions of this Convention with regards to:

- i. the establishment and use of artificial islands, installations and structures;
- ii. marine scientific research;
- iii. the protection and preservation of the marine environment;

(c) other rights and duties provided for in this Convention”¹⁴⁵.

Therefore the coastal state has the exclusive right to manage and benefit of the natural resources located in the EEZ¹⁴⁶. In exercising its rights and performing its duties in the EEZ, the coastal state shall act in a way compatible with the UNCLOS provisions.

According to art. 58 in the EEZ all states enjoy the freedoms of navigation, over-flight and of the laying of submarine cables and pipelines. In exercising their rights and performing their duties in the EEZ these states have to act in accordance with the laws and regulations adopted by coastal state (in conformity with the UNCLOS provisions and other rules of international laws).

On the contrary the continental shelf concept has been introduced by U.S. president Truman in 1945 and then it has been firstly adopted in the 1958 Geneva Convention and, successively, by the UNCLOS Convention too¹⁴⁷. Article 76 defines the continental shelf of a coastal state as “the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance”¹⁴⁸. The rights and duties of the coastal state over the continental shelf are the exploration and exploitation of its natural resources, which consist “of the mineral and other non-living resources of

¹⁴⁵ UNCLOS (1982), *op. cit.*, art. 56, par. 1.

¹⁴⁶ However the UNCLOS defines also some duties that may limit the exercise of this right by the coastal states. For example, on the base of article 61, par. 2 the coastal state shall ensure that the maintenance of the living resources in the exclusive economic zone is not threaten by over-exploitation.

¹⁴⁷ See Conforti B. (2002), *op. cit.*, p. 255.

¹⁴⁸ UNCLOS (1982), *op. cit.*, art. 76, par. 1.

*the seabed and subsoil together with living organisms belonging to sedentary species, that is to say, organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil*¹⁴⁹. However in the continental shelf zone, the rights of the coastal state “do not affect the legal status of the superjacent waters or of the air space above those waters”¹⁵⁰ and “all States are entitled to lay submarine cables and pipelines on the continental shelf, in accordance with the provisions of this articles”¹⁵¹. Differently from the EEZ, coastal States do not need to claim the continental shelf because it exists *ipso facto* and *ab initio*¹⁵².

As suggested by Conforti, in the regimes that preside over the EEZ and the continental shelf “*i diritti, sia dello Stato costiero che degli altri Stati, hanno carattere funzionale, nel senso che all’uno e agli altri sono consentite soltanto quelle attività indispensabili rispettivamente allo sfruttamento delle risorse e alle comunicazioni e ai traffici marittimi ed aerei*”¹⁵³.

The partial overlapping of coastal states’ rights and duties in respect to the EEZ and the continental shelf is the result of an historical-juridical process aimed to provide more equity among these states. At first coastal states could exploit the submerged natural resources only according to the extension of their continental shelf. However, this condition generated a strong disparity among coastal states due to the different morphological conformation of their coasts. This unbalance has been partially solved through the introduction of the EEZ zone in which all coastal states have obtained the exclusive rights to administer the natural resources located within 200 nautical miles from their coast.

According to art. 86, the High Seas include “*all part of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State*”¹⁵⁴. This area is governed by the “freedom of the High Sea” principle by which all states have the right to: navigate, overflight, lay submarine cables and pipelines, construct artificial island and other installations permitted under international law (subject to Part VI), carry out fishing activities (subject to the conditions defined in section 2, conservation

¹⁴⁹ UNCLOS (1982), *last op. cit.*, art. 77.

¹⁵⁰ UNCLOS (1982), *last op. cit.*, art. 78, par. 1.

¹⁵¹ UNCLOS (1982), *last op. cit.*, art. 79, par. 1.

¹⁵² See Boesten E. (2002), *op. cit.*, p. 23.

¹⁵³ Conforti B. (2002), *op. cit.*, p. 260. See also p. 256.

¹⁵⁴ UNCLOS (1982), *op. cit.*, art. 86, par. 1.

and management of the living resources of the high seas) and perform scientific researches (subject to Part VI and XIII)¹⁵⁵. All states may exercise these freedoms paying due regard to the interests of other states in their exercise of the freedom of the high seas¹⁵⁶.

Art. 1 of the UNCLOS defines “the seabed and ocean floor thereof, beyond the limits of national jurisdiction”¹⁵⁷ as Area. According to art. 136 “the Area and its resources are the common heritage of mankind”¹⁵⁸. Art. 133 defines the term ‘resources’ as “all solid, liquid or gaseous mineral resources in situ in the Area at or beneath the seabed, including polymetallic nodules”¹⁵⁹, excluding from its scope manmade objects. This principle of common heritage of mankind was firstly formulated by the Maltese ambassador Pardo at the First Committee of the General Assembly of the United Nations in 1976. It is based on factors such as:

- the states’ prohibition to claim or exercise sovereign rights over these resources;
- the prohibition of appropriation for any state or natural or juridical person;
- the distribution of these resources according to a principle of equity (considering the interests of less developed country and conserving resources for future generations), for peaceful purposes and respecting the natural environment;
- the development of an international mechanism to control the dislocation of these resources.

Thus, art. 136 the UNCLOS codifies this principle and, in addition, it institutes the International Seabed Authority¹⁶⁰, an organism whose main task is to “provide for the equitable sharing of financial and other economics benefits derived from activities in the Area”¹⁶¹.

Concerning the legal status of ships and vessels, they have the nationality of the state whose flag they are entitled to fly¹⁶² and they are subjects (save exceptional cases provided for in international treaties or in the UNCLOS) to the exclusive national legislation of such state on

¹⁵⁵ See UNCLOS (1982), *last op. cit.*, art. 87.

¹⁵⁶ See UNCLOS (1982), *last op. cit.*, art. 87, par. 2.

¹⁵⁷ UNCLOS (1982), *last op. cit.*, art. 1.

¹⁵⁸ UNCLOS (1982), *last op. cit.*, art. 136.

¹⁵⁹ UNCLOS (1982), *last op. cit.*, art. 133.

¹⁶⁰ See UNCLOS (1982), *last op. cit.*, arts. 156 ss.

¹⁶¹ UNCLOS (1982), *last op. cit.*, art. 140, par. 2.

¹⁶² UNCLOS (1982), *last op. cit.*, art. 91.

the high seas¹⁶³. Warships¹⁶⁴ and non-commercial governmental vessels have complete immunity from the jurisdiction of any state other than their flag state. According to art. 32 *“with such exemptions as are contained in subsection A and in articles 30 and 31, nothing in this Convention affects the immunities of warship and other government ship operated for non-commercial purposes”*¹⁶⁵. Art. 95 of the UNCLOS states that *“warship on the high seas have complete immunity from the jurisdiction of any State other than the flag State”*¹⁶⁶ and art. 96 adds that *“ships owned or operated by a State and used only on government non-commercial service shall, on the high sea, have complete immunity from the jurisdiction of any State other than the flag State”*¹⁶⁷. As effect of the sovereign immunity the state vessels (warships or other non-commercial governmental vessels):

- exercise exclusive control over its crew and passengers with respect to any activity performed on board;
- may be boarded and inspected by coastal State's enforcement authorities (police, port authorities and coast guard) only with the permission of the master of the vessel;
- are immune from arrest and seizure;
- are exempt from foreign taxes;
- have to comply with the laws and regulations adopted by the coastal State in relation to measures defined by art. 21 of the UNCLOS, but in case of violations the coastal State may only order to the foreign State vessel to immediately leave its territorial sea and/or it may present official diplomatic complaints to the authorities of the related flag state.

The sovereign immunity principle is nowadays considered part of the international customary law. As remarked by Forrest *“the principle of sovereign immunity to state vessels is based on mutual respect for each sovereign state's armed forces and governmental activities and more generally*

¹⁶³ UNCLOS (1982), *last op. cit.*, art. 92.

¹⁶⁴ According to art. 29 of the UNCLOS, warship means *“a ship belonging to the armed forces of a State bearing the external marks distinguishing such ships of its nationality, under the command of an officer duly commissioned by the government of the State and whose name appears in the appropriate service list or its equivalent, and manned by a crew which is under regular armed forces discipline”*. See UNCLOS, *last op. cit.*, art. 29.

¹⁶⁵ UNCLOS (1982), *last op. cit.*, art. 32. The exceptions are mainly related to the non-compliance by a state vessel with the laws and regulations of a coastal state concerning the innocent passage through its territorial sea. See UNCLOS (1982), art. 30 and 31.

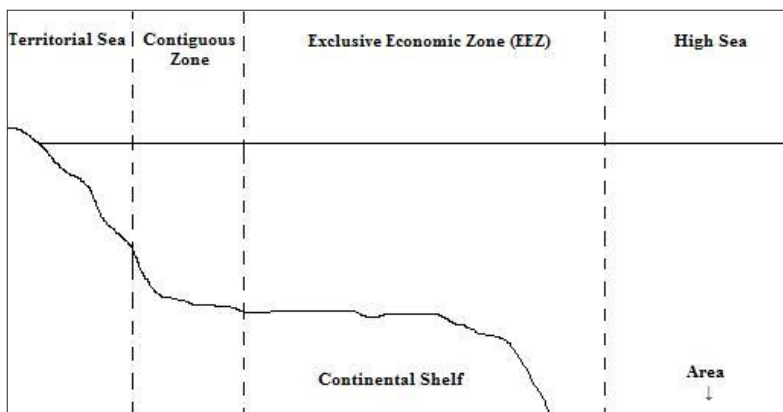
¹⁶⁶ UNCLOS (1982), *last op. cit.*, art. 95.

¹⁶⁷ UNCLOS (1982), *last op. cit.*, art. 96.

equality of states. The continuation of sovereign immunity to such vessels that have recently sunk can be justified on the basis of the state's security interests, and in some cases, with regard to the sanctity of war graves"¹⁶⁸. However, the sovereign immunity of ancient sunken state vessel is still an issue under debate¹⁶⁹.

To sum up, the extension of the maritime zones regulated by UNCLOS is the following:

- Territorial Sea: 12 nautical miles from baseline;
- Contiguous Zone: up to 12 nautical miles from the territorial sea;
- Exclusive Economic Zone: 200 nautical miles from the baseline;
- Continental Shelf: natural submarine prolongation of a coastal state land territory to the outer edge of the continental margin;
- High Sea: the sea beyond the Exclusive Economic Zone;
- Area: the seabed and ocean floor beyond the limits of national jurisdiction;



7. Schema of the different maritime zones regulated by UNCLOS

¹⁶⁸ Forrest C. J. S., "An International Perspective on Sunken State Vessels as Underwater Cultural Heritage", *Ocean Development & International Law*, Vol. 34, Issue 1, 2003 b, p. 43. However the same author also adds that "These considerations do not, however, necessarily apply to sunken state-owned vessels that fall within the definition of UCH". Interesting considerations about the war graves and the sovereign immunity of sunken state vessels are provided by Harris J. R., "The Protection of Sunken Warships as gravesites at sea", *Ocean & Coastal Law Journal*, 2001-02.

¹⁶⁹ See chapter 2, paragraph 5.

1.1 The protection of the underwater cultural heritage in the UNCLOS: too less, too generic

Moving to the legal protection of underwater cultural heritage, art. 149 of UNCLOS establishes that: *“all objects of an archaeological and historical nature found in the Area shall be preserved or disposed for the benefit of mankind as whole, particular regard being paid to the preferential rights of the State or country of origin, or the State of cultural origin, or the State of historical and archaeological origin”*¹⁷⁰.

The applicability of this article is limited to objects found in the Area (thus beyond the limits of national jurisdiction). Moreover, the UNCLOS Convention does not provide a definition of *“objects of an archaeological and historical nature”*. As stressed by O’Keefe, *“what the drafters probably meant were objects which might, through the medium of archaeological interpretation, prove to be of value to humankind”*¹⁷¹.

Interestingly, article 149 states that the objects of archaeological and historical nature shall be preserved or disposed for the benefit of mankind as whole. This statement (which must not be confused with the common heritage of mankind principle¹⁷²) aims to emphasize the universal value of these resources: their (undesirable) deterioration or destruction may represent a cultural impoverishment for all states of the world. As suggested by Frigo: *“La possibilità di una prossima evoluzione nel senso della creazione di un concreto patrimonio culturale internazionale basato su un nuovo tipo di proprietà internazionale dei beni di cui sia titolare la Comunità internazionale e la cui amministrazione sia affidata ad una competente organizzazione (e cioè l’UNESCO) che renda possibile a tutti l’effettivo godimento di tale patrimonio, è stata bensì presa in considerazione in dottrina, ma si tratta di un’ipotesi da doversi scartare”*¹⁷³. In addition, as highlighted by several authors¹⁷⁴, the verbs ‘dispose of’ and ‘preserve’ are mysteriously proposed as alternatives even if they implies different consequences: the first term leads to an indefinite action toward the archaeological and historical objects, while the

¹⁷⁰ UNCLOS (1982), *op. cit.*, art. 149.

¹⁷¹ O’Keefe (2002), *op. cit.*, p. 17.

¹⁷² Manmade objects are outside the scope of the “resources” definition provided by art. 133. Moreover there is not an institutional organization, like the International Seabed Authority, aimed to manage the archaeological and historical objects.

¹⁷³ M. FRIGO, *La protezione dei beni culturali nel diritto internazionale*, Milano, 1986, p. 303.

¹⁷⁴ See O’Keefe (2002), *op. cit.*, p. 19 and Boesten (2002), *op. cit.*, p. 52.

second term requires the involvement of experts for conserving this heritage.

The reference in art. 149 to states with “*preferential rights*” generates some problems of interpretation. First, it is unclear if these preferential rights are already existing rights or they are new rights specifically created by art. 149; second, the article does not explain how states may exercise their preferential rights; and, finally, it is unsolved which of these states should prevail in case of disputes. According to O’Keefe “*the large number of States with preferential rights could also create problems, particularly as the concept of the State is of relatively recent origin*”¹⁷⁵.

Therefore, art. 149 establishes a regime of protection for archaeological and historical objects discovered in the Area, but its vagueness hinders its practical adoption.

The other provision of the UNCLOS that deals with archaeological and historical objects found in the sea is art. 303.

At par. 1, art. 303 provides a general obligation: “*States have the duty to protect objects of archaeological and historical nature found at sea and shall cooperate for this purpose*”¹⁷⁶. However, according to Scovazzi, this provision, despite its vagueness, generates relevant legal consequences because “*A State which knowingly destroyed or allowed the destruction of elements of the underwater cultural heritage would be responsible for a breach of the obligation to protect it*”¹⁷⁷.

Art. 303, par. 2 adds that “*Coastal States may, in applying article 33, presume that their removal from the seabed in the zone referred to in that article without its approval would result in an infringement within its territory or territorial sea of the laws and regulations referred to in that article*”¹⁷⁸. Therefore, the removal of archaeological and historical objects from the contiguous zone of a coastal state is an infringement of the laws and regulations referred in art. 33. But, actually, article 33 makes references to infringements (of customs, fiscal, immigration or

¹⁷⁵ O’Keefe (2002), *last op. cit.*, p. 19.

¹⁷⁶ UNCLOS (1982), *op. cit.*, art. 303, par. 1.

¹⁷⁷ Scovazzi T., “The 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage”, in Hoffman B. T. (Edited by), *Art and Cultural Heritage: Law, Policy and Practice*, Cambridge University Press, 2006, p. 285. Interestingly, according to Scovazzi, also the obligation to cooperate generates binding legal consequences: “*It implies a duty to act in good faith in pursuing a common objective and in taking into account the situation of the other interested States*”.

¹⁷⁸ UNCLOS (1982), *last op. cit.*, art. 303, par. 2.

sanitary laws and regulations) that have no relations to the removal of archaeological and historical objects. So, as already stressed by several authors (like, for example, Carducci, O'Keefe and Rau), art. 303, par. 2 proposes a "legal fiction": *"States are not given control over the zone referred to (the contiguous zone) but may make a presumption which give them the right to take action regarding removals"*¹⁷⁹.

But, according to Carducci *"the provision grants the coastal state an "archaeological" zone of jurisdiction where it can exercise exclusive rights over UCH"*¹⁸⁰, while in the view of Rau *"it extends the scope of application of article 33 to the removal of cultural relics from the contiguous zone, without, however, attributing to the coastal state legislative jurisdiction over archaeological objects found in the 24-mile zone"*¹⁸¹.

Surprisingly, the coastal states' power of control refers only to the illicit "removal" of archaeological and historical objects in the contiguous zone, therefore excluding circumstances of damaging or destruction. As suggested by Scovazzi, the ambiguous logics of art. 303, par. 2 *"are probably attributable to the obsession of the drafters of the UNCLOS to avoid any words that might give the impression of some kind of coastal State jurisdiction beyond the territorial sea"*¹⁸².

The cooperative and protective principles established in paragraphs 1 and 2 seem limited by the provision introduced by paragraph 3, according to which: *"nothing in this article affects the rights of identifiable owners, the law of salvage and other rules of admiralty, or laws and practices with respect to cultural exchanges"*¹⁸³. Therefore, art. 303, par. 3 does not exclude the recourse to the salvage law. However, it neither clarifies its meaning or, in other words, the possibility to extend its applicability to archaeological and historical objects¹⁸⁴. Moreover, art. 303, par. 3 highlights the legitimate rights of identifiable owners. Therefore, as suggested by Boesten, *"it may be assumed that when an object needs to be protected in the view of a particular State, but still has an owner, an agreement between the two parties would solve the issue"*¹⁸⁵.

¹⁷⁹ O'Keefe (2002), *op. cit.*, p. 18. See also Rau M. (2002), *op. cit.*, p. 399.

¹⁸⁰ Carducci G. (2002 a), *op. cit.*, pp. 428-429. In the text UCH means Underwater Cultural Heritage.

¹⁸¹ Rau M., *op. cit.*, p. 399.

¹⁸² Scovazzi T. (2006), *op. cit.*, p. 286.

¹⁸³ UNCLOS (1982), *op. cit.*, art. 303, par. 3.

¹⁸⁴ Chapter 2, paragraph 2 will provide definitions and analysis of Salvage Law and Law of Finds.

¹⁸⁵ Boesten E. (2002), *op. cit.*, p. 60.

Perhaps, it is also considering the prospect of future specific agreements on this topic that art. 303, par. 4 states that *“this article is without prejudice to other international agreements and rules of international law regarding the protection of objects of an archaeological and historical nature”*¹⁸⁶. In the view of Rau this provision *“can be interpreted as expressly allowing for the elaboration of more comprehensive schemes of protection of underwater cultural heritage which may substantially depart from the basic principles and objectives of the Convention on the Law of the Sea... Yet, given that the latter was conceived as a package deal, it is widely agreed that its jurisdictional regime, which is often said to represent a delicate balance, should not be lightly disturbed”*¹⁸⁷.

Concluding, the principles adopted in the UNCLOS are too general (art. 149 and art. 303, par. 1), ambiguous (art. 303 par. 2) and outdated (art. 303, par. 3) to provide a valid system for the protection of the underwater cultural heritage. Moreover, the UNCLOS does not contain any specific disposition about the protection of archaeological and historical objects discovered in the EEZ or on the continental shelf: the rights of the coastal states to explore and exploit the natural resources in these zones do not include the management of submerged manmade objects like shipwrecks and their cargo. As stressed by Scovazzi *“this legal vacuum greatly threatens the protection of cultural heritage because it brings into the picture the abstract idea of freedom of the seas. It could easily lead to a “first come, first served” approach”*¹⁸⁸. Probably in some circumstances the coastal states’ power to establish measures for protecting and preserving the maritime environment in the EEZ may generate benefits for the underwater cultural heritage too¹⁸⁹. Nevertheless, this prerogative seems not enough to fulfill the legal vacuum produced by the UNCLOS.

The fragility of the UNCLOS system concerning the underwater cultural heritage may be explained considering that, during the drafting process, the negotiations were focused on other issues such as, for example, the extension/limits of the coastal states’ jurisdiction and powers. According to Panayotopoulos *“the question of underwater cultural heritage protection was relatively insignificant in comparison to*

¹⁸⁶ UNCLOS (1982), *last op. cit.*, art. 303, par. 4.

¹⁸⁷ Rau M. (2002), *op. cit.*, p. 425.

¹⁸⁸ Scovazzi T. (2006), *op. cit.*, p. 287.

¹⁸⁹ For example, a shipwreck, acting as an artificial reef, may be indirectly protected by measures which intend to favor the maintaining or restoring of different marine species in a certain area.

mayor concerns addressed by UNCLOS III, in particular as regard natural resources”¹⁹⁰.

In other terms, the protection of archaeological and historical objects was considered, in such moment, a secondary goal. In the words of Dromgoole, the UNCLOS “*was negotiated in the 1970s when the international community was only just becoming aware of the archaeological and cultural potential of the oceans*”¹⁹¹. Moreover, as already stressed by Boesten, “*the issue became intertwined within a broader conflict between the interests of maritime powers which promoted the freedom of the High Seas and the interests of coastal States to which the discussion shifted*”¹⁹².

It is primarily due to the vagueness, inconsistency and inefficiency of this legal regime that, years later, the UNESCO states will draft a new specific Convention on the protection of the underwater cultural heritage.

2. Salvage law and the law of finds: the application of commercial schemes on the underwater cultural heritage

Originally the salvage law system rose as an attempt to favor the voluntarily assistance of ships in impending danger (like, for example, vessels stranded, on fire, etc.) with the aim of rescuing life and return the salvaged goods to the stream of commerce. In return of their successful efforts the commercial *salvors* obtained a monetary reward. Differently, the law of finds is, in short, a regime aimed to regulate the title over those properties that have not an owner or have been abandoned¹⁹³.

¹⁹⁰ Panayotopoulos J. M., “The 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage: Main Controversies”, in Vrdoljak A. F. and Francioni F., *The Illicit Traffic of Cultural Property in the Mediterranean*, EUI Working Paper AEL, Sep. 2009, p. 31.

¹⁹¹ Dromgoole S., “Why the UK Should Reconsider the UNESCO Convention 2001”, in Yorke R. A. (edited by), *Protection of underwater cultural heritage in international waters adjacent to UK*, proceedings of the JNAPC 21st anniversary seminar, Burlington House November 2011, The Nautical Archaeology Society, Portsmouth, 2011, p. 25. Maybe it is also due to the few care reserved to the underwater cultural heritage during the UNCLOS debates that art. 303, par. 4 seems to allow the development of more specific and advanced legal regimes for the protection of objects with historical and archaeological nature.

¹⁹² Boesten E. (2002), *op. cit.*, p. 48.

¹⁹³ More details about the salvage law and the law of finds will be successively provided.

In the last fifty years the exploration of the deep-sea has become more accessible thanks to the progresses realized in the nautical technology. This circumstance has progressively favored the development of historical salvage companies: private corporations that aim to discover and conduct salvage operations on ancient valuable shipwrecks.

As suggested by Miller *“Since technology for discovering underwater ships has only become highly developed in the last twenty-five years, significant historical salvage has only recently become a topic for the courts”*¹⁹⁴. Judging these cases some Common Law courts (mainly US and UK), have applied the admiralty law principles related to the salvage law and the law of finds. This paragraph aims, on one hand, to explain the enforcement of these juridical regimes in relation to the underwater cultural heritage and, on the other, to underline the last trends emerging from the US case law.

At international level there is not a shared interpretation of “salvage”. The meaning and the extension of this notion strongly differ between common law states and civil law states. While in the firsts the concept of salvage is viewed as a unique-comprehensive notion, in the seconds it is based on distinct factors: *“not less than three in Italian law (soccorso divided into assistenza and salvataggio, and ricupero), mainly two in French law (secours en mer divided into assistance aux navires and sauvetage des épaves) and mainly three in Spanish Law (asistencia, salvamento, auxilio)”*¹⁹⁵. In addition, as suggested by Carducci, *“even within the Common Law tradition several aspects of salvage law differ to quite an extent”*¹⁹⁶. This position is supported by Boesten: *“although based largely on a basic set of common principles, salvage law has evolved with national variations and consequentially not only are the responses to some questions unclear but they may also vary as to how the rights of the finder, salvor, owner, or State of origin are defined and balanced”*¹⁹⁷.

The international salvage law regime is codified in the Brussels 1910 Convention, its 1967 Protocol and in the 1989 Salvage Law Convention of London. But, according to US courts, the salvage law regime is also a

¹⁹⁴ Miller M. L. (n.d.), *op. cit.*, p. 351.

¹⁹⁵ Carducci G., “The Expanding Protection of the Underwater Cultural Heritage: The New UNESCO Convention versus Existing International Law”, in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002 b, pp. 161-162

¹⁹⁶ Carducci G. (2002 b), *last op. cit.*, p. 161.

¹⁹⁷ Boesten E. (2002), *op. cit.*, p. 92.

custom of international law¹⁹⁸. The United States Court of Appeals for the Fourth Circuit, in its opinion of the 24 March 1999 related to the case *R.M.S. Titanic, Inc. v. Haver*, stated that “*The body of admiralty law... was the well-known and well developed “venerable law of the sea” which arose from the custom among “seafaring men”... and which enjoy “international comity”... Nations have applied this body of maritime law for 3,000 years or more. Although it would add little to recount the full history here, we note that codifications of the maritime law have been preserved from ancient Rhodes (900 B.C.E.), Rome (Justinian’s *Corpus Juris Civilis*) (533 C.E.), City of Trani (Italy) (1063), England (the Law of Oleron) (1189), the Hanse Towns or Hanseatic League (1597), and France (1681), all articulating similar principles. And they all constitute a part of the continuing tradition of the law of nations – the *jus gentium*”*¹⁹⁹. This position is also sustained by authors like Booth and Boesten²⁰⁰.

Nevertheless, other several international experts totally reject this interpretation. According to Purpura “*The Law Rhodia of the sea has been recalled without any foundation in a sentence of an American Court of Appeal in order to legitimize a sort of primitive *ius naufragii*... it is erroneous to consider the Rhodia Law of the sea as containing marine practices of any kind*”²⁰¹. In the view of Miller: “*If a law is part of a *jus gentium*, then the law implicitly has history and custom supporting it. Since applying laws to UCP is relatively new in the legal world, there is simply not history or custom to claim that the application of salvage law is part of a *jus gentium*”*²⁰². Similar are the reflections of Carducci: “*Concerning the customary law, though it is since centuries recognized the duty, moral but progressively also*

¹⁹⁸ Conforti clarifies the notion of customary international law: “*si ritiene che la consuetudine internazionale sia costituita da un comportamento costante ed uniforme tenuto dagli Stati, dal ripetersi cioè di un dato comportamento, accompagnato dalla convinzione dell’obbligatorietà del comportamento stesso*”. Conforti B. (2002), *op. cit.*, p. 34.

¹⁹⁹ United States Court of Appeals for the Fourth Circuit, *R.M.S. Titanic, Inc v. Haver*, opinion No. 98-1934 (CA-93-902-N), 28 April 1999, p. 18. With this sentence the Court amends its opinion filed March 24, 1999, from which the sentence is taken.

²⁰⁰ See Booth F., “The Collision of Property Rights and Cultural Heritage; the Salvors’ and Insurers’ Viewpoints”, in Hoffman B. T. (Edited by), *Art and Cultural Heritage: Law, Policy and Practice*, Cambridge University Press, 2006 and Boesten E. (2002), *op. cit.*, p. 93.

²⁰¹ See Purpura G., “La protezione dei giacimenti archeologici in acque internazionali e la Lex Rhodia del mare”, in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneum*, Vol. 4, Massa Editore, Sep. 2004, pp. 13-26.

²⁰² Miller M. L., “Underwater Cultural Heritage: is the Titanic still in peril as courts battle over the future of the historical vessel?”, *Emory International Law Review*, Vol. 20, n.d., pp. 357-358.

legal, to save a person in peril, beyond a few general principles no precise and complete international customary regime of salvage appears, especially for UCH”²⁰³. In addition, this last author correctly highlights that “One thing is the desirable uniformity of regimes in the high seas, a different thing, definitely less desirable, is to generalize national solutions and/or regimes as being part of customary international law and to then presume them in principle identical all over the world, and even applicable to UCH in spite of the specificity of its nature and needs of protection”²⁰⁴.

Actually, the sentence “Recognizing the desirability of determining by agreement uniform international rules regarding salvage operations”²⁰⁵ stated in the Preamble of the 1989 Salvage Law Convention suggests the absence of a uniform international customary regime on salvage (as sustained by the authors exposed above). Moreover, civil law states normally do not recognize this regime (in particular when applied to the underwater cultural heritage) as customary international law.

In any case, as stated by Scovazzi, it is not clear “how a “venerable” body of rules, that is believed to have developed in times when nobody cared about the underwater cultural heritage, could provide today any sensible tool for dealing with the protection of the heritage in question”²⁰⁶. Interestingly, also some authors who support the validity of the salvage law regime have nevertheless recognized the necessity to modernize it in virtue of its application to the underwater cultural heritage. For example, according to Stern “Salvage principles, as they developed over the centuries, could have anticipated neither the technological advances in locating deep-sea shipwrecks in international waters, nor the public’s interest in preserving the wrecks’ possible historical value. As a result, traditional application of salvage law in cases of historic salvage inadequately protects both the rights of the salvors and the archaeological integrity of the vessel”²⁰⁷. Therefore, as affirmed by

²⁰³ See Carducci G. (2002 b), *op. cit.*, p. 160.

²⁰⁴ Carducci G., “The Crucial Compromise on Salvage Law and the Law of Finds”, in Garabello R. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Before and After the 2001 UNESCO Convention*, Publications on Ocean Development, Vol. 41, Martinus Nijhoff Publishers, Leiden, 2003, p. 199.

²⁰⁵ International Maritime Organization (IMO), *International Convention on Salvage*, London, 1989, Preamble.

²⁰⁶ Scovazzi T., “The Application of “Salvage Law and Other Rules of Admiralty” to the Underwater Cultural Heritage: Some Relevant Cases”, in Garabello R. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Before and After the 2001 UNESCO Convention*, Publications on Ocean Development, Vol. 41, Martinus Nijhoff Publishers, Leiden, 2003 b, p. 78.

²⁰⁷ Stern J. S. (2000), *op. cit.*, p. 2490.

Barrowman more than 20 years ago (1987), “the law of salvage is in a state of chaos”²⁰⁸.

Despite these considerations, the 1989 Salvage Convention implicitly includes the rescue of ancient shipwrecks in its scope. Nevertheless, it also grants to its states parties the possibility of reservation through art. 30, par. 1 (d): “Any State may, at the time of signature, ratification, acceptance, approval or accession, reserve the right not to apply the provisions of this Convention: (d) when the property involved is maritime cultural property of prehistoric, archaeological or historic interest and is situated on the sea-bed”²⁰⁹.

According to art. 1 (a) of the 1989 Salvage Convention “Salvage operation means any act or activity undertaken to assist a vessel or any other property in danger in navigable waters or in any other waters whatsoever”²¹⁰. The same article 1 define ‘vessel’ as “any ship or craft, or any structure capable of navigation”²¹¹, but according to article 4 “Without prejudice to article 5, this Convention shall not apply to warships or other non-commercial vessels owned or operated by a State and entitled, at the time of salvage operations, to sovereign immunity under generally recognized principles of international law unless that State decides otherwise”²¹². As underlines by Boesten “The question whether ‘vessel’ itself includes wrecks or sunken ships remained unsolved during the drafting process... leaving the determination of whether a sunken vessel is subject to salvage to be dealt with by national law”²¹³. Moreover, as already states, the question if ancient sunken warships and states’ non-commercial vessels still possess, after their sinking, the sovereign immunity status is still under debate²¹⁴.

The Salvage Law Convention does not provide a definition of warship (we may presumably assume as valid the definition provided in the UNCLOS Convention²¹⁵) and it neither explains the meaning of ‘danger’. However, a “condition of peril” is a key parameter for a fair application of the salvage law regime and, consequently, it must be accurately explored examining some legal cases.

²⁰⁸ Barrowman E., “The Recovery of Shipwrecks in International Waters: A Multilateral Solution”, *Michigan Yearbook of International Legal Studies*, 1987, p. 236.

²⁰⁹ IMO (1989), *op. cit.*, art. 30, par. 1 (d).

²¹⁰ IMO (1989), *op. cit.*, art. 1 (a).

²¹¹ IMO (1989), *last op. cit.*, art. 1 (b).

²¹² IMO (1989), *last op. cit.*, art. 4, par. 1.

²¹³ Boesten E. (2002), *op. cit.*, p. 118.

²¹⁴ See below chapter 2, par. 5.

²¹⁵ See UNCLOS (1982), *op. cit.*, art. 29.

In the case *Fort Myers Shell and Dredging Co., Inc. v. the Barge Nbc 512 and the Barge Nbc 540* (1968), the Court stated: “It is not necessary that there be danger immediately impending, but if the vessel is stranded so that it is subject to the potential danger of damage or destruction she may will be a subject of salvage services”²¹⁶. In the case *Treasure Salvors, Inc. and Armada Researchcorp. v. the Unidentified Wrecked and Abandoned Sailing Vessel Believed to be the Nuestra Senora De Atocha* (1978) the United States Court of Appeals for the Fifth Circuit affirmed that “There is no dispute that Atocha was lost. Even after discovery of the vessel’s location it is still in peril of being lost through the actions of the elements”²¹⁷. In the case *Bemis v. RMS Lusitania* the Court insisted: “underwater shipwrecks are usually considered in marine peril because of the risk of loss”²¹⁸. Therefore, the US courts seem to sustain an implicit condition of marine peril for the sunken vessels caused by the “action of the elements” and the subsequent “risk of loss” (expressed, for example, by the monetary loss generated by the deterioration process or deriving from the fact that the vessel location is unknown).

However, this interpretation clashes with the emerging position of maritime and underwater archaeologists, who sustain that a shipwreck *in situ* is not necessarily in danger²¹⁹. Interestingly, in the case *Cobb Coin Co., Inc. v. Unidentified, Wrecked, Etc.* (1982), the United States District Court of Florida seemed, at first, to consider the opinion of archaeologists: “Archaeologists for the State testified that in their opinion ancient shipwrecks buried under the sand are in no “peril” at all; they are undisturbed “time capsules” rich with archaeological, anthropological and historical data. They felt that salvage on old wrecks actually created a “peril” for these artifacts by disturbing their tranquil existence”²²⁰. But, finally, the district court ignored their perspective arguing that “These artifacts were

²¹⁶ United States Court of Appeals for the Fifth Circuit, *Fort Myers Shell and Dredging Co., Inc. v. the Barge Nbc 512 and the Barge Nbc 540*, case No. 404 F.2d 137, 27 November 1968, par. 8.

²¹⁷ United States Court of Appeals for the Fifth Circuit, *Treasure Salvors, Inc. and Armada Researchcorp. v. the Unidentified Wrecked and Abandoned Sailing Vessel Believed to be the Nuestra Senora De Atocha*, case No. 569 F.2d 330, 13 March 1978, par. 24.

²¹⁸ United States Court of Appeals for the Fourth Circuit, *Bemis v. RMS Lusitania*, case No. 95-2057, 17 September 1996, p. 7.

²¹⁹ In their view, after an initial period of deterioration, an underwater object reaches a sort of equilibrium with the environment that slows down the degradation processes. This situation leads to a long-term preservation of the artifact underwater if the conditions-parameters of the site do not change.

²²⁰ United States District Court, S.D. Florida, *Cobb Coin Co., Inc. v. Unidentified, Wrecked, Etc.*, 549 F.Supp. 540, No. 79-8266-Civ-JLK, 31 August 1982, par. 560.

recovered from under many feet of ocean sand through the plaintiff's skilled and laborious efforts. Had they not been saved, they likely would still be lying on the ocean bottom subject to further rearrangement and, perhaps, loss from weather conditions. Further, if not recovered, they would be threatened by pirates who might have disturbed the site and removed the articles without the supervision of the Admiralty Court.... The Court therefore holds that the plaintiff, Cobb Coin Company, Inc., shall be awarded all the artifacts it has recovered since the inception of this lawsuit, as compensation for its expenses and an award for superlative salvage service"²²¹. Only one year later, judging a similar case, the District Court of Maryland expressed a statement more consistent with the archaeologists' view. In the case *Subaqueous Exploration v. Unidentified, Wrecked Vessel* (1983) the Court stated that "the defendant vessels are not reasonably in peril of being lost through the elements since they are "impervious to weather conditions above the surface of the sea" with the "sand prevent[ing] deterioration under water".... The Court, therefore, finds under the circumstances that the traditional public policy concerns underpinning the federal law of salvage are insufficiently implicated, if at all, when the objects to be rescued are marine antiquities which have been undisturbed for centuries"²²². Similarly, in the case *Chance v. Certain Artifacts Found Salvaged* (1984) the District Court of Georgia recognized the opinion of an expert stating that the site had reached a status of equilibrium with its natural environment. Thus, "salvage efforts created a greater peril than that which previously existed on the river bottom"²²³. As rightly reminded by Bowman, "a salvor is not entitled to a salvage award if he has caused the wreck's peril"²²⁴ and, consequently, in this case the court denied any salvage award.

Overall, these are significant, but episodic interpretations of the concept of peril. In the admiralty law case judged by the US courts still prevails, to these days, the assumption that the underwater sites preserved *in situ* are implicitly in danger²²⁵. Perhaps, the emerging policies and techniques of preservation *in situ* of the underwater cultural heritage could lead, in the next years, to an evolution of the concept of danger in

²²¹ United States District Court, S.D. Florida (1982), *last op. cit.*, pars. 560-561.

²²² United States District Court, D. Maryland, *Subaqueous Exploration v. Unidentified, Wrecked Vessel*, 579 F.Supp. 597, 21 December 1983, par. 611.

²²³ United States District Court, S.D. Georgia, *Chance v. Certain Artifacts Found and Salvaged*, 606 F.Supp. 801, case No. CV483-391, a6 August 1984, at 808-809.

²²⁴ Bowman L. J., "Oceans apart over sunken ships: is the underwater cultural heritage convention really wrecking admiralty law?", *Osgoode Hall Law Journal*, Vol. 42, No. 1, 2004, p. 9.

²²⁵ Additional reflections on the peril issue will be suggested in chapter 2, par. 6.

admiralty law (moving, for example, to a situation in which the circumstances of peril must be scientifically proved)²²⁶. Nevertheless, at the moment, this is just an unconfirmed hypothesis.

Salvage operations may have a contractual or voluntarily origin. In the first case, the master or the owner of the vessel and the *salvor* stipulate a binding contract according to which the *salvor* will receive a reward (the amount of which is fixed in the contract) having successfully rescued the property in danger. In the second case, the *salvor*, who voluntarily acts saving whole or parts of an imperiled property at sea, may claim for a reward which amount will be determined by the competent court²²⁷. The reward has to be proportioned to the value of the saved property (in no circumstance it can exceed the total estimated value of the salvaged properties).

For obvious reasons, determining the monetary reward for the salvage of ancient artifacts is a “challenging task”. As a result, article 13 of the 1989 Salvage Law Convention defines a list of criteria that the tribunal having jurisdiction over the claim of the *salvor* must consider for fixing the amount of the reward. They are:

- “(a) the salvaged value of the vessel and other property;*
- (b) the skill and efforts of the salvors in preventing or minimizing damage to the environment;*
- (c) the measure of success obtained by the salvor;*
- (d) the nature and degree of the danger;*

²²⁶ If this scenario should emerge then it will be necessary to determine who has to sustain the burden of proof: salvagers, domestic competent authorities or others. In the view of Carducci: “Under the Convention [2001 UNESCO Convention], as already under domestic legislation, only the competent authorities may decide, and not the “spontaneous” salvor on his/her own initiative, if a specific UCH is exceptionally in peril and its protection deserves removal or other activities”. This reasoning may be also supported considering that “It is unlikely that salvors would produce evidence against their own interest”. See Carducci G., “The Crucial Compromise on Salvage Law and the Law of Finds”, in Garabello R. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Before and After the 2001 UNESCO Convention*, Publications on Ocean Development, Vol. 41, Martinus Nijhoff Publishers, Leiden, 2003, p. 202, and Bowman L. J. (2004), *op. cit.*, p. 11.

²²⁷ As stated by Regan “the “no cure-no pay” principle generally prevails”. Therefore, the salvor, in order to get a reward, has to successfully conclude the salvage operation. Regan R., “When Lost Liners Become Found: An Examination of the Effectiveness of Present Maritime Legal and Statutory Regimes for Protecting Historic Wrecks in International Waters with Some Proposals for Change”, *Tulane Maritime Law Journal*, Vol. 29, p. 323.

- (e) *the skill and efforts of the salvors in salvaging the vessel, other property and life;*
- (f) *the time used and expenses and losses incurred by the salvors;*
- (g) *the risk of liability and other risks run by the salvors or their equipment;*
- (h) *the promptness of the service rendered;*
- (i) *the availability and use of vessels or other equipment intended for salvage operations;*
- (j) *the availability of readiness and efficiency of the salvor's equipment and the value thereof"*²²⁸.

In some circumstances the *salvor*, despite his efforts, may not obtain any rewards. According to art. 18, "*A salvor may be deprived of the whole or part of the payment due under this Convention to the extent that the salvage operations become necessary or more difficult because of fault or neglect on his part or if the salvor has been guilty of fraud or other dishonest conduct*"²²⁹. Moreover, according to art. 19, "*Services rendered notwithstanding the express and reasonable prohibition of the owner or master of the vessel... shall not give rise to payment under this Convention*"²³⁰. These provisions have a significant impact on the whole regime: a *salvor* who performed misleading or incompetent salvage operations is not entitled to receive a reward. The same consideration is valid for those who act despite the express and reasonable refusal of the owner.

To sum up, in the salvage law a *salvor* may assist a vessel (and its cargo) in marine peril signing a contract with the legal owner or acting voluntarily. In the first case the *salvor* obtain a remuneration for his efforts which amount is fixed in the contract. In the second case the *salvor* obtains a lien (but not title) on the property saved and he may claim for a salvage reward if, as stated by the United States Court of Appeals for the Fourth Circuit in the case *Bemis v. RMS Lusitania* (1996), three conditions are respected: "*First, the property must be in marine peril... Next, the salvage service must be voluntary... Third, the salvage must be successful, in whole or in part*"²³¹. The competent court, considering the criteria indicated by art. 13, will determine the amount of the compensation. Then, as clearly expressed by the United States Court of

²²⁸ IMO (1989), *last op. cit.*, art. 13, par. 1.

²²⁹ IMO (1989), *last op. cit.*, art. 18.

²³⁰ IMO (1989), *last op. cit.*, art. 19.

²³¹ United States Court of Appeals for the Fourth Circuit (1996), *op. cit.*, p. 7.

Appeals for the Fourth Circuit in the case *R.M.S. Titanic, Inc. v. The Wrecked and Abandoned Vessel*, “If the owner appears and pays the salvage reward determined by the court, the lien is discharged and the owner takes the property clear of the salvage lien.... On the other hand, if the owner does not appear, then the case continues as an *in rem* action, and the court determines the award, sells the property, and, from the proceeds, pays the salvor... Any remainder from the sale is remitted to the owner.... If it becomes apparent to the court that the proceeds of any sale would clearly be inadequate to pay the salvor its full reward, then the court might, as a matter of discretion, award the salvor title to the property in lieu of the proceeds of sale, thus saving the costs of sale”²³².

Other than the salvage law, the US courts have sometimes applied the law of finds in respect to the rescue of ancient shipwrecks. Differently from the salvage law, the law of finds may be applied only when the discovered shipwreck (and its cargo) has never belonged to anybody or it has been abandoned²³³. Through abandonment an owner renounces to its title over a property. However, the abandonment issue is a problematic aspect for at least two reasons: firstly, because “appears to be no conventional or customary international law governing the question, and state practice in this regard is not consistent”²³⁴; and, secondly, because “the private law concept of abandonment does not exist in the domestic law of numerous countries, especially those in Latin America”²³⁵.

As effect of the law of finds, the finder, who first takes actual or constructive possession of a shipwreck and expresses the will to own it in front of a competent court, may directly acquires full title on it (the so-called notion “*finders, keepers*”)²³⁶. However, while in the salvage law cases the competent court may entitled exclusive salvage rights to the *salvor* acting on behalf of the owner (thus, preventing interference from

²³² United States Court of Appeals for the Fourth Circuit, *R.M.S. Titanic, Inc. v. The Wrecked and Abandoned Vessel*, case No. 01-2227 (CA-93-902-N), 12 April 2002, pp. 14-15.

²³³ See Panayatopoulos (2009), *op. cit.*, p. 41.

²³⁴ Forrest C. J. S., (2003 b), *op. cit.*, p. 46.

²³⁵ Bowman L. J. (2004), *op. cit.*, p. 30. In addition it must be considered that the domestic legislation of several states grants title to the coastal state whether the abandoned wreck is embedded or submerged within the state’s territorial borders. In such circumstances there is an immediate passage of property right and, therefore, the law of finds cannot be applied. See, for example, the United States, Abandoned Shipwreck Act (ASA), 1987, section 6 and Italy, Codice dei beni culturali e del paesaggio, 2008, arts. 90-91.

²³⁶ The proofs required by the U.S. courts to demonstrate constructive possession have usually been more demanding in the cases judged on the base of the law of finds, rather than those cases judged applying the salvage law regime.

others potential *salvors*), under the law of finds “a finder cannot exclude others from their attempts to obtain first possession of artifacts recovered from an abandoned wreck”²³⁷.

Under a general perspective, “Admiralty favors the law of salvage over the law of finds because salvage law’s aims, assumptions and rules are more consonant with the needs of marine activity and because salvage law encourages less competitive and secretive forms of conduct than finds law”²³⁸. The individualistic behaviors and the risks related to the application of the law of finds are explained in the case *Hefer v. United States*: “These rules encourage certain types of conduct and discourage others. A would-be finder should be expected to act acquisitively, to express a will to own by acts designed to establish the high degree of control required for a finding of possession. The would-be finder’s longing to acquire is exacerbated by the prospect of being found to have failed to establish title. If either intent or possession is found lacking, the would-be finder receives nothing; neither effort alone nor acquisition unaccompanied by the required intent is reward. Moreover, if the property is ultimately found not to have been abandoned the law of finds permits no reward, even for efforts to recover the property that have been partly or completely successful... Furthermore, success as a finder is measured solely in terms of obtaining possession of specific property; possession of specific property can seldom be shared, and mere contribution by one party to another’s successful efforts to obtain possession earns no compensation”²³⁹.

Concluding, the main problem is that the salvage law and the law of finds regimes were originally shaped to handle commercial commodities but, in a successive period of time, their area of application has been extended to include the underwater cultural heritage. As a result, these systems are “not apt [and neither aimed] to deal with preservation or even protection of underwater cultural heritage in the common interest of mankind”²⁴⁰. On the contrary their aim is to respectively safeguard the private (commercial) interest of the *salvor*

²³⁷ United States Court of Appeals for the Fourth Circuit, *R.M.S. Titanic, Inc. v. The Wrecked and Abandoned Vessel*, case No. 04-1933 (CA-93-902-N), 31 January 2006, p. 20.

²³⁸ United States Court of Appeals Fourth Circuit, No. 974 F.2d 450, 12 November 1992, par. 38.

²³⁹ United States District Court, S.D. New York, *Hener v. United States*, Case No. 81 Civ. 3857, 15 October 1981, 525 F.Supp. 356.

²⁴⁰ Vadi V. S., “The Protection of Underwater Cultural Heritage in International Law: Challenges and Perspectives”, at Vrdoljak A. F. and Francioni F., *The Illicit Traffic of Cultural Property in the Mediterranean*, EUI Working Paper AEL, Sep. 2009, p. 96.

and finders. Consequently, “the non-commercial value of such properties and their use for the public benefit have very little relevance”²⁴¹.

2.1 New trends emerging from the US case law: more demanding rules for the historic salvage operations

Most of the juridical cases concerning the application of the salvage law and the law of finds on underwater cultural sites have been judged in the United States. Art. 3, sect. 2 of the United States Constitution extends the judicial power of the United States “to all Cases of admiralty and maritime Jurisdiction” independently of their locations²⁴². To be more precise, the United States courts have not jurisdiction on wrecks located in international waters, but “once a salvor who discovers and brings up an artifact from an identifiable wreck site initiates suit by taking that object into federal court, the court acquires jurisdiction not only to adjudicate the disposition of the article already within its territorial jurisdiction, but maritime jurisdiction (based on in personam principles) to adjudicate disputes between competing salvors, and in rem jurisdiction (coupled with in personam jurisdiction over the claimants) to dispose of all artifacts therefore brought up from that site”²⁴³. Therefore, as highlighted by Stern, “a court may rule that a solitary object brought into a court’s jurisdiction constitutes effective control and constructive possession over the entire wreck from which it was taken”²⁴⁴.

Considering the sentences of admiralty law judged in the last 20 years, four interesting legal trends seem to emerge. First, the states’ title on sunken warships and other state non-commercial vessels (even ancient ones) may be overcome “only” in the presence of an express, clearly

²⁴¹ Scovazzi T., “The Protection of the Underwater Cultural Heritage: an Italian Perspective”, in Vrdoljak A. F. and Francioni F., *The Illicit Traffic of Cultural Property in the Mediterranean*, EUI Working Paper AEL, Sep. 2009, p. 81.

²⁴² See United States, Constitution, Philadelphia, 1787, art. 3, sect. 2.

²⁴³ Scovazzi T., “The Application of “Salvage Law and Other Rules of Admiralty” to the Underwater Cultural Heritage: Some Relevant Cases”, in Garabello R. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Before and After the 2001 UNESCO Convention*, Publications on Ocean Development, Vol. 41, Martinus Nijhoff Publishers, Leiden, 2003 b, p. 46.

²⁴⁴ See also Stern J. S., “Smart Salvage: Extending Traditional Maritime Law to Include Intellectual Property Rights in Historic Shipwrecks”, *Fordham Law Review*, Vol. 8, Issue 6, 2000, p. 2493.

and convincing act of abandonment²⁴⁵. Second, also for sunken private vessels the long passage of time and the owner's inaction could not be considered satisfactory proofs of implicit abandonment when an owner comes before the court claiming his rights. Third, the owner of a vessel has the right to refuse an unwanted salvage and, therefore, if the *salvor* decides to proceed despite the refusal of the owner, he may be forced to return the salvaged property without being entitled to receive any salvage award²⁴⁶. Fourth, in relation to the salvage of ancient shipwrecks, the US courts started to consider the adoption of scientific (archaeological) standards of investigation as additional parameter for determining eventual salvage rewards.

In 1992, in the sentence concerning the S.S. Central America²⁴⁷, the United States Court of Appeals for the Fourth Circuit stated that *"when sunken ships or their cargo are rescued from the bottom of the ocean by those other than the owners, courts favor applying the law of salvage over the law of finds. Finds law should be applied, however, in situations where the previous owners are found to have abandoned their property. Such abandonment must be proved by clear and convincing evidence, though, such as an owner's express declaration abandoning title. Should the property encompass an ancient and long lost shipwreck, a court may infer an abandonment. Such an inference would be improper, though, should a previous owner appear and assert his ownership interest; in such a case the normal presumptions would apply and an abandonment would have to be proved by strong and convincing evidence"*²⁴⁸. In this case, the contended good was a public vessel that, however, was used for commercial activities. This circumstance

²⁴⁵ Actually, a sovereign state may also lose title over a sunken warship or a state non-commercial vessel in other circumstances such as, for example, when the vessel has been captured before its sinking (in wartime), by international agreement, through donation or sale. However, these are circumstances that sporadically happen. On the analysis of the elements sustaining an express abandonment see also Roach A. J., "Sunken Warships and Military Aircrafts", *Marine Policy*, Vol. 20, No. 4, Jul 1996, p. 351.

²⁴⁶ As already remarked, this right is stated by art. 19 of the 1989 Salvage Convention. However, in the opinion of Bederman *"a vessel owner may only decline proffered salvage services if two elements are satisfied. First, the owner (or his master or agent) must be in actual possession of the vessel and be in a position to rescue the property. And, second, it must be demonstrated that a prudent mariner would have declined salvage services in the same situation"*. Bederman D. J., "Rethinking the Legal Status of Sunken Warships", *Ocean Development & International Law*, Vol. 31, 2002, p. 113.

²⁴⁷ The S.S. Central America was a vessel owned by the U.S. Mail and Steamship Company which sank off the South Carolina coast on 1857, carrying approximately 580 persons (of which approx. 425 lost their lives) and \$1,129,189 in gold.

²⁴⁸ United States Court of Appeals Fourth Circuit (1992), *op. cit.*, par. 56.

excluded any claim of sovereign immunity. Nonetheless, various insurers had underwritten the transported gold and, therefore, they claimed property rights on it at the time of the sentence. At first level of judgment, the district court applied the law of finds mainly considering two elements: first, the underwriters did nothing to recover the gold after the vessel sank; and, second, they apparently destroyed all the documentation they had regarding payment of claims for the gold. But successively, the United States Court of Appeals for the Fourth Circuit reversed the judgment of the district court considering that the documents “*were lost or unintentionally destroyed, rather than being intentionally destroyed*”²⁴⁹. Therefore, the case was remanded to the district court that, applying the salvage law rather than the law of finds, had to determine the proper salvage award for the *salvor*. Curiously, the district court finally assigned to the *salvor* 90% of the value of the recovered property. The Court of Appeals on 1995 confirmed such reward underling that “*In light of the shipwreck’s age, we directed the district court to consider a seventh factor: the degree to which the salvors have worked to protect the historical and archaeological value of the wreck and its item*”²⁵⁰. Therefore, according to the court “*What Thompson and Columbus-America have accomplished is, by any measure, extraordinary. We can say without hesitation that their story is a paradigm of American initiative, ingenuity, and determination*”²⁵¹.

In the case *Sea Hunt, Inc. v. Unidentified Vessels, Kingdom of Spain* (2000) the Court of appeal of the Fourth Circuit judged the sovereign right of Spain over two of its Royal Naval vessels, La Galga and Juno, that sank off the shores of present-day Virginia respectively in 1750 and 1820. Applying the Abandoned Shipwreck Act²⁵², the state of Virginia asserted ownership over these shipwrecks and, moreover, it assigned to the Sea Hunt company the right to conduct salvage operations on these vessels. The Spanish government contested this interpretation claiming title over these sunken vessels and their cargos. According to the district court, Spain retained title to Juno while, on the contrary, it

²⁴⁹ United States Court of Appeals Fourth Circuit (1992), *last op. cit.*, par. 65.

²⁵⁰ United States Court of Appeals Fourth Circuit, case No. 56 F.3d 556, 14 June 1995, par. 49.

²⁵¹ United States Court of Appeals Fourth Circuit (1995), *last op. cit.*, par. 118.

²⁵² The Abandoned Shipwreck Act (ASA) is a US law, adopted in 1987, which aim to regulate the exploration, ownership and management of abandoned historic shipwrecks discovered within state territorial waters. See United States, Abandoned Shipwreck Act (ASA), 1987.

had expressly abandoned La Galga through the 1763 “Definitive Treaty of Peace” signed by France, Great Britain and Spain. The district court also denied Sea Hunt a salvage award for the shipwreck Juno considering the expressed intention of Spain to keep such vessel and its cargo *in situ*.

On July 2000 the United States Court of Appeals for the Fourth Circuit partially reversed the judgment of the district court for what concerned the “lost” Spanish title over the wreck La Galga. First of all the United States Court of Appeals for the Fourth Circuit emphasized that “*Under admiralty law, where an owner comes forward to assert ownership in a shipwreck, abandonment must be shown by express acts*”²⁵³. Moreover, even if the district court found clear and convincing evidence of an express abandonment of the vessel La Galga in the art. XX of the 1763 Definitive Treaty of Peace, the United States Court of Appeals for the Fourth Circuit disagreed with such interpretation considering that: “*First, Article XX does not include any of the common nouns that could refer to LA GALGA... Second, the cession of state property in Article XX is limited to all that Spain possesses “on the continent of the North America.” The plain meaning of this is that Spain ceded to Great Britain only what was located on land. Spain did not cede possessions in the sea or seabed... Third, Article XX provides that Spain ceded “every thing that depends on the said countries and lands”... It is anything but clear, however, given eighteenth century understandings, that “every thing that depends” can be interpreted to include this shipwreck... Fourth, Article XX provides that “his Catholick Majesty shall have power to cause all the effects that may belong to him, to be brought away, whether it be artillery or other things”. There is no deadline for the right to take this property away... In sum, Article XX does not contain “clear and convincing” evidence of express abandonment... The mere passage of time since a shipwreck is not enough to constitute abandonment*”²⁵⁴.

On the base of the above mentioned considerations the United States Court of Appeals for the Fourth Circuit finally declared that “*Both vessel remain the property of Spain*”²⁵⁵. Moreover, the Court also confirmed the district court’s denial of a salvage reward: “*Sea Hunt knew before bringing this action that the JUNO was a Spanish ship and that Spain might make a claim of ownership and decline salvage.... Because Sea Hunt had prior*

²⁵³ See United States Court of Appeals for the Fourth Circuit, *Sea Hunt, Inc. v. Unidentified Vessels, Kingdom of Spain*, No. 99-2035 and 99-2036, 21 July 2000, p. 11.

²⁵⁴ United States Court of Appeals for the Fourth Circuit (2000), *last op. cit.*, pp. 15-20.

²⁵⁵ United States Court of Appeals for the Fourth Circuit (2000), *last op. cit.*, p. 21.

knowledge of Spain's ownership interests and had reason to expect Spain's ownership claim and refusal to agree to salvage activity on JUNO, *Sea Hunt* can not be entitled to any salvage award"²⁵⁶. According to Bederman "Until very recently, no admiralty court in this country has required proof of express acts before ruling that a foreign warship has been abandoned"²⁵⁷ and therefore "The *Sea Hunt* decision thus reflects a peculiar schism in authority in U.S. courts on the application of an implied abandonment rule.... The *Sea Hunt* is unlikely, therefore, to have extended influence in developing future doctrine in respect to a rule of express abandonment for warships"²⁵⁸.

In the United States Policy for the Protection of Sunken Warship (2001), the ex U.S. president Clinton stated: "Thousand of United States government vessels, aircraft and spacecraft ("State craft"), as well as similar State craft of foreign nations, lie within, and in waters beyond, the territorial sea and contiguous zone. Because of recent advances in science and technology, many of these sunken Government vessels, aircraft, and spacecraft have become accessible to salvors, treasure hunters, and other... Pursuant to the property clause of Article IV of the Constitution, the United States retains title indefinitely to its sunken State craft unless title has been abandoned or transferred in the manner Congress authorized or directed. The United States recognize the rule of international law that title to foreign sunken craft may be transferred or abandoned only in accordance with the law of the foreign flag State. Further, the United States recognizes that title to a United States of foreign sunken State craft, wherever located, is not extinguished by passage of time, regardless of when such sunken State craft was lost at sea. International law encourages nations to preserve objects of maritime heritage wherever located for the benefit of the public. Those who would engage in unauthorized activities directed at sunken State craft are advised that disturbance or recovery of such craft should not occur without the express permission of the sovereign, and should only be conducted in accordance with scientific standards and with the utmost respect for any human remains. The United States will use its authority to protect and preserve sunken State craft of the United States and other nations, whether located in the waters of the United States, a foreign nation, or in international waters"²⁵⁹. Some interesting reflections stand out from this speech.

²⁵⁶ United States Court of Appeals for the Fourth Circuit (2000), *last op. cit.*, p. 21.

²⁵⁷ Bederman D. J. (2002), *op. cit.*, p. 103.

²⁵⁸ Bederman D. J. (2002), *last op. cit.*, p. 106.

²⁵⁹ U.S. President Clinton W. J., *Statement on United States Policy for the Protection of Sunken Warship*, 37 Weekly Comp. Pres. Doc. 195196, 19 January 2001, quoted in Harris J. R., "The Protection of Sunken Warships as gravesites at sea", *Ocean & Coastal Law Journal*, 2001-02, pp. 77-78.

First, it recognizes that the technological development has changed the condition of protection of the underwater cultural heritage, making it accessible to private companies looking for profit. This seems to suggest that the solutions adopted in the past may be inefficient and useless nowadays.

Second, it affirms that the United States retains title to its sunken vessels unless an explicit act of abandonment or transfer. Therefore, the mere passage of time it is not a proof of abandonment.

Third, the statement “*International law encourages nations to preserve objects of maritime heritage wherever located for the benefit of the public*” seems to clash with the historic salvage companies’ policy aimed to sell (and, therefore, disperse) these object for financial rewards²⁶⁰.

Fourth, this document establishes that anybody interested to conduct activities on a sunken state vessel should obtain an express permission from the owner (thus, substantially excluding unauthorized voluntarily actions) and he should act in accordance with scientific (archaeological) standards and “*with the utmost respect for any human remains*”.

In the sentence of the case *Marex Int’l, Inc. v. The Unidentified, Wrecked and Abandoned Vessel* (1997) the district court underlined that “*Because the vessel [S.S. North Carolina] is an historic shipwreck, the archaeological duty of care requires that the finder or the salvor document to the court satisfaction the shipwreck’s archaeological “provenance data”... accomplished by mapping or recording the location, depth and proximity of each artifact recovered in relation to the other artifacts.... The archaeological and historical research and the preservation measures taken by plaintiff demonstrate that it has acted with due diligence in conducting its salvage operations*”²⁶¹. Similarly, in 2010, the United States District Court for the Eastern District of Virginia, for determining the salvage award obtainable by the RMS Titanic Inc., evaluated the “*Degree to which the Salvors have*

²⁶⁰ A different opinion is expressed by Booth. Supporting the salvors recover of sunken properties this author arguments that “*The artifacts recovered can then be enjoyed by those who purchase them and, if they are purchased by museums or other public entities, can be put on display for many to enjoy. If they are of significant archaeological or historical importance, they can be studied and tested by experts, professors, and scientists, and can thereby contribute to the sum of human knowledge. Lying on the ocean floor, out of reach and out of sight of essentially all of mankind, they can do none of those things*”. See Booth F. (2006), *op. cit.*, p. 296.

²⁶¹ United States District Court, S. D. Georgia, *Marex Int’l, Inc. v. The Unidentified, Wrecked and Abandoned Vessel*, case No. CV 496-194, 952 F.Supp. 825, 13 January 1997, conclusions of law, point c and d.

Worked to Protect the Historical and Archaeological Value of the Wreck and the Items Salvaged"²⁶². Interestingly, the court granted to the RMS Titanic Inc. a salvage award equal to 100% of the market value of the recovered goods. But, at the same time, it imposed to keep together as a collection the artifacts recovered since 1993 (thus, excluding the dispersion-sale of the single asset), to conserve them according to the current internationally recognized museum standards and practices, and to make them available for public exhibitions, historical analysis, scientific and academic researches and other educational purposes²⁶³.

Evaluating the techniques of salvage adopted, a court may also deny a reward for those authorized *salvors* who do not properly respect the archaeological standards of investigation. For example, in the case *Joan M. Klein v. the Unidentified Wrecked and Abandoned Sailing Vessel, Etc.* (1985) the Court of Appeals confirmed the opinion of the district court according to which: "*the plaintiff's unauthorized disturbance of one of the oldest shipwrecks in the Park and his unscientific removal of the artifacts did more to create a marine peril than to prevent one. The lower court correctly denied plaintiff's prayer for a salvage award*"²⁶⁴. This practice certainly favors a more adequate investigation and recovery of the underwater cultural goods. However, as ironically underlines by Bowman, "*whether courts really understand the principle of archaeological excavation is another matter*"²⁶⁵.

In another recent case, *Odyssey Marine Exploration, Inc. v. Unidentified Shipwrecked Vessel, Kingdom of Spain*, the Spanish government claimed title and the restitution of 594.000 silver and gold coins (and a number of other small artifacts) salvaged by the company Odyssey Marine Exploration from a (presumed Spanish) vessel discovered on 2007 in international waters (off the Straits of Gibraltar)²⁶⁶. During the different levels of judgment several relevant aspects were debated: the exact

²⁶² See United States District Court, Eastern District of Virginia, *R.M.S. Titanic Inc. v. The Wrecked and Abandoned Vessel*, case No. 2:93cv902, 12 August 2010, pp. 34-38.

²⁶³ See United States District Court, E.D. Virginia, *R.M.S. Titanic Inc. v. The Wrecked and Abandoned Vessel, Exhibit A: Revised Covenants and Conditions*, 12 August 2010.

²⁶⁴ United States Court of Appeals for the Eleventh Circuit, *Joan M. Klein v. the Unidentified Wrecked and Abandoned Sailing Vessel, Etc.*, case No. 758 F.2d 1511, 29 April 1985, par. 41.

²⁶⁵ Bowman L. J. (2004), *op. cit.*, p. 10.

²⁶⁶ On this case see also Strecker A., "Pirates of the Mediterranean? The Case of the 'Black Swan' and its Implications for the Protection of Underwater Cultural Heritage in Mediterranean Region", in Vrdojak A. F. and Francioni F., *The Illicit Traffic of Cultural Property in the Mediterranean*, EUI Working Paper AEL, Sep. 2009.

location of the shipwreck (international waters or Spanish territorial waters), its identification (*Merchant Royal*, *HMS Sussex*, *Nuestra Senora de las Mercedes* or a non-vessel site), its nature (Spanish warship or commercial vessel) and a supposed lack of jurisdiction on the matter by the judging US district court (according to Spain the vessel was immune from judicial arrest under the Foreign Sovereign Immunities Act [FSIA]). In its sentence the district court recognized that the unidentified shipwreck was, actually, the *Nuestra Senora de las Mercedes*, a Spanish warship that sank in 1804. Moreover, the court stated that “the Mercedes is a naval vessel of Spain and that the wreck of this naval vessel, the vessel’s cargo, and any human remains are the natural and legal patrimony of Spain and are entitled in good conscience and in law to lay undisturbed in perpetuity absent the consent of Spain and despite any man’s aspiration to the contrary”²⁶⁷.

In the second level of judgment the United States Court of Appeals for the Eleventh Circuit expressed other interesting considerations. First, the court states that “The site and thus the res is a shipwreck, even though no intact vessel was found... the evidence in the record fully supports the finding of the district court that the res is the Mercedes for the purposes of foreign immunity”²⁶⁸. Second, it established that “The fact that the Mercedes has been sitting on the ocean floor for over 200 years does not negate Spain’s property interest in the shipwreck.... The shipwreck of the Mercedes is thus unquestionably the property of Spain”²⁶⁹. Moreover, the Court of Appeals, considering the section 1609 of the Foreign Sovereign Immunities Act²⁷⁰, added that “While the Mercedes itself is not within the United States, that alone does not defeat the court’s ability to obtain jurisdiction over it. A court may have either actual or constructive possession over the res.... A court can exercise constructive possession over a shipwreck when part of the shipwreck is presented to the district court.... A salvor is thus

²⁶⁷ United States District Court, M.D. Florida Tampa Division, *Odyssey Marine Exploration Inc. v. Unidentified, Shipwrecked Vessel*, case No. 8:07-cv-614-T-23MAP, Document 270, N.D., p. 4.

²⁶⁸ United States Court of Appeals for the Eleventh Circuit, *Odyssey Marine Exploration, Inc. v. Unidentified Shipwrecked Vessel, Kingdom of Spain*, No. 10-10269, 21 September 2011, p. 29.

²⁶⁹ United States Court of Appeals for the Eleventh Circuit (2011), *last op. cit.*, p. 30.

²⁷⁰ According to section 1609 of the U.S. Foreign Sovereign Immunities Act: “Subject to existing international agreements to which the United States is a party at the time of enactment of this Act the property in the United States of a foreign state shall be immune from attachment arrest and execution except as provided in sections 1610 and 1611 of this chapter”. See United States, Foreign Sovereign Immunities Act, (as amended) 1997, section 1609.

able to bring a shipwreck found in international waters constructively within a court's territorial jurisdiction by having a portion of the shipwreck within the jurisdiction.... Because this is an *in rem* action based on the arrest of sovereign property, § 1609 provides the Mercedes with presumptive immunity from arrest"²⁷¹.

The lawyers of the Odyssey Marine Exploration argued that the Mercedes was serving as a commercial transport vessel (75% of its cargo was privately owned), but the Court of Appeal, considering the 1804 registry of ships of the Royal Spanish Navy, rejected this position clarifying that *"At the time it sank the Mercedes was a Spanish Navy vessel... Although the Mercedes did transport private cargo of Spanish citizens for a charge, the transport was of a sovereign nature. According to Spanish naval historians, providing protection and safe passage to property of Spanish citizens was a military function of the Spanish Navy, especially in time of war or threatened war... Because Spain was acting like a sovereign, not a private person in the market, we conclude the Mercedes was not conducting commercial activity and is immune from arrest under the FSIA"*²⁷². Moreover, the court added: *"we are persuade that in the context of a sunken Spanish military vessel, the cargo and the shipwreck are interlinked for immunity purposes"*²⁷³. On the base of these considerations the Court of Appeal finally ordered the releasing of the salvaged properties to Spain. This sentence was confirmed, in the last level of judgment, by the US Supreme Court of Justice that rejected the Odyssey Marine Exploration's request to block the release of the salvaged coins²⁷⁴.

To conclude, these sentences have introduced significant changes in the application of the salvage law and the law of finds on the underwater cultural sites. If these emerging trends will be confirmed, then important legal and practical consequences are expected²⁷⁵.

²⁷¹ United States Court of Appeals for the Eleventh Circuit (2011), *last op. cit.*, p. 32.

²⁷² United States Court of Appeals for the Eleventh Circuit (2011), *last op. cit.*, pp. 36-38.

²⁷³ United States Court of Appeals for the Eleventh Circuit (2011), *last op. cit.*, p. 43.

²⁷⁴ According to the latest news, these goods (coins and artifacts) have been effectively returned to Spain and, soon, they should be exposed in the ARQUA National Museum of Underwater Archaeology (Cartagena, Spain).

²⁷⁵ It is still unclear the current legal status of these trends. As emerging interpretations of the salvage law and the law of finds by the US admiralty courts they produce binding effects in the domestic legislation. At international level is still debated if these principles are (or are not) an expression of customary international law. Paragraph 5 will analyze deeper this aspect in relation to title and sovereign immunity of sunken state vessels.

First of all, it is presumable that these operations will be conducted only on contractual bases or, at least, having previously obtained the consensus of the owner (otherwise the chances of getting a reward would be at risk). Second, the *salvors* will be obliged to respect archaeological techniques of investigations in order to claim for a salvage award. Third, the court, conferring to *salvor* the right to sell the recovered artifacts as a reward for the efforts made, could also impose to manage them as a unique collection of inseparable objects²⁷⁶. Finally, the applicability of the law of finds will be strongly limited (if not totally banned), being associated to an express, clear and convincing act of abandonment²⁷⁷.

3. The 2001 UNESCO Convention: an advanced system of protection based on “constructive ambiguities”

The 2001 UNESCO Convention consists of a body text of 35 articles, containing definitions, scopes and general principles, and an Annex that sets 36 scientific standard Rules for the effective protection of the underwater cultural heritage. Both the Convention and its Annex produce binding effects on states parties. After a short introduction to the 2001 UNESCO Convention historical development, this paragraph analyzes in details the text of this Convention and the Rules of its Annex. The main goal is to show how the 2001 UNESCO Convention regulates the system of protection and which have been, during the drafting process and after its official adoption, the main debated issues. In the last part, the main issues debated within the first three Meeting of States Parties and the Scientific and Technical Advisory Body are shortly presented.

3.1 The historical development of the Convention

The 2001 UNESCO Convention is the final result of a 20th years process aimed to confer lawful protection to the underwater cultural heritage.

²⁷⁶ However, to date, a similar provision has been imposed only in the sentence judging the future disposition of the artifacts recovered from the *RMS Titanic*. As a result, this legal provision cannot be considered yet as an “emerging trend”.

²⁷⁷ This perspective seems already confirmed for warships or state’s non-commercial vessels while there are still some uncertainties about private owned vessels, despite the sentence of the S.S. Central America case.

The first studies on the legal protection of underwater cultural heritage were conducted between 1976-1985 by the Culture and Education Commission of the Council of Europe. This Commission drafted a Convention on this issue that, however, was never adopted. Eighteen years later, on 1994, the International Law Association (ILA) adopted at Buenos Aires (Argentina) the draft Convention on the Protection of the Underwater Cultural Heritage, anticipating some of the future main principles of the 2001 UNESCO Convention. Successively, on 1996, the General Assembly of the International Council of Monuments and Sites (ICOMOS) adopted in Sofia (Bulgaria) the International Charter on the Protection and Management of the Underwater Cultural Heritage, providing a series of ethical principles and methodological practices that will be reintroduced by the Rules of the Annex to the 2001 UNESCO Convention. These two events (Buenos Aires draft convention and ICOMOS Chart) stirred up the impasse and finally, at the 29th session of the UNESCO General Conference, held in 1997, states parties agreed to elaborate an international convention focused on the protection of the underwater cultural heritage.

After four years of debates and negotiations the text of the UNESCO Convention on the Protection of the Underwater Cultural Heritage was adopted on 2 November 2001 by the Plenary Session of the 31st General Conference with 88 votes in favor, 4 against (Venezuela, Turkey, Norway and Russian Federation) and 15 abstentions (Brazil, Czech Republic, Colombia, France, Germany, Greece, Iceland, Israel, Guinea-Bissau, Netherlands, Paraguay, Sweden, Switzerland, United Kingdom and Uruguay). Concerning the final vote, Maarleveld emphasizes an important point: *“A very important aspect of the adoption of the ‘Underwater Convention’ in 2001 is that all the states present at the vote, even those states voting against it, accepted and declared to unilaterally live up to the operational rules of the Annex. They have committed themselves politically to adhere to these basic standards”*²⁷⁸. Nonetheless, only on 2 January 2009 (more than 7 years after its adoption) the 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage finally entered into force²⁷⁹.

²⁷⁸ Maarleveld T. J., “The 2001 UNESCO-Convention on the Protection of the Underwater Cultural Heritage: Origin and Consequences”, in Hahn-Pedersen M. (edited by), *Havets kulturarv, Fiskeri- og Søfartsmuseets Studierie*, nr. 24, Esbjerg, n.d., p. 21.

²⁷⁹ As established by art. 27, the 2001 UNESCO Convention entered into force after the date of the deposit of the twentieth instrument of ratification, acceptance or approval. On the possible reasons of this delay see chapter 2, paragraph 4.

Two main factors led to the development of a new international regime aimed to protect the underwater cultural heritage.

First of all, the disparity in the legal treatment of the underwater cultural heritage compared to the land based heritage. The two dispositions on the topic provided by UNCLOS were too vague, incomplete and dated for sustaining a satisfactory international regime of protection. So, the 2001 UNESCO Convention was developed to fill this legal vacuum.

Second, the necessity to face the emerging threats represented by the extensive commercial exploitation of underwater cultural heritage and the pillaging-destructive activities committed by souvenir-divers. The 2001 UNESCO Convention sets an explicit legal framework aimed to outlaw pillaging, damaging, dispersion, commercial exploitation and destruction of underwater cultural sites.

The final aim to ensure protection of the underwater cultural heritage is reached:

- providing binding principles, precisely elaborate to face the new challenges affecting the underwater cultural heritage;
- offering a set of scientific standard rules (ethical and methodological) to regulate the activities directed to the underwater cultural heritage;
- strengthening the cooperation among states.

On the contrary, the Convention does not regulate the ownership issue and it does not change the system of powers established in the UNCLOS. Therefore, as remarked by Carducci, *"the new universal instrument stands as a lex specialis for UCH and its protection, whereas the LOS [UNCLOS] Convention remains an authoritative lex generalis for the whole law of the sea and, in principle, for all issues related to it"*²⁸⁰. This perspective is perfectly in conformity with art. 303, par. 4 of the UNCLOS according to which: *"This article is without prejudice to other international agreements and rules of international law regarding the protection of objects of an archaeological and historical nature"*²⁸¹.

²⁸⁰ Carducci (2002 a), *op. cit.*, p. 420. Therefore, despite the references to the UNCLOS provided in the 2001 UNESCO Convention, the two Conventions are autonomous juridical tools.

²⁸¹ UNCLOS (1982), *op. cit.*, art. 303, par. 4.

3.2 The text of the Convention: principles, ambiguities and clashing arguments

The goal of the 2001 UNESCO Convention: hard task or unrealistic aim?

The text of the 2001 UNESCO Convention starts with a preamble that, as underlined by O'Keefe, *"should be seen as establishing general principles to guide interpretation"*²⁸².

The preamble of the 2001 UNESCO Convention recognizes a particular importance to the underwater cultural heritage²⁸³, considering its role *"in the history of peoples, nations, and their relation with each other concerning their common heritage"*²⁸⁴ and highlighting the *"growing public interest in and public appreciation for underwater cultural heritage"*²⁸⁵. At the same time, the preamble emphasizes that this heritage is at risk due, in particular, to three main threats: *"Aware of the fact that underwater cultural heritage is threatened by unauthorised activities directed at it, and of the need for stronger measures to prevent such activities,*

Conscious of the need to respond appropriately to the possible negative impact on underwater cultural heritage of legitimate activities that may accidentally affect it,

*Deeply concerned by the increasing commercial exploitation of underwater cultural heritage, and in particular by certain activities aimed at the sale, acquisition or barter of underwater cultural heritage"*²⁸⁶.

It is considering the public relevance of the underwater cultural heritage and the growing threats affecting its safeguard that the 2001 UNESCO Convention has been primarily developed. Its goal is distinct and precise: *"to ensure and strengthen the protection of underwater cultural heritage"*²⁸⁷.

On the whole the concept of protection implies two different kind of activities: preventive measures, which intend to preclude the incurrence of potential threats; and damage control measures, that aim

²⁸² See O'Keefe P. J. (2002), *op. cit.*, p. 36.

²⁸³ For an overall analysis of the legal definition of underwater cultural heritage, provided by art. 1 of the 2001 UNESCO Convention, see chapter 1, paragraph 1.

²⁸⁴ UNESCO Convention (2001), *op. cit.*, preamble.

²⁸⁵ UNESCO Convention (2001), *last op. cit.*, preamble.

²⁸⁶ UNESCO Convention (2001), *last op. cit.*, preamble.

²⁸⁷ UNESCO Convention (2001), *last op. cit.*, art. 2, par. 1.

to stop and reduce the negative effects of already ongoing processes. The 2001 UNESCO Convention and its Annex contain both preventive and damage control dispositions in order to successfully regulate the activities directed at the underwater cultural heritage²⁸⁸.

Differently, it is beyond its powers and scopes to regulate the activities accidentally affecting the underwater cultural heritage²⁸⁹. Nonetheless, the Convention, at art. 5, states that “*each State Party shall use the best practicable means at its disposal to prevent or mitigate any adverse effects that might arise from activities under its jurisdiction incidentally affecting underwater cultural heritage*”²⁹⁰. In other words, as emphasized by O’Keefe, “*a balance has to be struck between continuation of those activities and protection of the underwater cultural heritage*”²⁹¹. Considering the difficulties to reach this balance, a high level of flexibility is granted to states parties in attaining the goal sets in this article. First of all, article 5, making reference to “*best practicable means at its disposal*”, does not require to its state parties the adoption of measures beyond their means. Moreover, this statement seems to accept that similar challenges may be faced differently considering the resources, technologies and qualified workers available in each state. Second, this article points out the objective to “*prevent or mitigate*” the adverse effects of these activities. While preventive measures may be planned to skip any negative effect on the underwater cultural heritage, mitigating measures may reduce the negative impact of these activities, but without completely stopping them. Despite its evident limits, this solution was probably the best political compromise achievable during the negotiation of the Convention.

States are the main responsible organisms for the protection and enhancement of this heritage (there is not an international organization with the power to protect the underwater cultural heritage wherever located). However, this nationalistic approach is framed within a

²⁸⁸ According to art. 1, par. 6 activities directed at underwater cultural heritage means “*activities having underwater cultural heritage as their primary object and which may, directly or indirectly, physically disturb or otherwise damage underwater cultural heritage*”. UNESCO Convention (2001), *last op. cit.*, art. 1, par. 6.

²⁸⁹ Article 1, par. 7 defines activities incidentally affecting underwater cultural heritage as “*activities which, despite not having underwater cultural heritage as their primary object or one of their objects, may physically disturb or otherwise damage underwater cultural heritage*”. UNESCO Convention (2001), *last op. cit.*, art. 1, par. 7.

²⁹⁰ UNESCO Convention (2001), *last op. cit.*, art. 5.

²⁹¹ See O’Keefe P. J. (2002), *op. cit.*, p. 65.

broader cosmopolitan view due to the acknowledgment that the underwater cultural heritage is “*an integral part of the cultural heritage of humanity*”²⁹². This consideration suggests a certain parallelism between this Convention and, from one hand, the notion of “*cultural heritage of all mankind*” introduced by the 1954 Hague Convention²⁹³; on the other, art. 149 of the UNCLOS “*archaeological and historical nature found in the Area shall be preserved or disposed for the benefit of mankind as whole*”²⁹⁴. The universal-intercultural value of the underwater cultural heritage is also highlighted by art. 2, par. 3, which states that “*States Parties shall preserve underwater cultural heritage for the benefit of humanity in conformity with the provisions of this Convention*”²⁹⁵.

Article 2, par. 4 adds that “*States Parties shall, individually or jointly as appropriate, take all appropriate measures in conformity with this Convention and with international law that are necessary to protect underwater cultural heritage, using for this purpose the best practicable means at their disposal and in accordance with their capabilities*”²⁹⁶. One of the main critic moved against the Convention by the United Kingdom is that it requires to its states parties the utopian attempt of protecting all underwater cultural sites of the world. In the view of the United Kingdom, considering the high number of sites around its coast and the estimated high costs to investigate and protect them, such goal is totally impracticable and unrealistic. In the remarks expressed prior the vote of the 2001 UNESCO Convention the UK delegate stated: “*The procedure for the protection of underwater archaeology adopted in the Annex are those which are already followed by the United Kingdom with regard to the designation of wreck sites within its territorial sea and internal waters. However, the text obliges signatory States to extend the same very high standard of protection to all underwater archaeology over 100 years old. It is estimated that there are probably about 10,000 wreck sites on the seabed under the United Kingdom territorial sea and it would neither be possible nor desirable to extend legal protection to all of them. The United Kingdom believes that is better to focus its efforts and resources on protecting the most important and unique examples of underwater cultural heritage. It would be simply impossible to*

²⁹² UNESCO Convention (2001), *op. cit.*, preamble.

²⁹³ See UNESCO, *Convention for the Protection of Cultural Property in the Event of Armed Conflict*, The Hague, 1954, preamble, ref. <http://unesdoc.unesco.org/images/0008/000824/082464mb.pdf>, last access 22/08/2012.

²⁹⁴ UNCLOS (1982), *op. cit.*, art. 149.

²⁹⁵ UNESCO Convention (2001), *op. cit.*, art. 2, par. 3.

²⁹⁶ UNESCO Convention (2001), *last op. cit.*, art. 2, par. 4.

enforce the application of the rules in the Annex to every one of the thousand of wreck sites”²⁹⁷. Officially this is one of the main reasons why UK has not ratified yet the 2001 UNESCO Convention.

However, this critic is probably based on an erroneous interpretation of the Convention. In the sphere of the “*all appropriate measures*” must be included both legislative and administrative solutions. This means that imposing the respect of the 2001 UNESCO Convention is already a fundamental step toward the protection of this heritage.

Moreover, art. 2 par. 4 of the Convention explicitly requires to its states parties to take all appropriate measures to protect the underwater cultural heritage, but according to the resources and capabilities at their disposal. This consideration implies some relevant consequences.

First, each state party may autonomously decide how to dislocate the resources directed to protect the underwater cultural heritage. In the last years, for example, several states have directed a relevant amount of funds to construct advanced databases of their national underwater sites, while others, on the contrary, have preferred to invest most of their resources in the investigation of specific sites.

Second, protecting the underwater cultural heritage does not mean to likewise treat all sites. Differently, the competent authorities have the task to identify and apply the most appropriate method considering the specific conditions of a site and the resources available for its management. Therefore, as already stated by Firth, “*‘Protecting’ and ‘Designating’ are not synonymous; the Convention refers to ‘protection’, not to ‘designation’. The Convention does not preclude significance-based management of sites*”²⁹⁸.

Third, the measures adopted in one state may be unfeasible in other states due to a lack of resources, tools or skilled people. For this reason the Convention sustains also the development of a system of cooperation that, reducing the technological, monetary and know-how

²⁹⁷ Remarks Prior to Vote during Debates in Commission IV on Culture (29 October 2001, 31st Session of the General Conference, UNESCO), reported in Garabello R. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Before and After the 2001 UNESCO Convention*, Publications on Ocean Development, Vol. 41, Martinus Nijhoff Publishers, Leiden, 2003, pp.251-252.

²⁹⁸ Firth A., “Underwater Cultural Heritage off England: character and significance”, in Yorke R. A. (edited by), *Protection of underwater cultural heritage in international waters adjacent to UK*, proceedings of the JNAPC 21st anniversary seminar, Burlington House November 2011, The Nautical Archaeology Society, Portsmouth, 2011, p. 20.

gap among states, may strengthen the protection of the underwater cultural sites wherever located.

Therefore, the 2001 UNESCO Convention invites states parties to do their best in the protection of the underwater cultural heritage, but being aware of the high costs and the limited resources usually available.

Cooperation is the key: joint efforts to solve shared problems

The 2001 UNESCO Convention, at article 2, sets out a list of essential principles aimed to regulate and strength the protection of the underwater cultural heritage.

To begin with, the Convention considers the cooperation among states parties as a “key tool” for solving the problems that negatively affect the underwater cultural heritage protection and management. The importance to cooperate is immediately stated in the preamble *“believing that co-operation among States, international organizations, scientific institutions, professional organizations, archaeologists, divers, other interested parties and the public at large is essential for the protection of underwater cultural heritage”* and highlighted in art. 2, par. 2 *“State Parties shall co-operate in the protection of underwater cultural heritage”*²⁹⁹. This provision has its origin in the general duty to cooperate already established by art. 303, par. 1 of the UNCLOS. Using the verb *“shall”* this paragraph seems to make *“compulsory”* the cooperation among states parties. Article 6, 19 and 21 express more in details how this system of cooperation must be structured³⁰⁰.

Article 6, par. 1 encourages the negotiation of new bilateral, regional or multilateral agreements (as well as the development of the existing one) aimed to protect specific underwater cultural sites. However, *“all such agreements shall be in full conformity with the provisions of this Convention and shall not dilute its universal character. States may, in such*

²⁹⁹ UNESCO Convention (2001), *op. cit.*, art. 2, par. 2.

³⁰⁰ Actually, the “coordinating state” mechanism for the management of the underwater cultural heritage in the EEZ, on the Continental Shelf and in the Area is the core of the entire system of cooperation established by the 2001 UNESCO Convention. However, the author has preferred to analyze the “coordinating state” system in a specific section dedicated to the management of the underwater cultural heritage in the different sea zones.

agreements, adopt rules and regulations which would ensure better protection of underwater cultural heritage than those adopted in this Convention"³⁰¹.

Par. 2 of the same article adds that *"the Parties to such bilateral, regional or other multilateral agreements may invite States with a verifiable link, especially a cultural, historical, or archaeological link, to the underwater cultural heritage concerned to join such agreements"*³⁰². This provision was requested by those states with a long historical tradition of "maritime power" like, for example, Spain, France, UK and the Netherlands. The concept of "verifiable link" seems related to the "preferential rights" introduced by art. 149 of the UNCLOS (even if, in such circumstance, art. 149 was making reference only to underwater cultural sites discovered in the Area). The 2001 UNESCO Convention does not offer a definition of "verifiable link". This lack makes problematic its precise interpretation because, as highlighted by Panayotopoulos, *"first, uncertainty remains as to who is to determine the verifiable link, and, secondly, no strict criteria have been set in order to determine which States possess a verifiable link and which does not and how their hierarchical priority is to be determined"*³⁰³. Nonetheless, this expression seems to recognize the existence of a direct connection between a potential multitude of states and a single underwater cultural site. An hypothetical example may illustrate better this interplay of interests: a commercial ship, owned by a company of the state A, is constructed in the shipyard of the state B. Once the construction is terminated the ship starts its inaugural voyage from the state C directed to state D. However, due to unfortunate events, it finally sinks in the territorial water of a state E. After hundreds of years the wreck of this ship is discovered. From that moment, all the states that have been involved in the "short existence" of this ship could, theoretically, declare an interest in being consulted/involved in the management of this site. Thus, the 2001 UNESCO Convention suggests the extension of bilateral, regional and multilateral agreements to all those states with a verifiable link to a site.

Article 6, par. 3 concludes underling that *"this Convention shall not alter the rights and obligations of States Parties regarding the protection of sunken vessels, arising from other bilateral, regional or multilateral agreements concluded before its adoption, and, in particular, those that are in conformity*

³⁰¹ UNESCO Convention (2001), *op. cit.*, art. 6, par. 1.

³⁰² UNESCO Convention (2001), *last op. cit.*, art. 6, par. 2.

³⁰³ Panayotopoulos J. M. (2009), *op. cit.*, p. 49.

with the purposes of this Convention”³⁰⁴. So, the date of adoption of the Convention, which is 2nd November 2001, is a turning point. The agreements entered into force before such date are not affected by the 2001 UNESCO Convention. On the contrary, after that date, states parties can negotiate and sign only agreements which principles are in conformity with the 2001 UNESCO Convention.

Different examples of bilateral, regional and international agreements could be quoted. A well-known example of bilateral agreement is the *Agreement between The Netherlands and Australia Concerning Old Dutch Shipwrecks* signed in 1972³⁰⁵. From one hand the Netherlands claimed to be the successor of the Dutch “Vereenigde Oostindische Compagnie” (V.O.C.) and, therefore, that it had title over the wrecked assets and vessels owned by such company. On the other hand, four of these shipwrecks were found lying in the territorial waters of Australia which, consequently, declared its interest in their management. The *Agreement between The Netherlands and Australia Concerning Old Dutch Shipwrecks* converted a potential situation of clash into a system of cooperation. According to art. 1 of this agreement “*The Netherlands, as successor to the property and assets of the V.O.C., transfers all its right, title and interest in and to wrecked vessels of the V.O.C. lying on or off the coast of the State of Western Australia and in and to any articles thereof to Australia which shall accept such right, title and interest*”³⁰⁶. In response of this concession Australia “*shall make no claim on the Netherlands for reimbursement of any cost incurred in searching... or in recovering any artifact from those vessels*”³⁰⁷ and it “*recognizes that the Netherlands has a continuing interest, particularly for historical and other cultural purposes, in articles recovered from any of the vessels referred to in article 1 of this Agreement*”³⁰⁸. A Committee was then instituted to determine the disposition and subsequent ownership of the artifacts recovered and an Arrangement was settled up providing guiding principles for the Committee. Among the principle established in the Arrangement there was the request to equally distribute the artifacts recovered to

³⁰⁴ UNESCO Convention (2001), *op. cit.*, art. 6, par. 3.

³⁰⁵ On this agreement see, for example, Johnson C., “The Agreement between Australia and the Netherlands Concerning Old Dutch Shipwrecks”, in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002.

³⁰⁶ Australia and The Netherlands, *Agreement between The Netherlands and Australia Concerning Old Dutch Shipwrecks*, N.D., 1972, art. 1.

³⁰⁷ Australia and The Netherlands (1972), *last op. cit.*, art. 3.

³⁰⁸ Australia and The Netherlands (1972), *last op. cit.*, art. 4.

museums both of the Netherlands and Australia. At such time, these states agreed that this was the best solutions for the management of the recovered artifacts (even if it caused their dispersion). But, on 2010, the government of the Netherlands has transferred all the objects of the Dutch V.O.C. collection in its possession to Australia. In the words of the Dutch Ambassador Willem Andreae *“Repatriating the objects to Australia is an expression of the close cooperation between the Australian and Netherlands’ governments... The transfer of this unique collection also makes sense from a scientific and practical point of view... Rather than dividing the objects, the materials will be kept as one collection, as close as possible to the original resting place. An integrated collection will also enable more extensive research in this important area of maritime archaeology”*³⁰⁹.

Differently, in 2003, the Mediterranean coastal countries attempted to develop a regional agreement on the protection of the underwater cultural heritage³¹⁰. In the final round table of the International Conference on “Cooperation in the Mediterranean for the Protection of the Underwater Cultural Heritage” the Italian delegation presented a tentative draft Agreement. Based on the 2001 UNESCO principles, the draft Agreement proposed even more advanced measures of protection and cooperation, for example, completely excluding the application of Salvage Law and Law of Finds, suggesting the development of “Specially Protected Areas of Mediterranean Cultural Importance” and proposing the creation of an International Museum of Mediterranean Underwater Cultural Heritage. However, no further progress have been made to negotiate and conclude this agreement³¹¹.

Finally, an example of multilateral agreement is the *Agreement Concerning the Shipwrecked Vessel RMS Titanic*. This agreement was negotiated and approved on 5 January 2000 by the four main states

³⁰⁹ See: <http://www.environment.gov.au/minister/farrell/2010/mr20101109.html>, last access 02/05/2012.

³¹⁰ Two years before, in 2001, the same countries adopted the “Declaration on the Submarine Cultural Heritage of the Mediterranean Sea” also called Declaration of Syracuse. In this Declaration they jointly agree to study the possibility of adopting a regional convention on this issue. See Beurier J-P., “Commentaire de la Déclaration de Syracuse sur le pstrimoine culturel sous-marin de la Mer Méditerranée”, in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002.

³¹¹ See European Commission – EuropeAid Cooperation Office, *Study of the current status of ratification, implementation and compliance with maritime agreements and conventions applicable to the Mediterranean Sea Basin. With a specific focus on the ENPI South Partner Countries*, Regional Report Part 2, December 2009, p. 40.

culturally linked to the Titanic tragedy: US, UK, France and Canada. It aims to confer to the Titanic wreck site the status of memorial dedicated to “those men, women and children who perished”, recognizing to this site an “exceptional international importance having a unique symbolic value”³¹². Among the provisions introduced by these agreements there are: a preservation *in situ* approach, the conservation of the recovered artifacts as a project collection, the preference for non-intrusive techniques of analysis and the prohibition to disturb any human remains. Regrettably, to date, this agreement has not yet entered into force.

Article 19 concerns the cooperation and information-sharing among states parties. According to art. 19, par. 1 “States Parties shall co-operate and assist each other in the protection and management of underwater cultural heritage under this Convention, including, where practicable, collaborating in investigation, excavation, documentation, conservation, study and presentation of such heritage”³¹³. Different international projects show how the collaboration among experts and research centers of different states may strengthen the investigation and management of the underwater cultural heritage. One of the most successful case is, for example, the project denominated MoSS (Monitoring, Safeguarding and Visualizing North-European Shipwreck Sites). The MoSS is a three years research project, funded by the European Community Culture 2000 Program, that has been focused on the investigation, protection and management of four shipwrecks: the 17th century merchant vessel BurgZand Noord 10 wreck in the Netherlands, the early 14th century Darsser Cog in Germany, the paddle steamer Eric Nordewall (which sank in 1856) in Sweden and the merchant vessel called Vrouw Maria (which sank in 1771) in Finland. This international project has been successfully developed through the collaboration of several institutions like: the Maritime Museum of Finland (Finland), the Mary Rose Archaeological Service Ltd. (UK), the Netherlands Institute for Ship and Underwater Archaeology (The Netherlands), the Center for Maritime Archaeology (Denmark), the Archaeological State Museum of Mecklenburg-Vorpommern (Germany), and the Södertörns Högskola University (Sweden)³¹⁴. Thus, the MoSS represents an important pilot-project, showing the beneficial effects of the international cooperation.

³¹² See Agreement Concerning the Shipwrecked Vessel RMS Titanic, London, 2000, art. 2.

³¹³ UNESCO Convention (2001), *last op. cit.*, art. 19, par. 1.

³¹⁴ For more information see the MoSS official web site: <http://www.mossproject.com>.

The same article 19, at par. 2 and 4, underlines the importance to develop an appropriate information-sharing system. The creation of national inventories is probably the first step for achieving this aim. For this reason several states have, in recent years, invested considerable resources on this issue. Valid examples are the Italian Archeomar project³¹⁵ or the Estonian ShipWher project³¹⁶. In the future, the organization of a unique international geo-database, containing the main information and the position of all the underwater cultural sites of the globe, could be a solution for strengthening the information-sharing system. A first attempt in this direction may be considered the Machu (Managing Cultural Heritage Underwater) project. This program, developed from 2006 to 2009, proposed a first-draft GIS database containing information about the underwater cultural sites located close to the coasts of seven states (Portugal, United Kingdom, Belgium, Netherland, Germany, Poland and Sweden)³¹⁷. However, for the moment, the priority is the development of appropriate, complete and compatible national databases.

Article 19, par. 3 highlights another important aspect: *“information shared between States Parties, or between UNESCO and States Parties, regarding the discovery or location of underwater cultural heritage shall, to the extent compatible with their national legislation, be kept confidential and reserved to competent authorities of States Parties as long as the disclosure of such information might endanger or otherwise put at risk the preservation of such underwater cultural heritage”*³¹⁸. So, from one hand, the information about the underwater cultural heritage must be shared and made available for the public as underlines in several parts of the Convention; on the other hands, other data could be kept confidential if their diffusion may endanger or put at risk the sites themselves. The exact position of a site, for example, could be kept confidential (at least for a certain period of time) whereas there is a reliable risk of looting. On the contrary, other information (such as, for example, the typology of the discovered shipwreck or the period of time in which it has been probably constructed) could be immediately spread to the public.

³¹⁵ See the web site <http://www.archeomar.it/index.php>.

³¹⁶ See the web site <http://www.muinas.ee/shipwher-1>. Moreover, a list of different national databases is suggested in the web-site: <http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/the-underwater-heritage/databases/>.

³¹⁷ For more information check the web page <http://www.machuproject.eu/>.

³¹⁸ UNESCO Convention (2001), *op. cit.*, art. 19, par. 3.

Article 21 deals with the training in underwater archaeology: “*States Parties shall co-operate in the provision of training in underwater archaeology, in techniques for the conservation of underwater cultural heritage and, on agreed terms, in the transfer of technology relating to underwater cultural heritage*”³¹⁹. Here again the Convention requires states parties to cooperate on three aspects:

- training in underwater archaeology;
- techniques for conservation of underwater cultural heritage;
- transfer of technology relating to underwater cultural heritage.

In the last years, several educational programs and professional courses in underwater archaeology (and conservation) have been developed thank to the collaboration among institutes located in different countries. On 2012, the International Center for Underwater Archaeology in Zadar (Croatia) has organized, for example, a course in underwater archaeology in collaboration with the UNESCO office in Venice (Italy)³²⁰. Another good example is the Asia-Pacific Regional Capacity-Building Program that has been developed in Thailand through the financial support of the Royal Government of Norway. This program aims to train students from Asia and the Pacific in underwater archaeology and conservation professions³²¹. A third example is the AusAID-Flinders University Intensive Program in Underwater Cultural Heritage Management (Australia) which has involved 11 mid-career professionals from the Asia-Pacific region in a 6 week training program aimed to strengthen their qualified capacity and leadership in the management and protection of the underwater cultural heritage³²². Concerning the transfer of technology, this practice usually occur on the base of specific trade/loan agreements. As a result, article 21 adds the sentence “*on agreed terms*” in order to qualify the cooperation related to the transfer of technology.

³¹⁹ UNESCO Convention (2001), *op. cit.*, art. 21.

³²⁰ For more information check the web site: <http://icua.hr/en>.

³²¹ For more info see the web-site: http://www.unescobkk.org/culture/uch/capacity-building/?utm_medium=twitter&utm_source=dlvr.it. See also Staniforth M., “Collaboration is the key: Developing field and work skills in collaboration with government, museum and commercial underwater cultural heritage organizations”, in Radić Rossi I., Gaspari A. and Pydyn A. (edited by), *Proceedings of the 13th Annual Meeting of the European Association of Archaeologists (Zadar, Croatia, 18-23 September 2007). Session: Underwater Archaeology*, Croatian Archaeological Society, Zagreb, 2008.

³²² See Staniforth M., “The Flinder University Intensive Program in Underwater Cultural Heritage Management”, *Proceedings of the Inaugural Asia-Pacific Regional Conference on Underwater Cultural Heritage*, Asian Academy for Heritage Management, Manila, 2011.

The prohibition to commercially exploit the underwater cultural heritage: a substantial rejection of historic salvage operations

One of the most important principle of the 2001 UNESCO Convention is established in art. 2, par. 7. According to this paragraph “*underwater cultural heritage shall not be commercially exploited*”³²³. This statement reflects a principle already introduced by the ICOMOS Charter on the Protection and Management of the Underwater Cultural Heritage, according to which “*commercial exploitation of underwater cultural heritage for trade or speculation is fundamentally incompatible with the protection and management of the heritage*”³²⁴. So, in contrast with the historic salvage approach (aimed to return the salvaged goods to the stream of commerce), this Convention does not perceive the underwater cultural heritage as a commercial commodity, but as an outstanding cultural asset that deserve protection and enhancement. As a result, it is absolutely prohibited the recovery of the underwater cultural heritage for the purpose of making profits (selling or bartering it)³²⁵.

This principle clearly shows the structural incompatibility between the 2001 UNESCO Convention and the Historic Salvage Law regime. However, the performance of salvage operations is not absolutely precluded by the 2001 Convention. According to art. 4 “*any activity relating to underwater cultural heritage to which this Convention applies shall not be subject to the law of salvage or law of finds, unless it:*

- a) *is authorized by competent authorities, and*
- b) *is in full conformity with this Convention, and*
- c) *ensures that any recovery of the underwater cultural heritage achieves its maximum protection*”³²⁶.

It is interesting to note that art. 4 makes reference to “*activities relating to underwater cultural heritage*”. As emphasized by O’Keefe “*‘Relating to’ would appear to be wider than ‘directed at’ but narrower than ‘incidentally affecting’*. It would seem necessary to have a causal connection between the activity and the heritage for ‘relating to’ to apply”³²⁷.

³²³ UNESCO Convention (2001), *op. cit.*, art. 2, par. 7.

³²⁴ International Council on Monuments and Sites (ICOMOS), Charter on the Protection and Management of the Underwater Cultural Heritage, Sofia, 1996, preamble.

³²⁵ Rule 2 of the Annex adds further details about how this disposition must be interpreted. See the analysis of Rule 2 at chapter 2, paragraph 3, section 3.

³²⁶ UNESCO Convention (2001), *op. cit.*, art. 4.

³²⁷ See O’Keefe P. J. (2002), *op. cit.*, p. 63.

Moreover, art. 4 links the application of salvage law to the respect of the three cumulative (“and”) conditions (concerning the law of finds seems that a fourth implicit condition should be required: that the relic has no owner or it has been abandoned).

According to the first condition, salvage operations must be authorized by competent authorities. This means that: first, salvage companies cannot undertake any action on a site before getting an authorization by the competent authorities; second, each state party must identify an internal competent authority and it must develop a system, in harmony with the principles of the 2001 UNESCO Convention, for granting/denying permission to any activities related to this heritage.

On the base of the second condition, salvage operations must be in full conformity with the principles established in the Convention. This may appear a controversial issue because there is an intrinsic incompatibility between the salvage policies and the 2001 UNESCO Convention principles. As already underlines, salvage operations move from the consideration that the underwater cultural heritage kept *in situ* is implicitly in danger. According to *salvors*, in such location this heritage risk of being lost, destroyed by its surrounding environment and pillaged by treasure-hunters. Therefore, the goal of salvage operations is to recover as much valuables artifacts as possible obtaining, in return, a monetary award. This perspective clearly clashes with the *in situ* preservation approach and the prohibition to commercially exploit the underwater cultural heritage promoted by the 2001 UNESCO Convention. So, the Convention does not officially preclude operations of salvage, but, practically, they cannot be justified by hypothetical unproved risks and neither they can be proposed for private financial aims.

As requested by the third condition, any recovery of artifacts must guarantee their maximum protection. Consequently, consistent archaeological techniques must be adopted recovering the submerged artifacts and, after that, measures of long-term protection and conservation must be applied. The compatibility between salvage operations and the costly preservation of underwater cultural heritage appears questionable.

In conclusion, the respect of these three parameters seems able to virtually exclude activities based on the Salvage Law or the Law of Finds. Therefore, as stated by O’Keefe, “*although Article 4 is worded such*

*that the law of salvage and the law of finds can apply in specified circumstances, if those circumstances are indeed satisfied, there will be little left of the original concepts*³²⁸.

Historic salvage companies have, as obvious, strongly criticized this provision. In their view, eradicating the historic salvage regime, no private company will risk anymore its capital for searching and recovering underwater cultural goods. Consequently, a major number of sites will remain unexplored and at risk (of looting or natural destruction)³²⁹. Grenier indirectly answers to this critic reminding that “*an inventory of all the wrecks who have been subject to excavation or salvage since the invention of aqualung (autonomous deep-sea diving suit) half a century ago demonstrates that no historic wreck has ever been saved by commercial contractors or treasure hunters; only archaeologists have succeeded in this task. At the very most, treasure hunters have “saved” objects of commercial value at the cost of the destruction of an archaeological context, which is the real danger*”³³⁰. Consequently, as stated by Rau, “*in view of the inappropriateness of salvage law as a means of protecting underwater cultural heritage, its general rejection, as stipulated in article 4 of the UNESCO Convention, therefore, is certainly to be applauded*”³³¹.

The other basic principles of the 2001 UNESCO Convention: preservation *in situ*, respect of human remains and responsible non-intrusive public access

Article 2, par. 5 of the Convention establishes that “*the preservation in situ of underwater cultural heritage shall be considered as the first option before allowing or engaging in any activities directed at this heritage*”³³². This provision aims to promote a methodological approach based on two considerations: first, that the preservation *in situ* is an available solution; and, second, that there is not always the necessity to recover the cultural artifacts discovered underwater. As already stated, the

³²⁸ See O’Keefe P. J. (2002), *last op. cit.*, p. 64.

³²⁹ See Kingsley S., “Underwater Cultural Heritage & UNESCO in New Orleans: An Introduction”, *Odyssey Marine Exploration Papers* 13, 2010, p. 5 and Stemm G., “Protecting the Past: UNESCO Versus the Private Collector”, *Odyssey Marine Exploration Papers* 13, 2010, pp. 13-16.

³³⁰ Grenier R. (2006), *op. cit.*, p. XI.

³³¹ Rau M. (2002), *op. cit.*, p. 406.

³³² UNESCO Convention (2001), *op. cit.*, art. 2, par. 5.

Convention supports the preservation *in situ* approach considering elements such as:

- the importance of the context in the scientific investigation;
- the progressive stabilization of a site within its surrounding environment;
- the authenticity of the experience *in situ*;
- the costs and risks related to the recovery;
- the availability of reliable techniques of preservation *in situ*.

Therefore, according to the 2001 UNESCO Convention, the preservation *in situ* must be considered as the first option available. Overall, this policy has achieved a wide consensus among the archaeologists (despite some isolated criticism)³³³. Differently, it has been seriously condemned by salvage historic companies. In the view of Sinclair, for example, “one of the most outrageous statements that the UNESCO Convention advocates is that *in situ* preservation should be considered as a first option. This runs counter to what the overwhelming reality of shipwreck situations demand”³³⁴.

However, as stressed by several UNESCO documents and papers, “first option” is not synonymous of “only option” or “preferred option”³³⁵. Consequently, the recovery of artifacts is admitted when it can provide “a significant contribution to protection or knowledge or enhancement of underwater cultural heritage”³³⁶.

Art. 2 par. 6 reminds that, once recovered, underwater cultural heritage “shall be deposited, conserved and managed in a manner that ensures its long-term preservation”³³⁷. As a result, a series of costs must be considered before excavating a site. Moreover, as suggested in the preamble, “considering that survey, excavation and protection of underwater cultural heritage necessitate the availability and application of special scientific

³³³ See, for example, Castro F., “Archeologist, Treasures Hunters, and the UNESCO Convention on the Protection of the Underwater Cultural Heritage: a Personal Viewpoint”, *Odyssey Marine Exploration Papers* 13, 2010.

³³⁴ Sinclair J., “Threats to Underwater Cultural Heritage – Real & Imagined”, *Odyssey Marine Exploration Papers* 13, 2010, pp. 17-18.

³³⁵ See also Guerin U., “Objectives, benefits to States Parties, and implementation of the UNESCO Convention on Underwater Cultural Heritage (2001)”, in Yorke R. A. (edited by), *Protection of underwater cultural heritage in international waters adjacent to UK*, proceedings of the JNAPC 21st anniversary seminar, Burlington House November 2011, The Nautical Archaeology Society, Portsmouth, 2011.

³³⁶ UNESCO Annex (2001), *op. cit.*, Rule 1.

³³⁷ UNESCO Convention (2001), *op. cit.*, art. 2, par. 6.

*methods and the use of suitable techniques and equipment as well as a high degree of professional specialisation, all of which indicate a need for uniform governing criteria*³³⁸. The Rules of the Annex to the 2001 UNESCO Convention have been specifically elaborated as shared professional standards for the archaeological investigations on the underwater cultural heritage.

Article 2, par. 9 asserts that “*States Parties shall ensure that proper respect is given to all human remains located in maritime waters*”³³⁹. The respect of human remains is an already affirmed principle in the archaeologists’ code of ethics. Scientific investigations on human remains are not excluded, but “*research activities shall avoid the unnecessary disturbance of human remains and always handle them with the due respect*”³⁴⁰. Therefore, in some cases, the human remains have been left untouched *in situ*, in others they have been reburied after analysis³⁴¹, while, in others again, they have been recovered, conserved and then reverently exhibited or stored³⁴².

Article 2, par. 10 highlights that “*responsible non-intrusive access to observe or document in situ underwater cultural heritage should be encouraged to create public awareness, appreciation, and protection of the heritage except where such access is incompatible with its protection and management*”³⁴³. The underwater cultural heritage belongs to public and, therefore, a public responsible non-intrusive access to this heritage must be guarantee and promoted. Only in exceptional cases (for the safety of the site, the surrounding natural environment or of the visitors) the public access can be restricted or denied. Awareness, appreciation and protection are interlinked factors and, as such, they must be cohesively promoted³⁴⁴.

³³⁸ UNESCO Convention (2001), *op. cit.*, preamble.

³³⁹ UNESCO Convention (2001), *last op. cit.*, art. 2, par. 9.

³⁴⁰ UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 5.

³⁴¹ This practice has been adopted, for example, in the reburial of the remains of sailors discovered on the Mary Rose wreck and on the HMS Swift.

³⁴² The remains of some mariners have been exhibited, for example, in the Vasa Museum and in the Western Australian Maritime Museum in order to explain the results of the related osteological and archaeological researches.

³⁴³ UNESCO Convention (2001), *op. cit.*, art. 2, par. 10.

³⁴⁴ The preamble of the 2001 UNESCO Convention clearly states: “*Convinced of the public’s right to enjoy the educational and recreational benefits of responsible non-intrusive access to in situ underwater cultural heritage, and the value of public education to contribute to awareness,*

Article 20 proposes some dispositions about the creation of public awareness. It states that *“each State Party shall take all practicable measures to raise public awareness regarding the value and significance of underwater cultural heritage and the importance of protecting it under this Convention”*³⁴⁵. Dissipating the knowledge about the underwater cultural heritage value and significance is a key aspect in order to strengthen its protection. Educational programs, museum exhibitions, publications in scientific and commercial reviews are all measures that should be adopted to develop public awareness. More information are explained and made understandable for the public, higher will be the public comprehension of underwater cultural heritage and, therefore, the chance to involve more people (directly or indirectly) in its protection. Unfortunately, despite the proclaimed good intentions and the obligation imposed by art. 20, states often do not invest enough money in the promotion of this heritage³⁴⁶.

The delicate relation between the 2001 UNESCO Convention and the system of powers established in the UNCLOS

One of the most debated aspects during the negotiation of the 2001 UNESCO Convention was its juridical relation with the 1982 UNCLOS. During the drafting some states (Norway, UK, Russia, etc.) required a clear link between the two Convention considering the ‘delicate balance’ reached in the UNCLOS, while others (mainly Turkey and Venezuela) expressed the preference for a completely independent Convention.

On the base of these considerations, the 2001 UNESCO Convention was adopted as an independent legal instrument, but explicitly stating in the text its conformity with the division of maritime zones regulated by UNCLOS.

Therefore, article 2, par. 11 asserts that *“no act or activity undertaken on the base of this Convention shall constitute grounds for claiming, contending or disputing any claim to national sovereignty or jurisdiction”*³⁴⁷. In other words, nothing authorized through this Convention is aimed to affect

appreciation and protection of that heritage”. UNESCO Convention (2001), *last op. cit.*, preamble.

³⁴⁵ UNESCO Convention (2001), *last op. cit.*, art. 20.

³⁴⁶ On the relevance of promotion check chapter 1, paragraph 4.

³⁴⁷ UNESCO Convention (2001), *op. cit.*, art. 2, par. 11.

the existing national sovereignty or jurisdiction. Consequently, this Convention does not authorize its states parties to claim any change in the regime of maritime zones established in 1982 UNCLOS.

This aspect is highlighted even more explicitly by art. 3, which states that *“nothing in this Convention shall prejudice the rights, jurisdiction and duties of States under international law, including the United Nations Convention on the Law of the Sea. This Convention shall be interpreted and applied in the context of and in a manner consistent with international law, including the United Nations Convention on the Law of the Sea”*³⁴⁸. Thus, the Convention is an independent international agreement, but:

- it must be interpreted and applied in a manner consistent with the UNCLOS (and the international law);
- it does not modify the system of rights, jurisdiction and duties agreed in the UNCLOS (and, in general, by the international law).

Therefore, as highlighted by Rau, *“the decisive point is that the instrument seeks to establish new rules regarding the protection of maritime cultural property without infringing upon the basic principles governing the existing international law of the sea”*³⁴⁹.

This solution was proposed as an acceptable compromise able to satisfy the different positions expressed by states' delegates during the negotiations. But, unfortunately, some states still (erroneously) fear that the provisions expressed in the 2001 UNESCO Convention could undermine the “delicate balance” of powers and responsibilities achieved through the 1982 UNCLOS.

So, to these days, three different interpretations emerge on this issue:

- 41 states have ratified the 2001 UNESCO Convention considering it in full conformity with the UNCLOS system;
- other states like, for example, Norway, USA and Russia, have not ratified the 2001 UNESCO Convention because they do not consider it in full conformity with the UNCLOS regime;
- some states such as, Turkey and Venezuela, have not ratified the 2001 UNESCO Convention disapproving its link to the UNCLOS Convention.

³⁴⁸ UNESCO Convention (2001), *last op. cit.*, art. 3.

³⁴⁹ Rau M. (2002), *op. cit.*, p. 433.

As underline by Dromgoole speaking about the second group of states *“although small in number, the failure of the Convention to gain the support of these States is extremely significant. This is because these States whose nationals and flag vessels have the resources and technological capability to undertake deep water search and recovery operation... [Thus] the support of these States is vital if the Convention is to be really effective in controlling activities directed at UCH”*³⁵⁰. Therefore, in the last years, UNESCO has dedicated efforts and resources in the clarification of the content of the 2001 UNESCO Convention to those states which have not ratified it yet. Thanks to this activity of promotion, the number of states parties to this Convention may grow in coming years.

The decision to do not deal with title and sovereign immunity: a strategic choice or a missed opportunity?

A further critic moved against the 2001 UNESCO Convention is that it may undermine title and sovereign immunity of sunken state vessels and aircrafts³⁵¹. However, art. 2, par. 8 states that nothing in the 2001 UNESCO Convention *“shall be interpreted as modifying the rules of international law and State practice pertaining to sovereign immunities”*³⁵².

Therefore, on one side, states parties must apply the 2001 UNESCO Convention on underwater cultural sites irrespective of who is their owner (public or private entity) and regardless the purposes they have been constructed and used for (military, commercial, etc.); on the other side, this Convention does not affect in any way the title and sovereign immunity over the sunken properties. Consequently, these issues must be judged according, first of all, to (eventual) recognized principles of customary international law³⁵³ and, second, to the domestic legislation of each state.

³⁵⁰ Dromgoole S. (2011), *op. cit.*, p. 26.

³⁵¹ Article 1, par. 7 defines State vessels and aircrafts as *“warships, and other vessels or aircraft that were owned or operated by a State and used, at the time of sinking, only for government non-commercial purposes, that are identified as such and that meet the definition of underwater cultural heritage”*³⁵¹. UNESCO Convention (2001), *op. cit.*, art. 1, par. 7. The 2001 UNESCO Convention, however, does not provide a definition of warship. For such definitions it is, therefore, necessary to make reference to the UNCLOS Convention, art. 29. See chapter 2, paragraph 1.

³⁵² UNESCO Convention (2001), *last op. cit.*, art. 2, par. 8.

³⁵³ The existence of principle of international customary law related to the abandonment and the sovereign immunity issue is still under debate. See below chapter 2, par. 5.

The choice to do not treat title and sovereign immunity of sunken state vessels and aircrafts in the text of the 2001 UNESCO Convention was made taking into account the divergent and hardly compatible positions expressed by states on these issues. Positively, this approach could make easier the ratification of some states particularly demanding on these issues. Negatively, it has been lost an opportunity to clarify these intricate legal aspects³⁵⁴.

The sole reference in the 2001 UNESCO Convention to sovereign immunity is at art. 13. But this article regards the duties of active state vessels and aircrafts (not the sunken one), in respect to the eventual discovery of underwater cultural sites. Essentially this article, respecting the secrecy of the operations that involved military forces, does not oblige warships and other governmental ships and military aircrafts to report the discovery of underwater cultural sites when:

- they operate for non-commercial purposes;
- in their normal mode of operations³⁵⁵;
- without being engaged in activities directed at underwater cultural heritage.

These three conditions are cumulative³⁵⁶.

However, this concession is partially balanced by the second part of the article. It requires to states parties to adopt appropriate measures in order to “*comply, as far as is reasonable and practicable*” with the reporting and notification system established in the 2001 UNESCO Convention³⁵⁷.

³⁵⁴ On this issue is particularly interesting the comment of the delegate from The Netherlands prior to the adoption of the 2001 UNESCO Convention. In his words: “*this determined ambiguity could give State parties the opportunity to interpret elements of the text on a manner that would be the most suitable for them. However, this is clearly in contradiction of a primary objective of treaties, like the realization of uniformity in law*”. Remark reported in Garabello R. and Scovazzi T. (2003), *op. cit.*, p. 244.

³⁵⁵ This condition excludes, for example, ex-military submarines assigned to the exploration of the sea bed for scientific purposes.

³⁵⁶ Interestingly, during the negotiation of the article Greece remarked that private company could use warship to act as treasure hunters or salvage companies. For avoiding this risk the three parameters proposed inside the article have been fixed as cumulative conditions. On this consideration see Garabello R. (2003), *op. cit.*, p. 156.

³⁵⁷ UNESCO Convention (2001), *last op. cit.*, art. 13. At present the author does not know any measure implemented by states parties to respect this provision.

The protection of the underwater cultural heritage in the different sea zones: the problem to equally balance rights and duties of the interested states through “constructive ambiguities”

From article 7 to article 12 the text of the Convention deals with the protection of the underwater cultural heritage in the different sea zones established by the UNCLOS (territorial sea, contiguous zone, Exclusive Economic Zone, continental shelf and area).

Article 7 regulates the underwater cultural heritage management in internal waters, archipelagic waters and territorial sea. In accordance with art. 7, par. 1 *“States Parties, in the exercise of their sovereignty, have the exclusive right to regulate and authorize activities directed at underwater cultural heritage in their internal waters, archipelagic waters and territorial sea”*³⁵⁸. This is a basic rule of international customary law and a substantial restatement of art. 2, par. 1 of the UNCLOS.

In addition, states parties must require (and ensure) that any activity directed to underwater cultural heritage located in their internal waters, archipelagic waters and territorial sea will be conducted in conformity with the principles and Rules of the 2001 UNESCO Convention³⁵⁹.

These provisions (art. 7, par. 1 and 2) were easily approved during the negotiation process. On the contrary, a statement of paragraph 3 blew up the debate. Art. 7, par. 3 affirms that *“within the archipelagic waters and territorial sea, in the exercise of their sovereignty and in recognition of a general practice among States, States Parties, with a view to cooperating on the best methods of protecting State vessels and aircraft, should inform the flag State Party to this Convention and, if applicable, other States with a verifiable link, with respect to the discovery of such identifiable State vessels and aircraft”*³⁶⁰. This paragraph considers the circumstance in which the wreck of a state vessel or aircraft is located within the archipelagic waters or territorial sea of another state party. It aims to recognize and conciliate the interests of the coastal state with those of the flag state, without providing any consideration on the controversial aspects of the sovereign immunity.

³⁵⁸ UNESCO Convention (2001), *op. cit.*, art. 7, par. 1.

³⁵⁹ UNESCO Convention (2001), *last op. cit.*, art. 7, par. 2.

³⁶⁰ UNESCO Convention (2001), *last op. cit.*, art. 7, par. 3.

However, the adoption of the verb “*should inform*” rather than “*shall inform*” caused the strong reaction of some states (like, for example, UK and US) that accused such sentence to be in conflict with the sovereign immunity principle. In the words of the UK delegates “*the current text erodes the fundamental principles of customary international law, codified in UNCLOS, of Sovereign Immunity which is retained by a State’s warship and vessels and aircraft used for non commercial service until expressly abandoned by that State. The text purports to alter the fine balance between the equal, but conflicting, rights of Coastal and Flag States, carefully negotiated in UNCLOS, in a way that is unacceptable to the United Kingdom*”³⁶¹. Despite the UK protests (and the request to reformulate this sentence), the majority of the other states rejected any more demanding provision.

In any case, this criticism seems based on a misinterpretation of this “constructive ambiguity”. Article 7 must be read in conformity with art. 2, par. 8, according to which, nothing in the 2001 UNESCO Convention “*shall be interpreted as modifying the rules of international law and State practice pertaining to sovereign immunities*”³⁶² as well as with art. 3, which states that “*nothing in this Convention shall prejudice the rights, jurisdiction and duties of States under international law, including the United Nations Convention on the Law of the Sea*”³⁶³. Therefore, the provision expressed by art. 7 par. 3 does not clash with already existing rights, but it simply encourages the cooperation between coastal states and flag states. As Guerin says “*Within their archipelagic waters and territorial sea, States Parties seeking cooperation on the best methods of protecting State vessels and aircraft, should inform any Flag State Party to the Convention of the discovery of such identifiable State vessels or aircraft. That does not mean that any other rights of Flag States, such as the right to expect respect of a requirement for its authorisation, is infringed. If such a right exists, it is not altered by the Convention*”³⁶⁴. Moreover, in respect of the cooperation principle (art. 2, par. 2), the request to inform the flag state seems more than a simple possibility.

³⁶¹ Remark of the United Kingdom reported in Garabello R. and Scovazzi T. (2003), *op. cit.*, p. 251. Actually during the negotiation of the Convention the U.K. and Russian Federation proposed a more restrictive condition: “*State vessels and aircraft shall not be recovered without the collaboration of the flag State, unless they have been expressly abandoned in accordance with the laws of that State*”. But the General Conference rejected this proposal. See Carducci (2003), *op. cit.*, p. 205.

³⁶² UNESCO Convention (2001), *op. cit.*, art. 2, par. 8.

³⁶³ UNESCO Convention (2001), *last op. cit.*, art. 3.

³⁶⁴ Guerin U. (2011), *op. cit.*, p. 37.

Article 8 concerns the underwater cultural heritage in the contiguous zone. According to this article *“without prejudice to and in addition to Articles 9 and 10, and in accordance with Article 303 paragraph 2 of the United Nations Convention on the Law of the Sea, States Parties may regulate and authorize activities directed at underwater cultural heritage within their contiguous zone. In so doing, they shall require that the Rules be applied”*³⁶⁵. This version of the article was approved despite the negative opinion of Turkey, which sustained that *“contiguous zone might cause serious problems in areas where the coasts are opposite to each other and no delimitation by an agreement of the maritime areas exists between the concerned coastal States”*³⁶⁶.

Mainly, article 8 establishes that, whereas a state has claimed a contiguous zone, it has the power to regulate and authorize the activities directed to the underwater cultural heritage in that zone, requiring the respect of the Rules provided in the Annex to the 2001 UNESCO Convention. Interestingly, it also states that this provision is in conformity with article 303, par. 2 of the UNCLOS that, however, makes reference only to the *removal* of objects of archaeological and historical nature. Therefore, this article is structured on a “constructive ambiguity”: the coastal states’ power to regulate the activities directed at underwater cultural heritage is not limited to the removal of artifacts, but it is extended to other aspects like, for example, the adoption of measures aimed to face the potential risks of damaging and destruction.

Articles 9 and 10 focus on the protection of the underwater cultural heritage in the EEZ and on the continental shelf.

Article 9, in particular, regulates the reporting and notification system for the underwater cultural sites located in the EEZ and on the continental shelf. According to its paragraph 1: *“all States Parties have a responsibility to protect underwater cultural heritage in the exclusive*

³⁶⁵ UNESCO Convention (2001), *op. cit.*, art. 8.

³⁶⁶ Comment of the Turkey delegation on art. 8 reported in Garabello R., “The Negotiating History of the Provisions of the Convention on the Protection of the Underwater Cultural Heritage”, in Garabello R. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Before and After the 2001 UNESCO Convention*, Publications on Ocean Development, Vol. 41, Martinus Nijhoff Publishers, Leiden, 2003, p. 137.

economic zone and on the continental shelf in conformity with this Convention. Accordingly:

- a) *a State Party shall require that when its national, or a vessel flying its flag, discovers or intends to engage in activities directed at underwater cultural heritage located in its exclusive zone or on its continental shelf, the national or the master of the vessel shall report such discovery or activity to it;*
- b) *in the exclusive economic zone or on the continental shelf of another State Party:*
 - i. *States Parties shall require the national or the master of the vessel to report such discovery or activity to them and to that other State Party;*
 - ii. *alternatively, a State Party shall require the national or master of the vessel to report such discovery or activity to it and shall ensure the rapid and effective transmission of such reports to all other States Parties”³⁶⁷.*

First of all, this article expresses a general responsibility for all states parties to protect the underwater cultural heritage in the EEZ and on the continental shelf. Then, it distinguishes two different circumstances: when a national or flag vessel of “State A” discovers, or intends to engage in activities on, an underwater cultural site located in the EEZ or on the continental shelf of the same “State A” or of another “State B”.

In the first case, treated by art. 9, par 1 (a), the flag state acts also as coastal state. So, a vessel flying the flag of the “State A” which discover (or intend to engage an activity on) an underwater cultural site in the EEZ or on the continental shelf of the same “State A” shall (logically) report such discovery (or activity) to the competent authorities of the “State A”.

In the second case, ruled by art. 9, par. 1 (b), the flag state is different from the coastal state. In this case, article 9 proposes two alternative solutions to manage this circumstance. The first solution is controversial and it can be interpreted in two different ways. According to the first interpretation, the “coastal State B” will require to the vessel flying the flag of “State A” to report to the competent authorities of this “State B” the discovery, or the intended activity, of an underwater cultural site located in its EEZ or on its continental shelf. At the same time, the “flag State A” will require to the vessel flying its flag such

³⁶⁷ UNESCO Convention (2001), *op. cit.*, art. 9, par. 1.

report too. In the words of O’Keefe “‘States Parties’, since in the plural, would thus be interpreted as requiring each individual State Party to act regarding discoveries or activities on its own continental shelf or in its EEZ, as well as requiring the State of the flag of the vessel and of the nationality of the team leader to report to each of these States respectively”³⁶⁸. Differently, according to the second interpretation, it is only the “flag State A” that will require to its national or the master of the vessel flying its flag to report such discovery or activity to it and to the “coastal State B”. In this case the coastal state “would be nothing more than the recipient of the report”³⁶⁹.

On the base of the alternative solution proposed by par. 1 (b) (ii), the “flag State A” will require to its national, or the master of the vessel flying its flag, to report such discovery or activity to it and then the competent authorities of “State A” will rapidly and effectively transmit such report to all other states parties. This second solution seems less practical, requiring the immediate communication of the report to all states parties.

The schema below may simplify the comprehension of the different combination proposed by this system of responsibility.

REFERENCE IN ARTICLE 9	FLAG STATE	COASTAL STATE	STATE(S) REQUIRING THE REPORT	STATE(S) RECEIVING THE REPORT
Par.1 (a)	A	A	A	A
Par. 1 (b) (i) Interpretation 1	A	B	A+B	A+B
Par. 1 (b) (i) Interpretation 2	A	B	A	A+B
Par. 1 (b) (ii)	A	B	A	A → All states parties

8. The reporting and notification system in the EEZ and on the Continental Shelf

On the base of art. 9, par. 3 “A State Party shall notify the Director-General of discoveries or activities reported to it under paragraph 1 of this Article”³⁷⁰ and then, according to par. 4, “the Director-General shall promptly make available to all States Parties any information notified to him under paragraph 3 of this Article”³⁷¹.

³⁶⁸ O’Keefe (2002), *op. cit.*, p. 82.

³⁶⁹ O’Keefe (2002), *last op. cit.*, p. 82.

³⁷⁰ UNESCO Convention (2001), *op. cit.*, art. 9, par. 3.

³⁷¹ UNESCO Convention (2001), *last op. cit.*, art. 9, par. 4.

Finally, as stated by par. 5, “Any State Party may declare to the State Party in whose exclusive economic zone or on whose continental shelf the underwater cultural heritage is located its interest in being consulted on how to ensure the effective protection of that underwater cultural heritage. Such declaration shall be based on a verifiable link, especially a cultural, historical or archaeological link, to the underwater cultural heritage concerned”³⁷². The idea of states expressing an interest on the base of a verifiable cultural link is recurrent in the Convention³⁷³. Par. 5 introduces the possibility that a state party may express an “*interest in being consulted*” on the protection of the site: the indications about how to regulate such consultation are defined by art. 10 of the 2001 UNESCO Convention.

There is still one missing aspect that should be clarified. What happen if the coastal state is not a state party of the 2001 UNESCO Convention? Should it be informed of the discovery or of the intended activities on a cultural heritage site located in its EEZ or in its continental shelf? Art. 9 of the 2001 UNESCO Convention does not make any mention about this possible circumstance. Similarly, the general principle of cooperation, defined by art. 2, par. 2, makes only reference to states parties. However, the whole text of the 2001 UNESCO Convention can be interpreted as an attempt to protect at international level the underwater cultural heritage through a system based on the natural and proactive cooperation among states. Therefore, despite the absence of an explicit provision in the text, states parties should also inform any involved non-states parties of the discovery or intended activities on a cultural heritage site located in their EEZ or in their continental shelf, respecting in this way the final purpose of the Convention.

Article 10 outlines the protection of the underwater cultural heritage in the EEZ and on the continental shelf. Article 10, par. 1 establishes its scope of application affirming that “*no authorization shall be granted for an activity directed at underwater cultural heritage located in the exclusive economic zone or on the continental shelf except in conformity with the provisions of this Article*”³⁷⁴.

According to par. 2 “*a State Party in whose exclusive economic zone or on whose continental shelf underwater cultural heritage is located has the right to prohibit or authorize any activity directed at such heritage to prevent*

³⁷² UNESCO Convention (2001), *last op. cit.*, art. 9, par. 5.

³⁷³ See above the analysis of art. 6, par. 2.

³⁷⁴ UNESCO Convention (2001), *op. cit.*, art. 10, par. 1.

interference with its sovereign rights or jurisdiction as provided for by international law including the United Nations Convention on the Law of the Sea"³⁷⁵. Therefore, a state party has the right to prohibit or authorize activities directed at underwater cultural heritage located in its EEZ or on its continental shelf, but consistent with the sovereign rights and jurisdictional powers established by the UNCLOS. Among such rights there are, in particular, the conservation and management of the living marine resources in the EEZ, and the exploration and exploitation of the natural resources located on the continental shelf. Therefore, considering that "*underwater cultural heritage is often intimately associated with natural resources... [Than] the power given the coastal State under Paragraph 2 is broad and can be used to provide extensive protection to underwater cultural heritage*"³⁷⁶.

Art. 10, pars. 3 defines the complex system of the "coordinating state" specifically developed to protect the underwater cultural heritage in the EEZ and on the Continental Shelf. According to par. 3 "*whether there is a discovery of underwater cultural heritage or it is intended that activity shall be directed at underwater cultural heritage in a State Party's exclusive economic zone or on its continental shelf, that State Party shall:*

- a) *consult all other States Parties which have declared an interest under Article 9 paragraph 5 on how best to protect the underwater cultural heritage;*
- b) *coordinate such consultations as 'Coordinating State', unless it expressly declares that it does not wish to do so, in which case the States Parties which have declared an interest under Article 9 paragraph 5 shall appoint a Coordinating State*"³⁷⁷.

Thus, in the protection of the underwater cultural heritage in the EEZ, or on the continental shelf, the coastal state plays a key role being automatically elected as "coordinating state". The "coordinating state" must direct the consultations among the states parties that have declared an interest toward the considered site. If the coastal state refuses this role, the states parties that have declared an interest toward the concerned site will confer to another state the status of "coordinating state". The text of the article does not explain the role/impact of the consultation among states in respect to the final

³⁷⁵ UNESCO Convention (2001), *last op. cit.*, art. 10, par. 2.

³⁷⁶ O'Keefe (2002), *op. cit.*, p. 90.

³⁷⁷ UNESCO Convention (2001), *op. cit.*, art. 10, par. 3.

decision (further “constructive ambiguity”). But, as highlighted by O’Keefe, it seems reasonable that “the coastal State cannot ignore the results of consultation if it disagrees with them”³⁷⁸.

Par. 4 introduces another controversial issue. This paragraph states that “without prejudice to the duty of all States Parties to protect underwater cultural heritage by way of all practicable measures taken in accordance with international law to prevent immediate danger to the underwater cultural heritage, including looting, the Coordinating State may take all practicable measures, and/or issue any necessary authorizations in conformity with this Convention and, if necessary prior to consultations, to prevent any immediate danger to the underwater cultural heritage, whether arising from human activities or any other cause, including looting. In taking such measures assistance may be requested from other States Parties”³⁷⁹. Therefore, the “coordinating state”, in case of impending danger, may act to prevent such peril without consulting the other states parties that have expressed an interest toward the management of the concerned site.

Some states, (like, for example, UK, Russia and USA), have expressed a negative opinion about this provision affirming that it extends the coastal states’ sovereignty rights, threatening in this way the delicate equilibrium of powers achieved through the UNCLOS Convention. In their views, the consensus of the flag state must be obtained prior to the authorization of any operation directed to the underwater cultural heritage located in the EEZ or on the continental shelf. In their view, this practice is, in particular, unquestionable dealing with sunken state vessels³⁸⁰.

However, this interpretation of art. 10, par. 4 seems unfounded due to several considerations. First of all, art. 3 of the 2001 UNESCO Convention states that “nothing in this Convention shall prejudice the rights, jurisdiction and duties of States under international law, including the United Nations Convention on the Law of the Sea”³⁸¹. Therefore, art. 10, par. 4 does not introduce a new coastal states’ power. Moreover, as affirmed by Dromgoole, “in so far as [the compulsory request of an authorization of the flag state] represents the position under general

³⁷⁸ O’Keefe (2002), *op. cit.*, p. 91.

³⁷⁹ UNESCO Convention (2001), *op. cit.*, art. 10, par. 4.

³⁸⁰ According to these states, the sunken state vessels, irrespective of place and time in which they sank, benefit of the sovereign immunity right.

³⁸¹ UNESCO Convention (2001), *op. cit.*, art. 3.

international law, that position must be maintained under the UNESCO Convention"³⁸².

Second, art. 10, par. 6 adds that *"in coordinating consultations, taking measures, conducting preliminary research and/or issuing authorizations pursuant to this Article, the Coordinating State shall act on behalf of the States Parties as a whole and not in its own interest. Any such action shall not in itself constitute a basis for the assertion of any preferential or jurisdictional rights not provided for in the international law, including the United Nations Convention on the Law of the Sea"*. Thus, the same article 10 expressly states that this provision must be applied respecting the UNCLOS system and that the "coordinating state" must act as delegate of the whole states parties and not for its own interest.

Third, the right of the "coordinating state" to operate before the consultations with the other interested states parties is merely an exception determined by circumstances of immediate danger. According to art. 10, par. 7: *"Subject to the provisions of paragraphs 2 and 4 of this Article, no activity directed at State vessels and aircraft shall be conducted without the agreement of the flag State and the collaboration of the Coordinating State"*³⁸³. Presumably, circumstances of immediate danger could be considered, for example, the sudden exposition of a site previously covered by sediments or episodes of recurring looting. In these cases the consultation process may require too long times, while rapid solutions are vital for the survival of these sites. Therefore, as already remarked by Guérin, *"such a right to prevent an immediate danger to a site is of immense practical value"*³⁸⁴. A similar position is also sustained by Rau: *"from a pragmatic point of view, article 10 par. 4 makes perfect sense: in times of immediate danger to underwater cultural heritage, a cooperative system would certainly not be very effective; under these circumstances, the idea of using the coastal state, being normally the nearest state, suggests itself"*³⁸⁵.

Finally, as properly affirmed by Aznar-Gomez, when a "coordinating state" acts in order to prevent an immediate danger (like, for example,

³⁸² Dromgoole (2011), *op. cit.*, p. 27.

³⁸³ UNESCO Convention (2001), *op. cit.*, art. 10, par. 7.

³⁸⁴ Guérin U. (2011), *op. cit.*, p. 34.

³⁸⁵ Rau M. (2002), *op. cit.*, p. 419.

an unauthorized salvage) on a sunken state vessel “the legal position of the flag State is therefore not affected but reinforced”³⁸⁶.

Article 10, par. 5 defines the tasks of the “coordinating state”. Precisely, “The Coordinating State:

- a) shall implement measures of protection which have been agreed by the consulting States, which include the Coordinating State, unless the consulting States, which include the Coordinating State, agree that another State Party shall implement those measures;
- b) shall issue all necessary authorizations for such agreed measures in conformity with the Rules, unless the consulting States, which include the Coordinating State, agree that another State Party shall issue those authorizations;
- c) may conduct any necessary preliminary research on the underwater cultural heritage and shall issue all necessary authorizations therefor, and shall promptly inform the Director-General of the results, who in turn will make such information promptly available to other States Parties”³⁸⁷.

Interestingly, the Convention lets to the consulting states the possibility to choose a state different from the “coordinating state” to fulfill these duties: factors such as, for example, the technological tools available or the experience of their archaeologists in the planned activities may determine this choice.

While articles 9 and 10 are related to the reporting, notification and protection of the underwater cultural heritage in the EEZ and on the continental shelf, articles 11 and 12 deal with the same issues, but for what concern the underwater cultural heritage located in the Area.

Article 11 is structured in a similar way to art. 9. Therefore, only the main differences between these two articles will be here emphasized.

To begin with, article 11, par. 1 establishes a general duty to protect the underwater cultural heritage in the Area in conformity with this Convention and art. 149 of the UNCLOS. Then, the paragraph proceeds defining the reporting and notification system in the area. Differently from art. 9, the entire system is here simplified and reduced to only one

³⁸⁶ Aznar-Gómez M. J., “Treasure hunters, sunken state vessels and the 2001 UNESCO Convention on the Protection of Underwater Cultural Heritage”, *The International Journal of Marine and Coastal Law*, Vol. 25, No. 2, 2010, p. 226.

³⁸⁷ UNESCO Convention (2001), *op. cit.*, art. 10, par. 5.

circumstance: when a vessel flying the flag of a state party discovers or intends to operate on an underwater cultural site located in the Area. In this case, the competent authorities of the states parties must require to their national, or masters of the vessels, to communicate to them eventual discoveries or the will to perform activities on the concerned sites.

The unique innovative element introduced by par. 2 and 3 is that states parties have to notify the discoveries and the intended activities in the Area not only to the UNESCO Director-General, but also to the International Seabed Authority, which is the organization that control the activities in the Area.

Finally, according to article 11, par. 4 those states that may proof a verifiable cultural, historical or archaeological link to a site located in the Area may declare to the UNESCO Director-General their *“interest in being consulted on how to ensure the effective protection of that underwater cultural heritage”*³⁸⁸.

Concerning the protection of the underwater cultural heritage in the Area, art. 12, par. 1 states that *“no authorization shall be granted for any activity directed at underwater cultural heritage located in the Area except in conformity with the provisions of this Article”*³⁸⁹.

Par. 2 adds that *“the Director-General shall invite all States Parties which have declared an interest under Article 11 paragraph 4 to consult on how best to protect the underwater cultural heritage, and to appoint a State Party to coordinate such consultations as the ‘Coordinating State’.* The Director-General shall also invite the International Seabed Authority to participate in such consultations”³⁹⁰. In this case the “coordinating state” is not automatically appointed, but it is nominated by the states that have expressed an interest of being consulted about the management of the concerned site. Interestingly, the appointed “coordinating state” could also be a state party that did not declare any interests on the site (but it seems more like a fictional circumstance). Moreover, the International Seabed Authority must be invited to participate in such consultations.

On the base of par. 3 *“all States Parties may take all practicable measures in conformity with this Convention, if necessary prior to consultations, to*

³⁸⁸ UNESCO Convention (2001), *last op. cit.*, art. 11, par. 4.

³⁸⁹ UNESCO Convention (2001), *last op. cit.*, art. 12, par. 1.

³⁹⁰ UNESCO Convention (2001), *last op. cit.*, art. 12, par. 2.

prevent any immediate danger to the underwater cultural heritage, whether arising from human activity or any other cause including looting"³⁹¹. Art. 12 par. 3 is comparable to art. 10, par. 4. The structure of the text is similar, but according to art. 12, par. 3 all states parties (and not only the "coordinating state") may act, prior to consultations, to prevent any immediate danger to the underwater cultural heritage. However, art. 12, par. 7 underlines that *"no State Party shall undertake or authorize activities directed at State vessels and aircraft in the Area without the consent of the flag State"*³⁹². This sentence leaves no room for misinterpretations.

The tasks of the "coordinating state" in the Area (art. 12, par. 4 and 5) are substantially the same of the "coordinating state" in the EEZ or on the continental shelf (art. 10, par. 5). It has to implement agreed measures of protection, issue all necessary authorizations and eventually conduct preliminary research on the underwater cultural heritage. As discrepancy, art. 12, par. 4 (b) states that the authorizations must be in conformity with this Convention, while art. 10, par. 5 (b) skips this consideration. Practically there are no substantial differences.

Finally, art. 12, par. 6 establishes that *"in coordinating consultations, taking measures, conducting preliminary research, and/or issuing authorizations pursuant to this Article, the Coordinating State shall act for the benefit of humanity as a whole, on behalf of all States Parties. Particular regard shall be paid to the preferential rights of States of cultural, historical and archaeological origin in respect of the underwater cultural heritage concerned"*³⁹³. Two aspects of this paragraph deserve to be considered. First, the "coordinating state", which operates on an underwater cultural site located in the Area, has to act for the benefit of humanity and on behalf of all states parties. This passage is clearly a link to the that section of the preamble that underlines the relevance of underwater cultural heritage as an integral part of the cultural heritage of humanity. Second, this provisions states that particular regard must be paid to the preferential rights of *states* with a verifiable link. So, in this section, the article speaks generally about "states" and not about "states parties": this passage may be interpreted as a wish to obtain also the cooperation of those states that have not ratified the 2001 UNESCO Convention.

³⁹¹ UNESCO Convention (2001), *last op. cit.*, art. 12, par. 3.

³⁹² UNESCO Convention (2001), *last op. cit.*, art. 12, par. 7.

³⁹³ UNESCO Convention (2001), *last op. cit.*, art. 12, par. 6.

The table below summarizes and compares the system of protection enforced in the EEZ and on the continental shelf (arts. 9-10), and in the Area (arts. 11-12).

Protection of UCH in the EEZ and on the continental shelf (arts. 9-10)	Protection of UCH in the Area (arts. 11-12)
All states parties have a responsibility to protect UCH in the EEZ and on the continental shelf (art. 9, par. 1)	All states parties have a responsibility to protect UCH in the Area, as already stated by art. 149 of the UNCLOS (art. 11, par. 1)
Different mechanisms of reporting and notification (art. 9, pars. 1-2)	One mechanism of reporting and notification (art. 11, pars. 2-3)
Notification of discoveries or intended activities to the UNESCO Director-General (art. 9, par. 3)	Notification of discoveries or intended activities to the Director-General and the International Seabed Authority (art. 11, par. 2)
Each state with a verifiable link has the right to declare its interest in being consulted on the protection of a site (art. 9, par. 5)	Each state with a verifiable link has the right to declare its interest in being consulted on the protection of a site (art. 11, par. 4)
Activities directed at UCH must not interfere with the sovereign rights or jurisdiction of coastal state (art. 10, par. 2)	Activities directed at UCH must not interfere with the “freedom of the High Sea”
The coastal state has ordinarily the role of “Coordinating State” (art. 10, par. 3)	The “Coordinating State” is appointed by those states parties that have declared an interest in being consulted (art. 12, par. 2)
The “Coordinating State” may act, prior to consultations, in order to prevent any immediate danger (art. 10, par. 4)	All states parties may act, prior to consultations, in order to prevent any immediate danger (art. 12, par. 3)
No activities directed at state vessels and aircraft without the agreement of the flag state and the collaboration of the “Coordinating State” (art. 10, par. 7)	No activities directed at state vessels and aircraft without the consent of the flag state (art. 12, par. 7)

9. Main matches and differences between the protection in the EEZ and on the continental shelf (arts. 9-10), and in the Area (arts. 11-12)

Administrative measures: when the efficiency is associated to the achievement of a wide consensus

From art. 14 to art. 18 the 2001 UNESCO Convention proposes a series of administrative measures that states parties must adopt in order to protect the underwater cultural heritage.

According to art. 14 *“States Parties shall take measures to prevent the entry into their territory, the dealing in, or the possession of, underwater cultural*

heritage illicitly exported and/or recovered, where recovery was contrary to this Convention”³⁹⁴. Three different cases are regulated by art. 14.

When:

- the underwater cultural heritage is illicitly exported and it is recovered contrary to the 2001 UNESCO Convention;
- the underwater cultural heritage is illicitly exported;
- the underwater cultural heritage is recovered contrary to the 2001 UNESCO Convention.

Article 14 imposes to states parties the adoption of measures to prevent the entry into their territory, the dealing in, or the possession of underwater cultural artifacts recovered or exported according to one of the three above mentioned circumstances. This article does not explain the meaning of illicit export, but it may interpreted as such exportations that are unlawful in respect to the enforced domestic and international law. Instead, the recovery of underwater cultural heritage may be considered contrary to the 2001 UNESCO Convention when it has not been realized in accordance with the Rules expressed by the 2001 UNESCO Convention Annex.

States parties may adopt different measures to face the illicit exportation and recovery of underwater cultural heritage: from the organization of controls by custom authorities to the entrance into force of specific domestic laws aimed to seize and to return to the legitimate owner the illegally exported cultural goods discovered in their territory. From an international point of view the ratification and enforcement of the 1970 UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property and of the 1995 UNIDROIT Convention on Stolen or Illegally Exported Cultural Object may be already considered as significant steps for meeting the requests expressed by art. 14. However, an overall efficient regime aimed to regulate the traffic of underwater cultural properties must probably go beyond the traditional treaties, embracing transnational agreements (museums – governments agreements) and operational policies like the ICOM (International Council of Museums) Code of Ethics for Museums. But this issue goes beyond the scope of this analysis³⁹⁵.

³⁹⁴ UNESCO Convention (2001), *last op. cit.*, art. 14.

³⁹⁵ On this topic see Casini L., “Italian Hours: The Globalization of Cultural Property Law”, *Jean Monnet Working Paper*, No. 11, 2010.

In the words of article 15 *“States Parties shall take measures to prohibit the use of their territory, including their maritime ports, as well as artificial islands, installations and structures under their exclusive jurisdiction or control, in support of any activity directed at underwater cultural heritage which is not in conformity with this Convention”*³⁹⁶. This article does not create a new right for coastal states, but it simply requires the implementation of an already existing power³⁹⁷. The idea of this provision is to discourage and hold back those actors that operate contrary to the provisions of the 2001 UNESCO Convention, restricting (in extreme case) their access to certain essential facilities such as, for example, fuel. However, this provision may achieve its goal only if jointly implemented by all states of a certain area. Differently, illegitimate operators may simply access to the territory of other “less virtuous” nearby states in order to obtain the facilities that they need.

According to article 16 *“States Parties shall take all practicable measures to ensure that their nationals and vessels flying their flag do not engage in any activity directed at underwater cultural heritage in a manner not in conformity with this Convention”*³⁹⁸. Article 16 imposes to states parties the implementation of legislative and administrative provisions aimed to prevent the incurrence of illicit activities generated by their nationals and vessels flying their flag. But, this article does not specifically mention which kind of measures must be adopted. Moreover, qualifying these measures as ‘*practicable*’ is a way to offer a certain flexibility, letting in the hands of states parties the identification of the proper measures to be adopted in relation to their available resources.

Article 17 specifically deals with sanctions. At par. 1, it states that *“each State Party shall impose sanctions for violations of measures it has taken to implement this Convention”*³⁹⁹. Hence, each state has a right-duty to define the nature and the amount of the sanctions (penal or administrative) for each specific case of violation (damaging, destruction and pillaging).

³⁹⁶ UNESCO Convention (2001), *op. cit.*, art. 15.

³⁹⁷ According to art. 25, par. 2 of the UNCLOS *“in the case of ships proceeding to internal waters or a call at a port facility outside internal waters, the Coastal State has also the right to take the necessary steps to prevent any breach of the conditions to which admission of those ships to internal waters or such a call is subject”*. UNCLOS (1982), *op. cit.*, art. 25, par. 2.

³⁹⁸ UNESCO Convention (2001), *op. cit.*, art. 16.

³⁹⁹ UNESCO Convention (2001), *last op. cit.*, art. 17, par. 1.

According to par. 2 “sanctions applicable in respect of violations shall be adequate in severity to be effective in securing compliance with this Convention and to discourage violations wherever they occur and shall deprive offenders of the benefit deriving from their illegal activities”⁴⁰⁰. Imposing sanctions has a double aim: first of all, to discourage any eventual illegal activity on the underwater cultural heritage; second, to punish those who have committed a violation. Sanctions must be adequate, publically well-known and regularly enforced in order to fulfill these aims.

In Italy, for example, the law 157/2009, (which ratifies the 2001 UNESCO Convention), establishes, at art. 10, penal and administrative sanctions for the violations of measures provided for by the Convention⁴⁰¹. In general, those people who do not report to the competent authorities a finding or the intention to carry out activities on underwater cultural heritage commit an offense punishable by imprisonment up to one year and the payment of a fine that can range from 300 to 3.099 €. Moreover, who trades in the Italian territory underwater cultural goods recovered through unauthorized intervention is punishable with imprisonment up to two years and the payment of a fine that can range from 50 to 500 €⁴⁰².

The adoption of adequate sanctions is a fundamental measure to fight the performance of illicit activities on the underwater cultural heritage. But, as emphasized by O’Keefe, “the difficulty is that what is an adequate sanction in one part of the world may be regarded as insignificant in another”⁴⁰³. This consideration is particularly valid in relation to the administrative sanctions. Probably, the adoption of shared international sanctions could solve this problem. But this option is hardly realizable considering: first, the enormous differences among the juridical systems of states parties; second, the probable intention of each state to align the sanctions applicable to eventual offences against the underwater cultural heritage with those applicable, in that same

⁴⁰⁰ UNESCO Convention (2001), *last op. cit.*, art. 17, par. 2.

⁴⁰¹ Italy, Legge n°157 – Ratifica ed esecuzione della Convenzione sulla protezione del patrimonio culturale subacqueo, con Allegato, adottata a Parigi il 2 Novembre 2001, e norme di adeguamento dell’ordinamento interno, Gazzetta Ufficiale n° 262 del 10 Novembre 2009, art. 10.

⁴⁰² On the topic see, for example, Frigerio A., “L’entrata in vigore in Italia della Convenzione UNESCO 2001 sulla protezione del patrimonio culturale subacqueo”, *Aedon, Rivista di arti e diritto on line*, n°2, 2010.

⁴⁰³ See O’Keefe P. J. (2002), *op. cit.*, p. 111.

territory, on archaeological and cultural sites on land. Perhaps, it is also taking into account this challenge that article 17, at par. 3, concludes stating that “*States Parties shall co-operate to ensure enforcement of sanctions imposed under this Article*”⁴⁰⁴. However, it does not provide any further indication about how this mechanism of cooperation should be enforced.

According to art. 18, par. 1 “*each State Party shall take measures providing for the seizure of underwater cultural heritage in its territory that has been recovered in a manner not in conformity with this Convention*”⁴⁰⁵. Art. 18, par. 1 must be read in relation to art. 17. Therefore, those persons, who possess an underwater cultural good illicitly recovered, not only will face an administrative and/or penal sanction for their violation, but they will be also deprived of the recovered property. This provision should act as deterrent, completely depriving the offender of its possession. As sustained by O’Keefe “*if the owner of the underwater cultural heritage raised it without conforming to the Underwater Convention, it may be able to be seized without paying compensation. On the other hand, if someone else has raised it and the owners is not involved, then compensation may have to be paid*”⁴⁰⁶. In this second case, the competent authorities will judge the good faith of the final owner considering, for example, the number of commercial transactions faced by the artifact. In any case, as already said, the regulation of the property issues is a topic outside the scope of the 2001 UNESCO Convention.

On the base of art. 18, par. 2 “*each State Party shall record, protect and take all reasonable measures to stabilize underwater cultural heritage sized under this Convention*”⁴⁰⁷. Once seized, the underwater cultural artifacts must be recorded, protected and conserved adopting the proper methods of stabilization required. Recording the seized goods is a fundamental process in order to identify the legitimate owner (if any) and to register their status before any (eventual) treatments of stabilization. Obviously, all these processes (recording, protection and conservation) require equipped structures, experts and funds in order to be executed.

Concluding, art. 18, par. 3 affirms the duty for each state party to notify to the UNESCO Director-General and any other state with a verifiable

⁴⁰⁴ UNESCO Convention (2001), *op. cit.*, art. 17, par. 3.

⁴⁰⁵ UNESCO Convention (2001), *last op. cit.*, art. 18, par. 1.

⁴⁰⁶ See O’Keefe P. J. (2002), *op. cit.*, p. 116.

⁴⁰⁷ UNESCO Convention (2001), *op. cit.*, art. 18, par. 2.

cultural, historical or archaeological link, any seizure of underwater cultural heritage, while par. 4 encourages states parties to arrange the seized goods *“for the public benefit, taking into account the need for conservation and research; the need for re-assembly of a dispersed collection; the need for public access, exhibition and education; and the interests of any State with a verifiable link, especially a cultural, historical or archaeological link, in respect of the underwater cultural heritage concerned”*⁴⁰⁸.

The organizational system and the mechanisms for solving eventual disputes: cooperation, competence and pacific settlement

Article from 22 to 24 introduce an organizational and structured system for the protection of the underwater cultural heritage.

Article 22 requires states parties to establish (or reinforce) an executive structure of competent authorities able to manage the national underwater cultural heritage as a whole (*“establishment, maintenance and updating of an inventory of underwater cultural heritage, the effective protection, conservation, presentation and management of underwater cultural heritage, as well as research and education”*⁴⁰⁹). In order to observe this provision some states parties have proposed national public bodies specifically focused on the underwater cultural heritage (for example, the Consejo de Arqueología y Subdirección de Arqueología Subaquática del Instituto Nacional de Antropología e Historia, por conducto de la Dirección General para la Organización de las Naciones Unidas de la Secretaría de Relaciones Exteriores de los Estados Unidos Mexicanos) while others have simply assigned such functions to existing units which already control cultural heritage assets (like, the Instituto Nacional de Cultura for Panama)⁴¹⁰. Positively, defining a competent authority in each state could make easier and immediate the circulation of information and communications with the UNESCO and among the competent authorities of the different states themselves.

Article 23, develops a mechanism intended to supervise the overall implementation of the 2001 Convention principles. This mechanism of control is structured up-on two different bodies. The first one is a political/executive body denominated Meeting of the States Parties,

⁴⁰⁸ UNESCO Convention (2001), *last op. cit.*, art. 18, par. 4.

⁴⁰⁹ UNESCO Convention (2001), *last op. cit.*, art. 22, par. 1.

⁴¹⁰ See the web page <http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/2001-convention/competent-authorities/>.

which is composed by the representatives of each State Party to the 2001 UNESCO Convention. According to par. 1 *“the Director-General shall convene a Meeting of States Parties within one year of the entry into force of this Convention and thereafter at least once every two years. At the request of a majority of States Parties, the Director-General shall convene an Extraordinary Meeting of States Parties”*⁴¹¹. Par. 2 and par. 3 add that *“the Meeting of States Parties shall decide on its functions and responsibilities”*⁴¹² and that *“the Meeting of States Parties shall adopt its own Rules of Procedure”*⁴¹³. The second body is an advice-giving group *“composed of experts nominated by the States Parties with due regard to the principle of equitable geographic distribution and the desirability of a gender balance”*⁴¹⁴. This group, denominated Scientific and Technical Advisory Body, must support the Meeting of the States Parties on scientific and technical issues. The topics discussed during the first three Meeting of States Parties and the main recommendations proposed by the Scientific and Technique Advisory Body in the three sessions of meetings effectuated till now will be summed up in a successive section (see paragraph 3.4).

Article 24 introduces the figure of the Secretariat for this Convention. Par. 1 states that *“The Director-General shall be responsible for the functions of the Secretariat for this Convention”*⁴¹⁵. According to art. 24, par. 2, the Secretariat plays mainly a bureaucratic/organizational role in respects to the duties arising from the 2001 UNESCO Convention: its main task is to practically organize the Meeting of States Parties and to assist the implementation of their decision. But, actually, the Secretariat is also involved in other more complex functions, working as:

- final receiver of names and addresses of the states’ competent authorities assigned to the management of the underwater cultural heritage (art. 22, par. 2);
- final receiver of the instruments of ratification, acceptance, approval or accession of/to this Convention (art. 26, par. 3);
- mediator in disputes among states parties (art. 25, par. 2);
- figure designed to the diffusion and sharing of information among states parties (for example art. 9, par. 3 and 4).

⁴¹¹ UNESCO Convention (2001), *last op. cit.*, art. 23, par. 1.

⁴¹² UNESCO Convention (2001), *last op. cit.*, art. 23, par. 2.

⁴¹³ UNESCO Convention (2001), *last op. cit.*, art. 23, par. 3.

⁴¹⁴ UNESCO Convention (2001), *last op. cit.*, art. 23, par. 4.

⁴¹⁵ UNESCO Convention (2001), *last op. cit.*, art. 24, par. 1.

Article 25 concerns the resolution of eventual disputes among states parties regarding the interpretation or application of the 2001 UNESCO Convention. To date, there has been no need to recur to the mechanism provided by art. 25.

At first stage, states parties have to settle eventual disputes concerning the interpretation or application of the 2001 UNESCO Convention through negotiations (the process through which the involved parties try to find a shared solution to solve their dispute) or other peaceful methods (art. 25, par. 1).

In the event that, within “*a reasonable period of time*”, the negotiation process should fail, states parties may jointly agree to solve the issue recurring to the mediation of UNESCO (art. 25, par. 2)⁴¹⁶. Mediation is a method in which two disputing parties agree to appoint a neutral third party (in this case UNESCO) to help them finding a shared solution.

Par. 3 establish that “*if mediation is not undertaken or if there is no settlement by mediation, the provisions relating to the settlement of disputes set out in Part XV of the United Nations Convention on the Law of the Sea apply mutatis mutandi to any dispute between States Parties to this Convention concerning the interpretation or application of this Convention, whether or not they are also Parties to the United Nations Convention on the Law of the Sea*”⁴¹⁷. Whether mediation fails or it is not undertaken as an option, the states parties must try to settle their disputes considering one of the solutions proposed by Part XV of the UNCLOS.

States which did not ratified the UNCLOS strongly criticized this provision and, as reminded by Garabello, “*Turkey and Venezuela justified their negative vote to the Convention, both at the Meeting of Experts and at the General Conference, on the system of settlement of disputes chosen: not being part to UNCLOS, they considered it unacceptable*”⁴¹⁸. Despite these protests the provision of art. 25, par. 3 is valid whether the states parties have or have not ratified the UNCLOS.

⁴¹⁶ As qualification of the negotiations, paragraph 2 refers to “*a reasonable period of time*”, but without making additional specification about the expiration of the time-limit. In this way a high flexibility (in terms of time) is grant in order to peacefully solve eventual disputes.

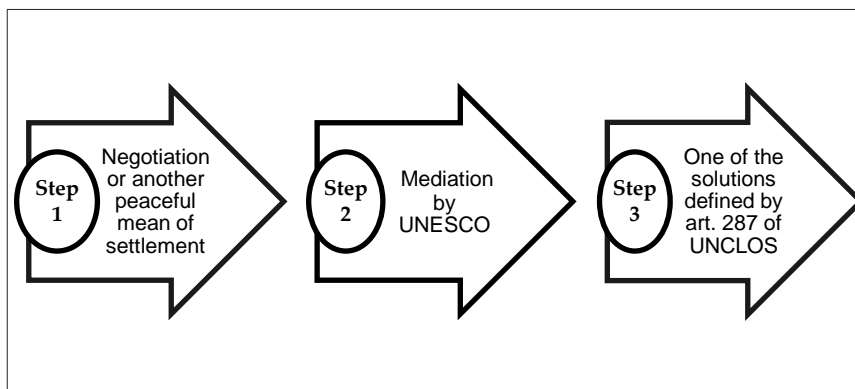
⁴¹⁷ UNESCO Convention (2001), *last op. cit.*, art. 25, par. 3.

⁴¹⁸ Garabello R. (2003), *op. cit.*, p. 172.

The procedures stressed in Part. XV of the UNCLOS to settle eventual disputes are:

- any peaceful means chosen by the parties (art. 280);
- conciliation (art. 284);
- one of the procedures defined by art. 287, which are:
 - o the International Tribunal for the Law of the Sea;
 - o the International Court of Justice;
 - o an arbitral tribunal constituted in accordance with the Annex VII of UNCLOS;
 - o a special arbitral tribunal constituted in accordance with Annex VIII of UNCLOS for one or more of the categories of disputes specified therein.

Art. 25, par. 3 is applied only when peaceful settlements failed, therefore the solutions suggested by art. 280 and 284 should not be considered anymore as options available. So, states parties may settle their disputes choosing one of the procedures listed by art. 287. In the first two cases the disputes will be solved through a sentence passed by the International Tribunal for the Law of the Sea or by the International Court of Justice. In the other two cases the dispute will be solved “outside” the courts through an arbitration. In the arbitration the parties concerned agree to appoint a neutral third party (the “arbitral tribunal”) whose decision will be binding for them.



10. Schema on the settlement of disputes according to art. 25

When states sign, ratify or accede to the UNCLOS Convention they have to choose by declaration one or more of the four procedures listed in art. 287 to settle eventual disputes concerning the interpretation or

the application of the UNCLOS. According to art. 25, par. 4 of the 2001 UNESCO Convention such chosen procedures will be also used to solve eventual disputes related to the interpretation or application of the Convention on the Protection of Underwater Cultural Heritage.

However, the same paragraph 4 grants to states parties the possibility to choose different procedures for the settlement of those disputes specifically related to the underwater cultural heritage. For example, a State A may choose to settle the disputes concerning the UNCLOS Convention recurring to the International Tribunal for the Law of the Sea while, on the contrary, it may decide to solve eventual disputes related to the 2001 UNESCO Convention recurring to an arbitral tribunal constituted in accordance with Annex VII of UNCLOS.

Finally, par. 5 contains technical details about the selection of the means for the settlement of disputes in the circumstance in which a state is party to the 2001 UNESCO Convention, but it is not party to the UNCLOS. For the moment only two states have ratified the 2001 UNESCO Convention without being part of the UNCLOS Convention: they are Ecuador and Palestine.

Strengths and weaknesses of the 2001 UNESCO Convention

The 2001 UNESCO Convention, without modifying the equilibrium of powers defined in the UNCLOS, offers a regime specifically focused on the protection of the underwater cultural heritage. This system is structured on certain core elements, which are:

- the obligation to protect the underwater cultural heritage in all the different maritime zones;
- the preservation *in situ* of the underwater cultural heritage as first option;
- the prohibition to commercially exploit the underwater cultural heritage;
- the development of an international system of cooperation;
- the respect of human remains;
- the creation of public knowledge and awareness through a responsible non-intrusive access to the underwater cultural heritage.

In general, the text of the Convention is well-structured, complete and appropriate for its main purpose. However, it is not flawless.

First of all, the system for protecting the underwater cultural heritage in the EEZ, on the continental shelf and in the Area has some evident limits. In particular, the mechanism of notifications is excessively articulated and the consultations among the interested states parties, without a precise time framework and a pre-arranged decisional mechanism, may turn out to be slow and inefficient bureaucratic tools. Nevertheless, compared to the past, *“this system will make it easier to take effective action against treasure hunting in territories outside the national jurisdiction of a coastal State, without extending or diminishing State sovereignty rights”*⁴¹⁹. Moreover, despite the protests of some states, the 2001 UNESCO Convention opportunely confers to the coordinating state the power to intervene, prior to consultations, for the safeguarding of a site (located in the EEZ or on the continental shelf of a state) in case of immediate danger. From a pragmatic viewpoint this is a rational and reasonable solution for protecting the underwater cultural heritage against unauthorized activities.

Second, the repeated use of ‘constructive ambiguities’ occasionally compromise the transparency of some dispositions. Moreover, the doubt is that they have not really achieved their primary goal: to provide compromise solutions that, avoiding the most thorny issues, could satisfy a wide range of states. Consequently, it has been probably lost a good chance to clarify important issues such as, for example, the legal value of title and the sovereign immunity on sunken state vessels. But, perhaps, this lack could also be interpreted as an attempt to overturn the way of looking at this heritage. In the view of Maarleveld *“respect for heritage is made independent of ownership, as are decisions on protection and management. This means that ownership need not be determined before any action can be taken... Ownership does not define heritage significance; it will be taken into account and used in resolving management issues, but meaning come first. Under the Convention, context and integrity have priority over ownership”*⁴²⁰. This position is also sustained by Alves: *“the basic purpose of this Convention focuses not on issues of possession, but on the safeguarding of underwater cultural heritage and its universal enjoyment as the scientific and cultural heritage of humanity, as its memory and as a paradigmatic non-renewable resource”*⁴²¹. From a legal perspective, this presumed attempt to assign to the

⁴¹⁹ Koschtial U. (2009), *op. cit.*, p. 67.

⁴²⁰ Maarleveld T. J. (2009), *op. cit.*, p. 57.

⁴²¹ Alves F. J. S., “Underwater Archaeological Trails”, *Museum International*, Vol. 60, Issue 4, February 2009, p. 89.

ownership issue a marginal role compared to the overall aim of protecting the underwater cultural heritage seems quite utopist. Nevertheless, this position truly reflects the essential spirit on which it was built this Convention.

Finally, the limited consensus reached, to date, by the 2001 UNESCO Convention is problematic. The system built up through this Convention requires a large (possibly global) consensus for maximizing its efficacy. This condition, for the moment, has been only partially achieved. Nonetheless, from one hand, the international appreciation of the Rules established in the Annex and, on the other, the efforts of the UNESCO staff aimed to spread a correct interpretation of the 2001 UNESCO Convention may favor a gradual grow of the number of states parties, as well as a progressive dissemination of its main principles even in those states which have not ratified (or do not want to ratify) this Convention.

3.3 The Rules of the Annex: a shared model of underwater archaeology

The 36 Rules of the Annex to the 2001 UNESCO Convention propose a set of practical archaeological standards and ethical criteria aimed to regulate the activities directed at underwater cultural heritage. Article 33 explicitly states that the Rules of the Annex are an integral part of the 2001 UNESCO Convention and, therefore, they are binding for states parties.

The basic methodological and ethical principles regulating the activities directed at the underwater cultural heritage

The first 8 Rules of the Annex contain general principles, most of which have been already considered analyzing the articles of the Convention.

Rule 1 states that *“the protection of underwater cultural heritage through in situ preservation shall be considered as the first option. Accordingly, activities directed at underwater cultural heritage shall be authorised in a manner consistent with the protection of that heritage, and subject to that requirement may be authorised for the purpose of making a significant contribution to protection or knowledge or enhancement of underwater cultural heritage”*⁴²².

⁴²² UNESCO Annex (2001), *op. cit.*, Rule 1.

Therefore, the preservation *in situ* must be considered as the first option in the management of the underwater cultural heritage for the reasons already quoted⁴²³. However, this provision “is nevertheless clear about the fact that objects may be recovered for a good cause, so it does not categorically prohibit recuperation”⁴²⁴.

According to Rule 2: “The commercial exploitation of underwater cultural heritage for trade or speculation or its irretrievable dispersal is fundamentally incompatible with the protection and proper management of underwater cultural heritage. Underwater cultural heritage shall not be traded, sold, bought or bartered as commercial goods. This Rule cannot be interpreted as preventing:

- a) the provision of professional archaeological services or necessary services incidental thereto whose nature and purpose are in full conformity with this Convention and are subject to the authorisation of the competent authorities;
- b) the deposition of underwater cultural heritage, recovered in the course of a research project in conformity with this Convention, provided such deposition does not prejudice the scientific or cultural interest or integrity of the recovered material or the result in its irretrievable dispersal; is in accordance with the provisions of Rules 33 and 34; and is subject to the authorization of the competent authorities”⁴²⁵.

Rule 2 expresses an ethical principle. In the underwater cultural heritage management the public interest must prevail on the private one. As a result, trade, speculation and irretrievable dispersion are incompatible prerogatives with the protection and management of underwater cultural heritage for the public benefit. Evidently this position totally clash with the salvage companies’ perspective which consider the underwater cultural heritage as a commercial commodity that can be sold in the market (further reflections on this issue will be successively presented in par. 6).

Moreover, this Rule, at point a and b, adds two important considerations. At point (a) it underlines that the recourse to professional archaeological services is absolutely not contrary (as obvious) to this provision despite it may involve a payment for a service. According to point (b), the same consideration is true for the

⁴²³ See chapter 1, par. 4, pp. 31-32 and chapter 2, par. 3, p. 100.

⁴²⁴ Guérin U. (2010), *op. cit.*, p. 208.

⁴²⁵ UNESCO Annex (2001), *op. cit.*, Rule 2.

deposition⁴²⁶ of the underwater cultural heritage in those circumstances in which:

- the related research project is in conformity with the Convention;
- the deposition process does not prejudice the scientific or cultural interest;
- it does not threat the managing of the artifacts as a unique collection;
- it respects Rules 33 and 34 (related to the organization of project archives);
- it is authorized by the competent authorities of a state.

Nothing in this Rule prevents the development of a sustainable management of underwater cultural heritage. This prerogative may include the possibility to generate economic benefits, for example, imposing a ticket to access a site or producing and distributing documentaries, photos or books.

Rule 3 states that *“activities directed at underwater cultural heritage shall not adversely affect the underwater cultural heritage more than is necessary for the objectives of the project”*⁴²⁷. Any activities directed at underwater culture heritage produce an impact. Rule 3 asks to those who are authorized to undertake these activities to do not cause unnecessary disturbance to the investigated site. In other terms, as explained by the UNESCO Manual, *“in activities at underwater cultural heritage with the objective of contributing to protection, knowledge or enhancement:*

- *impact should be proportioned to the objective,*
- *impact should not be greater than necessary, and*
- *impact and observations should be documented”*⁴²⁸.

Therefore intrusive approaches are not totally banned, but they must be adequately justified according to the goals of the project.

⁴²⁶ As underlined by O’Keefe *“‘Deposition’ is not defined but would seem to mean placing into the care of some body whether natural or legal”*. O’Keefe P. J. (2002), *op. cit.*, p. 160. This interpretation is confirmed by the UNESCO Manual according to which deposition *“addresses the transfer of a collection to an appropriate repository”*. UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 2.

⁴²⁷ UNESCO Annex (2001), *op. cit.*, Rule 3.

⁴²⁸ UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 3.

Rule 4 is still related to the previous issue. It establishes that “*activities directed at underwater cultural heritage must use non-destructive techniques and survey methods in preference to recovery of objects. If excavation or recovery is necessary for the purpose of scientific studies or for the ultimate protection of the underwater cultural heritage, the methods and techniques used must be as non-destructive as possible and contribute to the preservation of the remains*”⁴²⁹. Underwater archaeologists should preferably adopt non-destructive techniques of investigation rather than excavating a site and/or recovering its artifacts. However, it is in the nature of archaeology as scientific discipline to perform also intrusive analysis in order to discover new information about our past. Accordingly, the excavation and recovery are both accepted practices for the development of scientific studies or for the protection of underwater cultural heritage. But they should be performed using, as far as possible, non-destructive methods and techniques of analysis.

According to Rule 5 “*Activities directed at underwater cultural heritage shall avoid the unnecessary disturbance of human remains or venerated sites*”⁴³⁰. This Rule refers to the underwater cultural heritage containing human remains (like, for example, military shipwrecks acting as underwater graveyards) or related to venerated sites (such as, for instance, the sacred cenotes of the Yucatán Peninsula). Rule 5 does not totally prohibit activities directed at these underwater cultural sites. But, in order to respect the feelings of the people that associate to these sites a spiritual and emotional value, it requires to avoid any activity that may unnecessarily disturb these sites. Actually, as good practice, further measures should be adopted in the management of these sites like, for example, a respectful handling of the discovered human remains or the involvement of the interested parties in the planning of the activities directed at venerated sites.

Rule 6 disposes that “*activities directed at underwater cultural heritage shall be strictly regulated to ensure proper recording of cultural, historical and archaeological information*”⁴³¹. This Rule requires to the national competent authorities of each state party to regulate and ensure the process of recording and documentation related to activities directed at underwater cultural heritage. Intrusive actions may alter the conformation of the underwater cultural sites and, therefore, “*unless*

⁴²⁹ UNESCO Annex (2001), *op. cit.*, Rule 4.

⁴³⁰ UNESCO Annex (2001), *last op. cit.*, Rule 5.

⁴³¹ UNESCO Annex (2001), *last op. cit.*, Rule 6.

recorded, what has been destroyed is not available for future study”⁴³². So, competent authorities have, first of all, to set standard parameters of documentation and recording⁴³³. Furthermore, they must control the effective respect of these standards by all those who operate on underwater cultural sites.

According to Rule 7 “*public access to in situ underwater cultural heritage shall be promoted, except where such access is incompatible with protection and management*”⁴³⁴. Normally public access to underwater cultural heritage must be promoted and encouraged because an aware and involved public is the best ally in the protection and sustainable management of underwater cultural heritage. The access to a site preserved *in situ* may be direct, for example allowing responsible divers and (in some circumstances) snorkelers to visit underwater cultural sites; or indirect, proposing to the non-diving public experiences such as, for example, virtual reconstructions and ROVs live videos⁴³⁵. The direct involvement of the public on sites preserved *in situ* is one of the main goal of the Convention. However, as indicated by this Rule, public access may be ultimately regulated or prohibited in order to guarantee the protection and management of a site.

Rule 8 states that “*international cooperation in the conduct of activities directed at underwater cultural heritage shall be encouraged in order to further the effective exchange or use of archaeologists and other relevant professionals*”⁴³⁶. Cooperation is the key to strengthen the protection of the underwater cultural heritage wherever located. Thus, the development of partnerships and joint-research projects should be encouraged fostering, in this way, the sharing of qualified professionals.

⁴³² UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 8.

⁴³³ On this issue see, for example, Anderson R. K., Croteau T. A. (edited by), *Guidelines for Recording Historic Ships*, National Park Service, Washington, 2004.

⁴³⁴ UNESCO Annex (2001), *op. cit.*, Rule 7.

⁴³⁵ A good example of virtual reconstruction is the VENUS project. To learn more about this project see Chapman P., Conte G., Drap P., Gambogi P., Gauch F., Hanke K., Long L., Loureiro V., Papini O., Pascoal A., Richards J., Roussel D., *VENUS, Virtual Exploration of Underwater Sites*, 7th International Symposium on Virtual Reality, Archeology and Cultural Heritage (VAST 2006); Jeansoulin R. and Papini O., *Underwater Archeological Knowledge Analysis and Representation in the Venus Project: a Preliminary Draft*, XXI International CIPA Symposium.

⁴³⁶ UNESCO Annex (2001), *op. cit.*, Rule 8.

The elaboration of a project design: how to practically organize archaeological activities directed at the underwater cultural heritage

Working on the underwater cultural heritage requires special care and attention, as well as an advanced knowledge of archaeological practices. Therefore, the activities directed at underwater cultural heritage cannot be performed through improvisation and unpreparedness. On the contrary, they have to be adequately organized in a project design. According to Rule 9 *“Prior to any activity directed at underwater cultural heritage, a project design for the activity shall be developed and submitted to the competent authorities for authorization and appropriate peer review”*⁴³⁷.

As stated by Rule 10 *“the project design shall include:*

- a) an evaluation of previous or preliminary studies;*
- b) the project statement and objectives;*
- c) the methodology to be used and the techniques to be employed;*
- d) the anticipated funding;*
- e) an expected timetable for completion of the project;*
- f) the composition of the team and the qualifications, responsibilities and experience of each team member;*
- g) plans for post-fieldwork analysis and other activities;*
- h) a conservation programme for artefacts and the site in close cooperation with the competent authorities;*
- i) a site management and maintenance policy for the whole duration of the project;*
- j) a documentation programme;*
- k) a safety policy;*
- l) an environmental policy;*
- m) arrangements for collaboration with museums and other institutions, in particular scientific institutions;*
- n) report preparation;*
- o) deposition of archives, including underwater cultural heritage removed; and*
- p) a programme for publication”*⁴³⁸.

The project design has to contain and satisfy these specific parameters in order to be approved by competent authorities.

⁴³⁷ UNESCO Annex (2001), *last op. cit.*, Rule 9.

⁴³⁸ UNESCO Annex (2001), *last op. cit.*, Rule 10.

Obviously the activities that may be performed are only those expressed in the project design and authorized by the related competent authorities (Rule 11). Eventually, to strength this point, competent authorities may also set up a system of penalties aimed to punish the accomplishment of activities inconsistent with the approved project design⁴³⁹.

However, unforeseen events may occur. So, whether the events may require actions different from those planned and authorized, the project design must be reviewed and amended in order to obtain a new approval by the competent authorities (Rule 12).

But, the development of a project design requires time that, in cases of urgency or chance discoveries, may not be available. Therefore, in these particular cases, Rule 13 establishes that *“activities directed at the underwater cultural heritage, including conservation measures or activities for a period of short duration, in particular site stabilization, may be authorized in the absence of a project design in order to protect the underwater cultural heritage”*⁴⁴⁰. This is a reasonable solution considering that the highest goal of the Convention is to protect the underwater cultural heritage.

Rules 14 and 15 regulate the preliminary work (mentioned in Rule 10 at point a), requiring a first field evaluation and an overall background analysis. Rule 14 states that *“the preliminary work referred to in Rule 10 (a) shall include an assessment that evaluate the significance and vulnerability of the underwater cultural heritage and the surrounding natural environment to damage by the proposed project, and the potential to obtain data that would meet the project objectives”*⁴⁴¹. A preliminary work consist on a series of studies and researches that can be realized before a direct intervention. According to Rule 14 the preliminary work has to assess two things: the impact of the planned activities in respect to the significance⁴⁴² and vulnerability⁴⁴³ of the underwater cultural heritage and its surrounding natural environment; and the expected results and data that the project may produce. The approval of the plan will be considered evaluating and balancing the expected positive and negative outcomes.

⁴³⁹ See UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 11.

⁴⁴⁰ UNESCO Annex (2001), *last op. cit.*, Rule 13.

⁴⁴¹ UNESCO Annex (2001), *last op. cit.*, Rule 14.

⁴⁴² The concept of significance makes reference to the set of values that characterize a site.

⁴⁴³ Vulnerability consists on the evaluation of the elements that may put at risk the preservation of the site.

Rule 15 adds that *“the assessment shall also encompass background studies of available historical and archaeological evidence, the archaeological and environmental characteristics of the site, and the consequences of any potential intrusion for the long-term stability of the underwater cultural heritage affected by the activities”*⁴⁴⁴. As affirmed by the UNESCO Manual *“a preliminary assessment of a site should include descriptive information and evaluative section on:*

- *location;*
- *depth;*
- *stratigraphic position;*
- *extent;*
- *nature of remains;*
- *conditions of remains;*
- *environmental conditions”*⁴⁴⁵.

All these collected information will then be used to estimate the impact of the planned activities on the long-term stability of the site.

Rule 16 regards project objective, methodology and techniques, which are the points (b) and (c) of Rule 10. According to Rule 16 *“the methodology shall comply with the project objectives and the techniques employed shall be as non-intrusive as possible”*⁴⁴⁶. Consistent with the nature and scope of the project specific methodologies and techniques of analysis (preferably non-intrusive) will be adopted. The hope, as expressed by the UNESCO Manual, is that *“with proper scientific and technical training, the archaeologist will be able to use the minimum of technical resources needed to obtain the best possible scientific results at the lowest costs and with a methodology that is simple to execute”*⁴⁴⁷.

The Rules from 17 to 19 concern the funding process (point (d) of Rule 10). According to Rule 17 *“except in cases of emergency to protect underwater cultural heritage, an adequate funding base shall be assured in advance of any activity, sufficient to complete all stages of the project design, including conservation, documentation and curation of recovered artefacts, and report preparation and dissemination”*⁴⁴⁸.

⁴⁴⁴ UNESCO Annex (2001), *op. cit.*, Rule 15.

⁴⁴⁵ UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 15.

⁴⁴⁶ UNESCO Annex (2001), *op. cit.*, Rule 16.

⁴⁴⁷ UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 16.

⁴⁴⁸ UNESCO Annex (2001), *op. cit.*, Rule 17.

The request of a preventive, but detailed budget plan aims to ensure that all phases of the project will be professionally realized. Proceeding without a funding plan may lead to an underestimation of the overall costs with the result to endanger the safety of the site or the success of the entire project. Thus, assessing the feasibility of the planned project is a fundamental step to evaluate its suitability.

The sole exception accepted by Rule 17 is in case of emergencies, in which immediate actions are required. However, a good project design should also contain an “emergency plan” able to ensure the completion of the project’s core activities even in case of adverse circumstances. On the base of these considerations Rule 18 adds that *“the project design shall exhibit demonstrated ability, such as securing a bond, to fund the project through to completion”*⁴⁴⁹ and Rule 19 states that *“the project design shall include a contingency plan that will ensure conservation of underwater cultural heritage and supporting documentation in the event of any interruption of anticipated funding”*⁴⁵⁰.

Rules 20 and 21 are related to the determination of the project duration, as required by Rule 10, point (e). According to Rule 20 *“an adequate timetable shall be developed to assure in advance of any activity directed at underwater cultural heritage the completion of all stages of the project design, including, conservation, documentation and curation of recovered underwater cultural heritage, as well as report preparation and dissemination”*⁴⁵¹. The duration of an archaeological project may vary according to factors like, for example, the intended goals, the methodology adopted and the budget available, etc. However, each project design has to contain a timetable scheduling:

- the order of the activities to be carried out during the project (and the related resources);
- the time allocated for each individual phase;
- the total duration of the project.

Overall, as stated in the UNESCO Manual *“the timetable is a tool that enables the monitoring and assessing of the progress of a project throughout duration”*⁴⁵².

⁴⁴⁹ UNESCO Annex (2001), *last op. cit.*, Rule 18.

⁴⁵⁰ UNESCO Annex (2001), *last op. cit.*, Rule 19.

⁴⁵¹ UNESCO Annex (2001), *last op. cit.*, Rule 20.

⁴⁵² UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 20.

Moreover, as established by Rule 21, *“the project design shall include a contingency plan that will ensure conservation of underwater cultural heritage and supporting documentation in the event of any interruption in or termination of the project”*⁴⁵³. As already provided for the funds by Rule 19, Rule 21 requires the designation of a contingency plan to face unforeseen circumstances (which can be connected, for example, to a malfunction of the equipment used, challenging weather conditions or health problems within the staff). So *“a realistic project timetable takes into consideration possible delays and interruptions in the project plan. This allows for the original plan to be adapted in order to accommodate all changes”*⁴⁵⁴.

Rule 22 and 23 concern the competences and qualifications of the team working on the project. The reference is point (f) of Rule 10. According to Rule 22 *“activities directed at underwater cultural heritage shall only be undertaken under the direction and control of, and in the regular presence of, qualified underwater archaeologist with scientific competence appropriate to the project”*⁴⁵⁵. Activities directed at underwater cultural heritage require skilled. Therefore only a qualified underwater archaeologist who possess appropriate scientific competences may direct and control activities directed at underwater cultural heritage.

The request of qualified people is not limited to the role of the project leader, but it must be extended to all people of the team who will be involved in the project. Rule 23 states that *“all persons on the project team shall be qualified and have demonstrated competence appropriate to their project roles”*⁴⁵⁶. So, the final goal of Rules 22 and 23 is to guarantee that the intervention on the underwater cultural heritage will be carried out according to the highest professional (and ethical) standards.

In any case, the obligations expressed by Rule 22 and 23 do not totally exclude the participation of non-archaeologists in the project under. Actually, as underlines by the UNESCO Manual, *“archaeologists and competent authorities must encourage responsible participation and involvement by the wider diving community in investigating and managing underwater heritage. An informed and enthusiastic diving community is a*

⁴⁵³ UNESCO Annex (2001), *op. cit.*, Rule 21.

⁴⁵⁴ UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 21.

⁴⁵⁵ UNESCO Annex (2001), *op. cit.*, Rule 22.

⁴⁵⁶ UNESCO Annex (2001), *last op. cit.*, Rule 22.

wonderful ally and asset in the work of managing and investigating underwater cultural heritage”⁴⁵⁷.

Rule 24 and 25 are related to conservation and site management which respectively correspond to points (h) and (i) of Rule 10. According to Rule 24 “the conservation programme shall provide for the treatment of the archaeological remains during the activities directed at underwater cultural heritage, during transit and in the long term. Conservation shall be carried out in accordance with current professional standards”⁴⁵⁸. The project design must include a conservation plan. This plan cannot be limited to the duration of the project, but it must ensure the long-term conservation of the underwater cultural artifacts and structures examined. As stressed by O’Keefe “this may well be a costly process extended indefinitely”⁴⁵⁹. Moreover, Rule 24 requires that the conservation process will be carry out according to the current professional standards operating at international level⁴⁶⁰.

Concerning the site management, Rule 25 establishes that “the site management programme shall provide for the protection and management in situ of underwater cultural heritage, in the course of and upon the termination of fieldwork. The programme shall include public information, reasonable provision for site stabilization, monitoring, and protection against interference”⁴⁶¹. As for the conservation, also the management of the underwater cultural heritage require a long-term planning which goes beyond the fieldwork period. Rule 25 assumes that the site will be preserved *in situ*. Therefore the related site management program has to propose measures for the protection *in situ* (in the course of and after the termination of fieldwork), but it has also to plan other aspects like, for example, the sharing of information with the public, the site’s stabilization and its monitoring. The general goal is to prevent and mitigate adverse effects on the site, but at the same time promoting and enhancing it for the public benefit.

⁴⁵⁷ UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 23.

⁴⁵⁸ UNESCO Annex (2001), *op. cit.*, Rule 23.

⁴⁵⁹ O’Keefe P. J. (2002), *op. cit.*, p. 178.

⁴⁶⁰ An example of conservation program is proposed in the text of the UNESCO Manual. See UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 24.

⁴⁶¹ UNESCO Annex (2001), *op. cit.*, Rule 24.

Rule 26 and 27 regard the documentation of the activities directed at underwater cultural heritage, as required by Rule 10, point (j). According to Rule 26 *“the documentation programme shall set out through documentation including a progress record of activities directed at underwater cultural heritage, in accordance with current professional standard of archaeological documentation”*⁴⁶². Activities directed at underwater cultural heritage may irreversibly change the conditions of a site. Documenting is the only way to preserve all the information that may be relevant for interpreting and protecting the site.

Rule 26 requires that the documentation has to be realized according to current professional archaeological standard, without providing additional information. Further indications are offered by Rule 27, which states that *“documentation shall include, at a minimum, a comprehensive record of the site, including the provenance of underwater cultural heritage moved or removed in the course of the activities directed at underwater cultural heritage, field notes, plans, drawings, sections, and photographs or recording in other media”*⁴⁶³. The goal is to register any movement of artifacts and to record the impact of performed activities.

Rule 28 requires the adoption of safety measures (Rule 10, point k). It states that *“a safety policy shall be prepared that is adequate to ensure the safety and health of the project team and third parties and that is in conformity with any applicable statutory and professional requirements”*⁴⁶⁴. The technologies used as well as the features of the underwater environment may involve a certain factor of risk for the safety and health of a working team. These risks can be reduced by taking precautions and acting responsibly. Therefore, a project which plans activities directed at underwater cultural heritage has to design a safety policy according to the occupational safety law in force in that state.

Rule 29 concerns the environmental policy (Rule 10, point l). This Rule affirms that *“an environmental policy shall be prepared that is adequate to ensure that the seabed and marine life are not unduly disturbed”*⁴⁶⁵. Activities directed at underwater cultural heritage must respect the marine environment in which they operate. A project design has to include an environmental policy which must assess, at first instance, the impact of its planned activities on the surrounding natural environment. The goal

⁴⁶² UNESCO Annex (2001), *last op. cit.*, Rule 25.

⁴⁶³ UNESCO Annex (2001), *last op. cit.*, Rule 26.

⁴⁶⁴ UNESCO Annex (2001), *last op. cit.*, Rule 28.

⁴⁶⁵ UNESCO Annex (2001), *last op. cit.*, Rule 29.

is to balance the needs related to the underwater cultural heritage investigation with those designed to protect the surrounding natural environment. As reminded in the UNESCO Manual “one of the pillars of the management of underwater cultural heritage is the integration of heritage protection in spatial planning and in marine policies”⁴⁶⁶.

Rules 30 and 31 deal with the report preparation (Rule 10, point n) and the post-fieldwork analysis (Rule 10, point g). According to Rule 30 “Interim and final reports shall be made available according to the timetable set out in the project design, and deposited in relevant public records”⁴⁶⁷. Reports are publication that present the activities developed and the results achieved by a project. Rule 30 requires two things. First of all, the respect of the planned timetable for what concerns the publication of interim and final reports. Second, their deposition in public records so that they can become, as soon as possible, available to a full range of potential users (general public, professional archaeologists, etc.).

Rule 31 defines the minimum structure of a report. According to this rule “reports shall include:

- a) an account of the objectives;
- b) an account of the methods and techniques employed;
- c) an account of the results achieved;
- d) basic graphic and photographic documentation on all phases of the activity;
- e) recommendations concerning conservation and curation of the site and of any underwater cultural heritage removed; and
- f) recommendations for future activities”⁴⁶⁸.

The overall structure of the reports must be divided in two parts. In the first part the reports have to recollect all the main information related to the planning of the project and its realization on the field. In this section must be included objectives, methods and techniques adopted, results achieved and the documentation related to all the phases of the project. In the second part, on the contrary, the reports have to provide recommendations about the future activities on the site, including suggestions for its conservation and eventual proposals for future activities of research *in situ*.

⁴⁶⁶ UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 29.

⁴⁶⁷ UNESCO Annex (2001), *op. cit.*, Rule 30.

⁴⁶⁸ UNESCO Annex (2001), *last op. cit.*, Rule 31.

Rules 32, 33 and 34 are all related to the deposition of archives as required by Rule 10, point (o). The development of project archives often imply a collaboration with museums and other scientific institutions. This form of collaboration reflects the request established by Rule 10, point (m).

According to Rule 32 *“arrangements for curation of the project archives shall be agreed to before any activity commences, and shall be set out in the project design”*⁴⁶⁹. The project design has to estimate how it will be managed all the documentation produced and the material recovered during the activities directed at underwater cultural heritage. Therefore, prior to the commencing of fieldwork, the project team leader must define possible collaborations with museums and research institutions for the management of the material that will be produce/recover during the different phases of the project.

Rule 33 adds that *“the project archives, including any underwater cultural heritage removed and a copy of all supporting documentation shall, as far as possible, be kept together and intact as a collection in a manner that is available for professional and public access as well as for the curation of the archives. This should be done as rapidly as possible and in any case not later than 10 years from the completion of the project, in so far as may be compatible with conservation of the underwater cultural heritage”*⁴⁷⁰. All the material produced and the artifacts recovered should be kept as a unique collection that must be made available for professional and public access as rapidly as possible. The Rule establishes a time-limit of 10 years from the completion of the project, but this is a flexible deadline, being related to the state of conservation of the underwater cultural heritage. The goal is to keep together and available the documentations related to the project and the properties recovered in order to favor eventual further studies on the collection as a whole. As noted by O’Keefe, the Rule states that the documentation and material recovered shall be kept as a collection *‘as far as possible’*: *“indirectly, these two Rules [Rule 32 and 33] recognize that, for political and other reasons, it may be necessary to split a collection and place artifacts in different locations”*⁴⁷¹. However, considering the overall structure of the Convention and its Annex, this perspective should be exclusively considered in exceptional circumstances. Finally, Rule 34 establishes that *“the project archives shall*

⁴⁶⁹ UNESCO Annex (2001), *last op. cit.*, Rule 32.

⁴⁷⁰ UNESCO Annex (2001), *last op. cit.*, Rule 33.

⁴⁷¹ See O’Keefe P. J. (2002), *op. cit.*, p. 186.

be managed according to international professional standards, and subject to the authorization of the competent authorities"⁴⁷².

Rule 35 and 36 are related to the dissemination of the information obtained through the realization of the project, as required by Rule 10, point (p). According to Rule 35 *"projects shall provide for public education and popular presentation of their results where appropriate"*⁴⁷³. As already stated, the best way to protect the underwater cultural heritage and make its management financially sustainable is creating public awareness. Consequently, Rule 34 requires the dissemination and promotion of the results achieved through the implemented project. The statement adds the qualification *'where appropriate'* mainly referring to those circumstances in which the results of the project may contain sensitive information that could be kept (temporarily) confidential in order to ensure the protection of the site. These indications are substantially repeated by Rule 36, which adds that *"a final synthesis of a project shall be:*

- a) made public as soon as possible, having regard to the complexity of the project and the confidential or sensitive nature of the information; and*
- b) deposited in relevant public records"*⁴⁷⁴.

Conclusion: a new system of professional archaeological standards

On the whole, the Rules of the Annex are clear, logic and well-structured. Appropriately balancing ethical principles with the practical managerial aspects, these Rules offer an advanced system of protection for the underwater cultural heritage. As a result, they have been adopted as professional standards of scientific investigation even by those states which have not yet ratified the 2001 UNESCO Convention. Therefore, in virtue of its wide appreciation and practical efficacy, the Annex to the 2001 UNESCO Convention may surprisingly produce greater benefits for the protection of the underwater cultural heritage than the main text of the Convention itself.

⁴⁷² UNESCO Annex (2001), *op. cit.*, Rule 34. The UNESCO Manual lists some international norms related to the process of professional archiving. See UNESCO, Manual for activities directed at Underwater Cultural Heritage, 2011, *op. cit.*, explanation Rule 32.

⁴⁷³ UNESCO Annex (2001), *last op. cit.*, Rule 35.

⁴⁷⁴ UNESCO Annex (2001), *last op. cit.*, Rule 36.

3.4 Planning the next steps. The firsts consultations of the Meeting of States Parties and the Scientific and Technique Advisory Body

This paragraph aims to sum up the main topics discussed respectively by the Meetings of States Parties and the Scientific and Technique Advisory Body in their three sessions of consultations carried out.

According to the disposition of the Director-General of UNESCO, the first Meeting of States Parties was organized in Paris on 26-27 March 2009. In such circumstance the representatives of states parties adopted, in plenary meeting, the “Rules of Procedure of the Meeting of States Parties to the Convention on the Protection of the Underwater Cultural Heritage”. These Rules (that must not be confused with the Rules expressed in the Annex to the 2001 UNESCO Convention) define the functions, responsibilities, operative structures and technical procedures regulating the Meeting of States Parties. Rule 3 defines the functions and responsibilities of the Meeting of States Parties, which are:

- a) *“to elaborate, discuss and approve the Operational Guidelines for the Convention;*
- b) *to elect members to the Scientific and Technical Advisory Body (hereinafter referred to as “Advisory Body”), nominated by States Parties;*
- c) *to adopt and amend the statutes of the Advisory Body;*
- d) *to receive and examine reports by the States Parties to the Convention, as well as their requests for advice;*
- e) *to examine reports submitted to it by the Advisory Body;*
- f) *to examine, discuss and decide on recommendations submitted to it by the Advisory Body;*
- g) *to seek means for raising funds and to take the necessary measures to this end;*
- h) *to take all other measures it considers necessary to further the objectives of the Convention”*⁴⁷⁵.

In order to take decisions, the absolute majority of states parties must attend the Meeting (quorum)⁴⁷⁶. The decisions are taken by majority of the states parties present and voting. States parties abstaining from voting will be considered as if they have not voted. Normally the vote

⁴⁷⁵ UNESCO, Rules of Procedure of the Meeting of States Parties to the Convention on the Protection of the Underwater Cultural Heritage, Paris, 2009, Rule 3.

⁴⁷⁶ See UNESCO Rules of Procedure (2009), *last op. cit.*, Rule 10.

takes place through the show of hands, but a secret ballot may be request by one state party and, in order to be admitted, it must be seconded by at least other two states⁴⁷⁷.

Concerning the Advisory Body, it is composed by 12 members. They are elected, for a period of 4 years (but half of the first members of the Advisory Body will be elected only for a period of 2 years), among the candidates presented by states parties⁴⁷⁸. As defined by Rule 22, par. 1 *"the election of members of the Advisory Body shall be conducted with due regard to the principle of equitable geographical distribution and the desirability of a gender balance as well as a balance of domains of expertise. Experts shall have a scientific, professional and ethical background at the national and/or international level adequate to the task, in conformity with the objective and purpose of the Convention"*⁴⁷⁹. The experts of the Advisory Body are normally elected by states parties through secret ballot⁴⁸⁰. The Director-General of UNESCO and other delegates (the representatives of Member States of UNESCO not parties to the 2001 UNESCO Convention, agents of the United Nations and related intergovernmental organizations that have signed mutual representation agreements with UNESCO, and observers of intergovernmental and international non-governmental organizations invited by the Director-General) may participate in the sessions of the Meeting without voting⁴⁸¹.

During the first Meeting, states parties have also defined the Statute of the Advisory Body. This Statute is based on 8 articles. In short, the Advisory Body has to assist the Meeting of States Parties in scientific and technical questions regarding the practical implementation of the Rules defined in the Annex to the 2001 UNESCO Convention. Moreover, it has to propose recommendations for enforcing protection and conservation of the underwater cultural heritage (whether necessary, consulting and collaborating with non-governmental organizations working on the matter, such as the ICUCH)⁴⁸².

⁴⁷⁷ See UNESCO Rules of Procedure (2009), *last op. cit.*, Rule 20.

⁴⁷⁸ See UNESCO Rules of Procedure (2009), *last op. cit.*, Rule 22 and 23.

⁴⁷⁹ UNESCO Rules of Procedure (2009), *last op. cit.*, Rule 22, par. 1.

⁴⁸⁰ See UNESCO Rules of Procedure (2009), *last op. cit.*, Rule 25.

⁴⁸¹ See UNESCO Rules of Procedure (2009), *last op. cit.*, Rule 2 and 26.

⁴⁸² See UNESCO, Statutes of the Scientific and Technical Advisory Body to the Meeting of States Parties to the Convention on the Protection of the Underwater Cultural Heritage, Paris, 2009, Art. 1. The ICUCH is the acronym for the ICOMOS International Scientific Committee for the Protection of the Underwater Cultural Heritage. For more information

According to art. 4 the Director-General of UNESCO has to organize a session of the Advisory Body one a year⁴⁸³. The recommendations of the Advisory Body are generally adopted by consensus. When a wide consensus is not reachable, the recommendations are adopted by majority of the members present at the meeting⁴⁸⁴. According to art. 7 states parties must provide appropriate funding to the Advisory Body, while UNESCO must “*make all reasonable efforts to identify funding from regular and extra budgetary resources*”⁴⁸⁵. But “*whenever possible, the members of the Advisory Body should work electronically*”⁴⁸⁶.

In the second session of the Meeting, which took place from 1 to 2 December 2009, States Parties mainly elected the first 11 members of the Advisory Body (at that time only 11 candidates were proposed) and started the editing of the Operational Guidelines for the implementation of the 2001 UNESCO Convention⁴⁸⁷.

In the first meeting of the Scientific and Technical Advisory Body, which took place at Cartagena from 13 to 15 June 2010, the elected candidates proposed a series of recommendations such as:

- to create a UNESCO electronic form for the transfer of notifications among states;
- to adopt a format for the accreditation requests of the NGOs;
- to encourage the enforcement of art. 16;
- to promote public awareness through virtual experiences;
- to elaborate guidelines for the development of compatible national inventories;
- to elaborate ethical standards for divers’ communities;
- to analyze the benefits of the underwater cultural heritage enhancement;
- to study how to face the most significant factors of risks which threaten the underwater cultural heritage⁴⁸⁸.

about the ICUCH check the web site
<http://international.icomos.org/18thapril/18april2003c.htm>, last access 26/06/2012.

⁴⁸³ See UNESCO Statutes Advisory Body (2009), *last op. cit.*, art. 4.

⁴⁸⁴ See UNESCO Statutes Advisory Body (2009), *last op. cit.*, art. 6.

⁴⁸⁵ UNESCO Statutes Advisory Body (2009), *last op. cit.*, art. 7 a.

⁴⁸⁶ UNESCO Statutes Advisory Body (2009), *last op. cit.*, art. 7 b.

⁴⁸⁷ For more information see UNESCO, Second Session of the Meeting of States Parties – Final Report, Paris, 2009.

⁴⁸⁸ For more information see: UNESCO, First Meeting of the Scientific and Technical Advisory Body – Resolutions and Recommendations, Cartagena, 2010.

In the third session of the Meeting, which took place from 13 to 14 April 2011, States Parties discussed the considerations expressed by the first report of the Advisory Body, the elaboration of Operational Guidelines, the election of new 12 members for the Advisory Body, and the beneficial cooperation between NGOs and the Advisory Body⁴⁸⁹.

In the second meeting of the Scientific and Technique Advisory Body, which took place on 15 April 2011, the new members of the Advisory Body discussed mainly about three topics:

- the quality (and data of publication) of the Manual for activities directed at Underwater Cultural Heritage;
- the most significant factors negatively affecting the conservation of underwater cultural heritage and the identification of remedial measures;
- the current status of underwater archaeology.

In the final report the Advisory Body proposed some advices like, for example:

- to promote a series of measures which may strengthen the protection of underwater cultural heritage affected by resource extraction projects;
- to encourage the development of physical measures aimed to protect underwater cultural heritage from fishing and trawling activities, and to identify specific protected areas where fishing is forbidden;
- to collaborate with diving operators in the protection of underwater cultural heritage and eventually to introduce incentives for the consignment of chance finds to the national competent authorities;
- to encourage States Parties to define their national competent authorities and to provide them the necessary resources to fulfill their duties;
- to develop research and capacity-building initiatives, and to harmonize the licensing for scientific divers and the academic qualification standards for underwater archaeologists⁴⁹⁰.

⁴⁸⁹ For more information see: UNESCO, Third Session of the Meeting of States Parties – Final Report, Paris, 2011.

⁴⁹⁰ For more information see UNESCO, Second Meeting of the Scientific and Technical Advisory Body – Final Report & Recommendations and Resolutions, Paris, 2011.

In the third meeting of the Scientific and Technique Advisory Body, which took place on 19 April 2012, the experts mainly discussed on:

- how to regulate the collaboration with the accredited NGOs⁴⁹¹;
- which were the common and emerging issues of underwater archaeology;
- how to strengthen youth education and awareness-rising;
- the development of a virtual access to underwater cultural heritage;
- the difficulties to harmonize the licensing diving system;
- the creation of interchangeable databases;
- the inconsistency of the hypothesis to finance the archaeological excavations through the de-accession of artifacts considering the principles and Rules of the 2001 UNESCO Convention⁴⁹².

In the final report the Advisory Body recommends, for example, to:

- collaborate in the researches related to inland water sites, sea routes and submerged prehistoric landscapes;
- organize international commemorative events to celebrate the 100th anniversary of the outbreak of World War I in 2014;
- introduce topics related to the underwater cultural heritage in the educational material of schools at different levels (primary, secondary and higher school) as well as other educative measures;
- identify shared basic standards for archaeological divers and to harmonize the training of divers for archaeological aims;
- take measures and develop models to demonstrate the public utility of the protection of underwater cultural heritage.

The entry into force of the 2001 UNESCO Convention represents a major turning point for the protection and management of the underwater cultural heritage. However, on the base of these

⁴⁹¹ To get an idea about the NGOs that cooperate with UNESCO on the protection of the underwater cultural heritage see Leshikar-Denton M. E., "Cooperation is the Key: We Can Protect the Underwater Cultural Heritage", *Journal of Maritime Archaeology*, Vol. 5, No. 2, 2010.

⁴⁹² As stated in the report "*De-accessioning is the formal process of the removal of an object from a collection, register, catalogue or database based upon a number of sound considerations*". UNESCO, Third Meeting of the Scientific and Technical Advisory Body – Report, Recommendations and Resolutions, Paris, 2012, p. 8.

considerations, it is clear that several issues, practical and theoretical, have still to be faced and solved.

In particular, during the consultations of the Advisory Body, the attention has been focused on three aspects:

- the effective implementation of the cooperation principle among States, experts, NGOs, etc.;
- the harmonization, as far as possible, of certain strategic factors like, for example, the system for the diving licenses, the parameters considered in the national databases, the educational training of future underwater archaeologists and the variables used in the risks assessment models;
- the organization of studies on the sustainability of the underwater cultural heritage management (from the search of new funds for the archaeological investigation to the evaluation of the effective public utility generated by the underwater cultural heritage management).

In this context, the transition between the recommendations of the Advisory Body and their practical implementation by states parties will be the key step to really strengthen the system introduced by the 2001 UNESCO Convention.

4. Interpreting the will of the states: a comparative analysis on the ratifications of the main international conventions in force

This paragraph proposes a comparative analysis on the ratifications of the three main systems dealing with the underwater cultural heritage: the 1982 UNCLOS Convention, the 1989 Salvage Law Convention and the 2001 UNESCO Convention. The overall goal is to interpret the will of the states about the underwater cultural heritage management.

To begin with, table 12 below shows which states have ratified these conventions and the reservation stated by art. 30, par. 1 (d) of the Salvage law Convention⁴⁹³.

⁴⁹³ According to art. 30, par. 1 (d): “Any State may, at the time of signature, ratification, acceptance, approval or accession, reserve the right not to apply the provisions of this Convention: (d) when the property involved is maritime cultural property of prehistoric, archaeological or historic interest and is situated on the sea-bed”. IMO (1989), *op. cit.*, art. 30, par. 1 (d).

CONTRACTING STATES and CONVENTIONS				
State Party	UNCLOS	Salvage Convention	Reserv. art.30, par.1(d)	2001 UNESCO
TOT.	162	62	22	41
<u>Afghanistan</u>	x			
Albania	x	x		x
Algeria	x	x		
<u>Andorra</u>				
Angola	x			
Antigua & Barbuda	x			
Argentina	x			x
<u>Armenia</u>	x			
Australia	x	x	x	
<u>Austria</u>	x			
<u>Azerbaijan</u>		x		
Bahamas	x			
Bahrain	x			
Bangladesh	x			
Barbados	x			x
<u>Belarus</u>	x			
Belgium	x	x		
Belize	x			
Benin	x			x
<u>Bhutan</u>	x			
<u>Bolivia</u>	x			
Bosnia & Herzegovina	x			x
<u>Botswana</u>	x			
Brazil	x	x		
Brunei Darussalam	x			
Bulgaria	x	x	x	x
<u>Burkina Faso</u>	x			
<u>Burundi</u>	x			
Cambodia	x			x
Cameroon	x			
Canada	x	x	x	
Cape Verde	x			
<u>Central African Rep.</u>	x			
<u>Chad</u>	x			
Chile	x			
China	x	x	x	
Colombia	x			
Comoros	x			
Congo	x	x		x
Cook Islands	x			
Costa Rica	x			
Cote d'Ivoire	x			

Croatia	x	x	x	x
Cuba	x			x
Cyprus	x			
<u>Czech Republic</u>	x			
Dem. Rep. Korea	x			
Dem. Rep. of Congo	x			
Denmark	x	x		
Djibouti	x			
Dominica	x	x		
Dominican Republic	x			
Ecuador		x	x	x
Egypt	x	x		
El Salvador	x			
Equatorial Guinea	x			
Eritrea				
Estonia	x	x	x	
<u>Ethiopia</u>	x			
Fiji	x			
Finland	x	x	x	
France	x	x	x	
Gabon	x			x
Gambia	x			
Georgia	x	x		
Germany	x	x	x	
Ghana	x			
Greece	x	x		
Grenada	x			x
Guatemala	x			
Guinea	x	x		
Guinea-Bissau	x			
Guyana	x	x		
Haiti	x			x
<u>Holy See</u>				
Honduras	x			x
<u>Hungary</u>	x			
Iceland	x	x		
India	x	x		
Indonesia	x			
Iran (Islamic Rep.)	x	x	x	x
Iraq	x			
Ireland	x	x		
Israel				
Italy	x	x		x
Jamaica	x			x
Japan	x			
Jordan	x	x		x
<u>Kazakhstan</u>				
Kenya	x	x		

Kiribati	x	x		
Kuwait	x			
<u>Kyrgyzstan</u>				
<u>Laos</u>	x			
Latvia	x	x		
Lebanon	x			x
<u>Lesotho</u>	x			
Liberia	x	x		
Libya	x			x
<u>Liechtenstein</u>	x			
Lithuania	x	x		x
<u>Luxembourg</u>	x			
Madagascar	x			
<u>Malawi</u>	x			
Malaysia	x			
Maldives	x			
<u>Mali</u>	x			
Malta	x			
Marshall Islands	x	x		
Mauritania	x			
Mauritius	x	x		
Mexico	x	x	x	x
Micronesia	x			
Monaco	x			
<u>Mongolia</u>	x			
Montenegro	x	x		x
Morocco	x			x
Mozambique	x			
Myanmar	x			
Namibia	x			x
Nauru	x			
<u>Nepal</u>	x			
Netherlands	x	x	x	
New Zealand	x	x	x	
Nicaragua	x			
<u>Niger</u>	x			
Nigeria	x	x		x
Niue	x			
Norway	x	x	x	
Oman	x	x		
Pakistan	x			
Palau	x	x		
Palestine				x
Panama	x			x
Papua New Guinea	x			
<u>Paraguay</u>	x			x
Peru				
Philippines	x			

Poland	x	x	x	
Portugal	x			x
Qatar	x			
Rep. of Korea	x			
<u>Rep. of Moldova</u>	x			
Romania	x	x		x
Russian Federation	x	x	x	
<u>Rwanda</u>	x			
Saint Kitts and Nevis	x	x		x
Saint Lucia	x			x
St.Vincent&Grenadines	x			x
Samoa	x			
<u>San Marino</u>				
Sao Tome & Principe	x			
Saudi Arabia	x	x	x	
Senegal	x			
<u>Serbia</u>	x			
Seychelles	x			
Sierra Leone	x	x		
Singapore	x			
<u>Slovakia</u>	x			X
Slovenia	x	x		X
Solomon Islands	x			
Somalia	x			
South Africa	x			
<u>South Sudan</u>				
Spain	x	x	x	X
Sri Lanka	x			
Sudan	x			
Suriname	x			
<u>Swaziland</u>	x			
Sweden	x	x	x	
<u>Switzerland</u>	x	x		
Syrian Arab Republic		x		
<u>Tajikistan</u>				
Thailand	x			
<u>Rep. of Macedonia</u>	x			
Togo	x			
Timor-Leste				
Tonga	x	x		
Trinidad & Tobago	x			X
Tunisia	x	x	x	X
Turkey				
<u>Turkmenistan</u>				
Tuvalu	x			
<u>Uganda</u>	x			
Ukraine	x			
United Arab Emirates	x	x		

United Kingdom	x	x	x	
Un. Rep. of Tanzania	x			
United States		x		
Uruguay	x			
<u>Uzbekistan</u>				
Vanuatu	x	x		
Venezuela				
Viet Nam	x			
Yemen	x	x		
<u>Zambia</u>	x			
<u>Zimbabwe</u>	x			
Associate Members				
Hong Kong, China		x	x	
Macao, China		x		
Faroe Islands		x		
<u>Landlocked states</u>				

12. Ratification of UNCLOS, Salvage Law Convention and 2001 UNESCO Convention⁴⁹⁴

The first data that immediately comes into view is the almost universal ratification of the UNCLOS (166 states on 197)⁴⁹⁵. On the contrary the 1989 Salvage Law Convention and the 2001 UNESCO Convention have been ratified till now by a significant, but still limited, number of States (respectively 62 and 41 States). This result is, on one side, due to the fact that the UNCLOS was adopted respectively 7 and 19 years before the 1989 Salvage Law Convention and the 2001 UNESCO Convention; on the other side, the UNCLOS, regulating all the maritime issues as a whole, has achieved in the years a wide success at international level. The analysis below (par. 4.1) tries to propose a more in-depth interpretation of these empirical data.

Second, these conventions have been ratified mainly by maritime states, but also by some landlocked states. Thirty-three landlocked states have ratified the UNCLOS. Part X of UNCLOS specifically regulates the landlocked states' right to access to and from the sea and

⁴⁹⁴ These data were last updated in July 2012. Data sources:

UNCLOS: http://www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm;

Salvage Law Convention: <https://imo.amsa.gov.au/public/parties/salvage89.html>;

Reservation art. 30, par. 1 (d): <http://www.minbuza.nl/en/key-topics/treaties/search-the-treaty-database/1989/4/003805.html?printpart=reservations>;

2001

UNESCO

Convention:

<http://www.unesco.org/eri/la/convention.asp?KO=13520&language=E&order=alpha>.

⁴⁹⁵ Of the total 197 states, 193 are the U.N. states. The other four are: Cook Islands, Holy See, Niue and Palestine.

the freedom of transit⁴⁹⁶. This explain the wide accession to this Convention by landlocked states. Differently, two landlocked states have ratified the Salvage Law Convention (Azerbaijan and Switzerland) and the 2001 UNESCO Convention (Slovakia and Paraguay). Presumably, the ratification of the Salvage Law Convention is due to the fact that salvage operations can occur in the sea, but also in lakes and rivers. Regarding the 2001 UNESCO Convention, art. 28 states that *"when ratifying, accepting, approving or acceding to this Convention or at any time thereafter, any State or territory may declare that the Rules shall apply to inland waters not of maritime character"*⁴⁹⁷. The underwater cultural heritage is not located only on the seabed, but it can also be discovered in other contexts like, for example, rivers and lakes. Thus, also landlocked states may be interested in the ratification of this Convention (considering, in addition, the benefits achievable through the cooperation system).

Third, fifteen states have not ratified any of these conventions. Most of these states are landlocked states (mainly Central-Asian countries), but among this group there are also maritime states like Eritrea, Israel, Peru, Turkey and Venezuela.

Fourth, for what concern the composition of the states parties, table 12 shows that almost all the 41 States which have ratified the 2001 UNESCO Convention had previously ratified the UNCLOS (with the sole exception of Ecuador and Palestine). But, for the moment, less than a third of the states which have ratified the UNCLOS have also ratified the 2001 UNESCO Convention.

Finally, to date, a significant level of ratifications to the 2001 UNESCO Convention has been achieved in the Mediterranean area, Latin America and the Caribbean. On the contrary the areas in which the adhesion to this Convention has been momentarily weak are the Northern America, Northern Europe, sub-Saharan Africa and the Asian-Pacific region⁴⁹⁸. A possible explanation of this unequal geographical distribution of the states which have ratified the 2001 UNESCO Convention will be presented at the end of this paragraph.

⁴⁹⁶ UNCLOS (1982), *op. cit.*, Part. X.

⁴⁹⁷ UNESCO Convention (2001), *op. cit.*, art. 28.

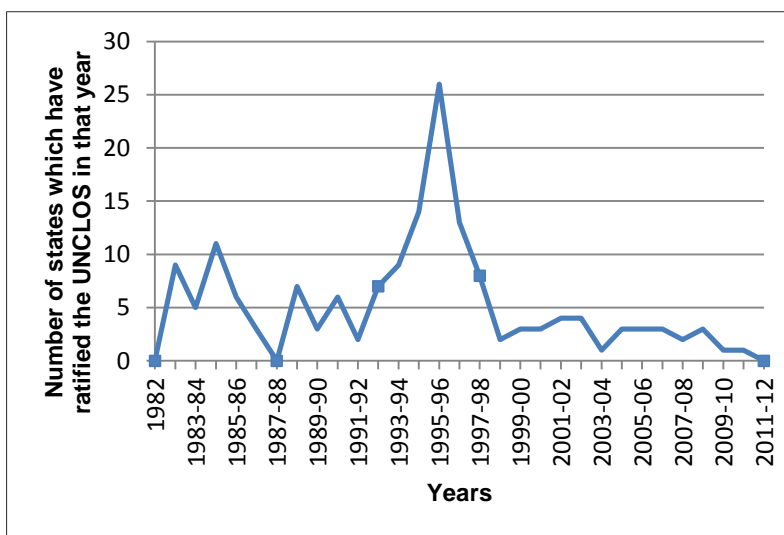
⁴⁹⁸ See Staniforth M., "Asia-Pacific Underwater Cultural Heritage", MUA.

4.1 Comparing the 1982 UNCLOS and the 2001 UNESCO Convention: the constraints that delayed their enforcement

This section aims, first, to interpret the general success of the UNCLOS exploring the states access, over the years, to this Convention. Second, to compare the ratification of the UNCLOS and the 2001 UNESCO Convention in order to understand their “delayed” entrance into force⁴⁹⁹.

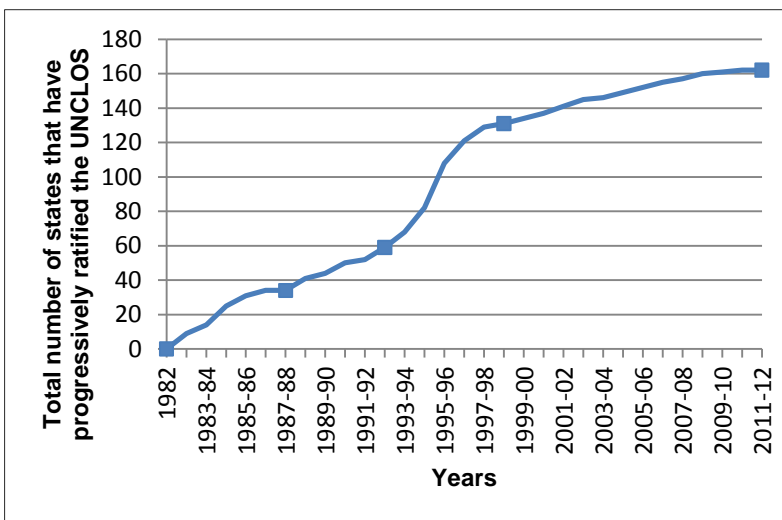
Observing the graphs below (figures 13 and 14) clearly emerges how the process of access to the UNCLOS has faced four main phases:

- a first phase with an immediate considerable good adhesion to the convention, but followed by a strong reduction of the ratifications (1982-88);
- a second phase of regular fluctuations (1988-1993);
- a third phase with a peak of ratifications (1993-1998);
- a fourth phase of gradual stabilization with an average of 2-3 new ratifications per year (1998-2012).



13. Chart illustrating the number of ratifications of the UNCLOS per year

⁴⁹⁹ The 1982 UNCLOS entered into force in 1994, while the 2001 UNESCO Convention entered into force in 2009.



14. Chart illustrating the growing number of states parties to the UNCLOS

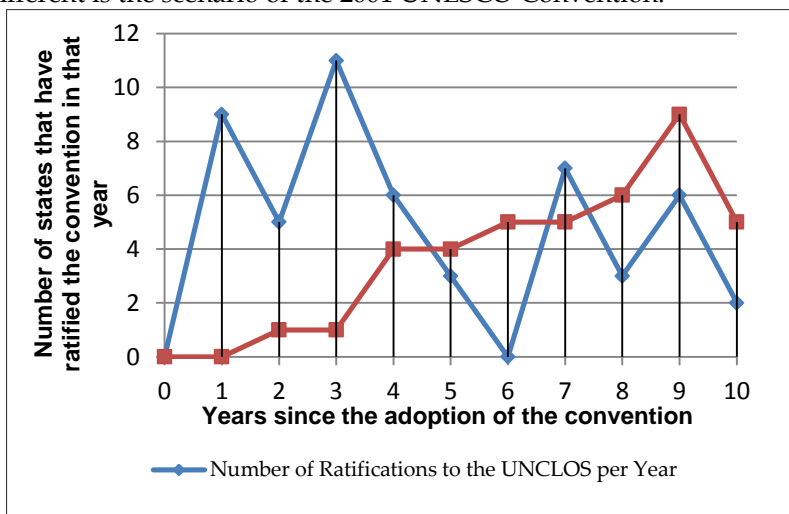
Particularly relevant is that, since its entrance into force (realized on 16 November 1994, after the deposition of the 60th instrument of ratification), the number of states that have ratified the UNCLOS has rapidly grown in the successive years. Different concomitant factors may explain this result, like:

- the adoption, in 1994, of the Agreement related to the implementation of Part XI of the United Nations Convention on the Law of the Sea (that entered into force on 1996)⁵⁰⁰;
- the high number of ratifications already required for the entrance into force of the UNCLOS (thus, on 1994 a significant number of states had already ratified this convention);
- the driving force of some industrialized maritime states and developing countries that ratified the UNCLOS in such years like, for example, Australia, Germany and Singapore in 1994, Italy and India in 1995, France, China and Japan in 1996.

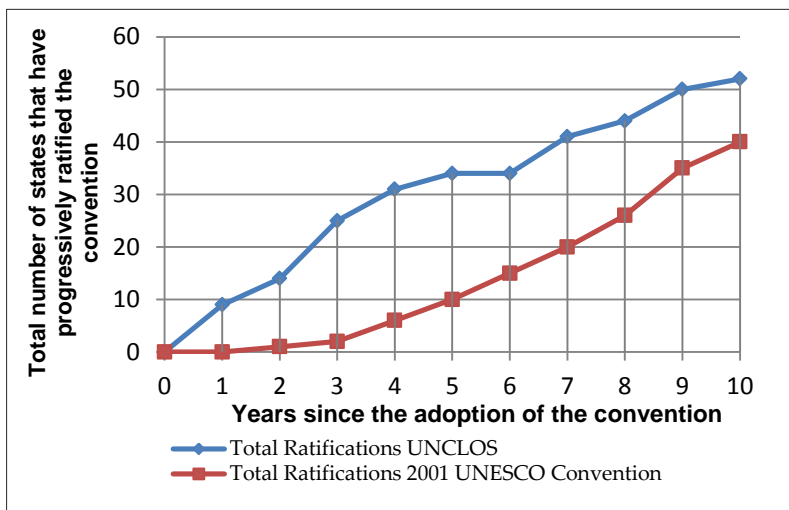
⁵⁰⁰ In 1990 a series of informal consultations among states showed that industrialized states had certain concerns about the UNCLOS provisions, in particular those related to the mining of minerals lying in the international seabed area. After the adoption of the Agreement related to the implementation of Part XI of the UNCLOS an increasing number of industrialized states started to ratify the UNCLOS Convention.

So, UNCLOS has become a point of reference in the international legal system through a process of ratifications that lasted more than 30 years.

Different is the scenario of the 2001 UNESCO Convention.



15. Chart illustrating the number of ratifications per year, in the first 10 years, of the UNCLOS and the 2001 UNESCO Convention



16. Chart illustrating the growing number of states parties to the UNCLOS and the 2001 UNESCO Convention in the firsts 10 years from their adoption

Comparing the number of states which have ratified the UNCLOS and the 2001 UNESCO Convention in the first 10 years from their approval (see charts 15 and 16), unrelated performances of their charts can be observed despite a relatively moderate difference in the final number of ratifications (respectively 52 and 40 ratifications).

At the time of the UNCLOS negotiation there was a strong pressure to regulate the international maritime law, because different political, juridical and economic interests were at stake. Therefore, the text of the UNCLOS, once adopted, immediately obtained a significant number of ratifications (25 states in the first three years). This phase was successively followed by a (short) period of scarce accession to this convention, perhaps due to the scarce enthusiasm expressed by some industrialized countries. Differently, in the early years following its adoption, the 2001 UNESCO Convention experienced a period of stalemate (only 2 ratifications in the first three years), followed by a gradual increase of the ratifications in the successive years. The reasons that caused this “delay” in the ratifications of the 2001 UNESCO Convention are not entirely clear. However, it is possible to make some assumptions that, if evaluated as a whole, may explain the diverse trends of these curves.

First of all, this delay may be explained due to a different assessment of the circumstances. Perhaps, despite a shared vision about the need to develop an international legal system specifically dedicated to the protection of the underwater cultural heritage, several States did not (and, probably, still do not) consider urgent the adoption of the 2001 UNESCO Convention. Staniforth, provocatively, proposes this consideration: *“I remain unconvinced by this kind of rhetoric and suspect that many countries are simply unwilling to expend funds in what is seen to be a relatively ‘unimportant’ area”*⁵⁰¹.

Second, the doubts expressed by some maritime powers (like, for example, UK, US, Germany, France, Russia, Netherlands, etc.) may also have affected other states that, in the absence of a shared global opinion, decided to wait for ratifying the 2001 UNESCO Convention. For example, in the remarks presented by Sweden prior the vote to the 2001 UNESCO Convention, its delegate said that *“Regrettably this text [the 2001 UNESCO Convention] will not gain support from all States, particularly those that are active in our neighboring seas. This makes it*

⁵⁰¹ Staniforth M., “Asia-Pacific Underwater Cultural Heritage”, MUA.

difficult for Sweden to take part in this novel interpretation on international law... Sweden still believes that measures must continue to be taken to protect underwater cultural heritage throughout the world. To this end, Sweden does not exclude adhering to the Convention should it gain a wide acceptance from a majority of States representing all categories of concerned States neighboring the Baltic Sea"⁵⁰². It is therefore possible that the eventual decision of certain states to ratify the 2001 UNESCO Convention may drive other states to do the same (as happened for the ratification of the UNCLOS)⁵⁰³.

Third, several states were probably waiting (or still are waiting) some clarifications about the "constructive ambiguities" adopted by the 2001 UNESCO Convention. As remarked by the Japanese delegate prior to vote the text of the Convention: *"there is no denying the fact that, as a result of compromising efforts to absorb different views and positions to the extent possible, we had to sacrifice clarity from time to time"* ⁵⁰⁴.

The joint effects of these three factors have delayed the entrance into force of the 2001 UNESCO Convention, which took place only in 2009 (around 7 years after its adoption).

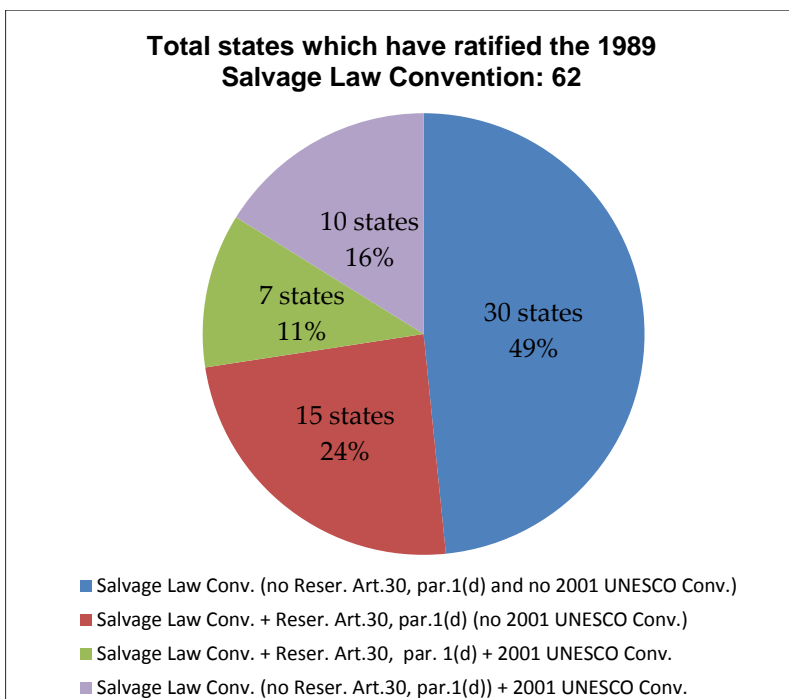
4.2 Comparing the 1989 Salvage Law Convention and the 2001 UNESCO Convention: the co-existence of two conflicting international regimes

This section aims to explain why, at international level, there are still two divergent regimes dealing with the underwater cultural heritage. Analyzing in-depth the states that have ratified the 1989 Salvage Law Convention (see chart 17) interesting considerations come out.

⁵⁰² Remarks Prior to Vote during Debates in Commission IV on Culture (29 October 2001, 31st Session of the General Conference, UNESCO), reported in Garabello R. and Scovazzi T. (2003), *op. cit.*, pp. 249-250.

⁵⁰³ Therefore, the plausible ratification of France and Australia in 2013 could be a turning point. Other states overlooking the Mediterranean Sea and the Pacific Ocean as well as other federal states could then be "encouraged" to ratify the 2001 UNESCO Convention.

⁵⁰⁴ Remarks Prior to Vote during Debates in Commission IV on Culture (29 October 2001, 31st Session of the General Conference, UNESCO), reported in Garabello R. and Scovazzi T. (2003), *last op. cit.*, p. 243.



17. Chart showing the attitude of the states which have ratified the 1989 Salvage Law Convention in relation to reservation of art. 30, par. 1(d) and 2001 UNESCO Convention

Of the 62 states which have ratified the 1989 Salvage Law Convention, 22 states (around a third of the total number) have resorted to the reservation of art. 30, par. 1 (d), which permits them to exclude the application of the salvage law system for “*maritime cultural property of prehistoric, archaeological or historic interest*”. Numerically, the considerable recourse to this reservation may already raise some doubts about the presumed status of customary international law of the salvage law regime applied to the underwater cultural heritage. But chart 17 shows something more.

To begin with, there is a first group of 17 states which have ratified both the 1989 Salvage Law Convention and the 2001 UNESCO Convention. For all these states the application of the salvage law to the underwater cultural heritage will be limited to such few (if any) circumstances able to respect the criteria expressed by art. 3 of the 2001 UNESCO Convention (regardless of the fact that these states have or have not resorted to the reservation of art. 30, par. 1 (d)).

Moreover, there is a second group of 15 states which have ratified the Salvage Law Convention, they have recurred to the reservation of art. 30, par. 1 (d), but they have not ratified (at least for the moment) the 2001 UNESCO Convention. Considering the presumed reasons behind this choice it is possible to divided the states composing this group in three categories:

- federal states (like, for example, Australia and Canada) that, despite an expressed appreciation toward the 2001 UNESCO Convention principles, face some challenges to coordinate State and federal legislation with the provisions expressed by the Convention;
- states (such as, for example, UK, Russia, Norway, the Netherlands) which still have doubts or complains about certain provisions of the 2001 UNESCO Convention;
- states (like, for example, Sweden and Finland) which are unwilling to ratify the Convention due to a lack of global/regional support.

While for the first and third category the ratification of the 2001 UNESCO Convention may be just a question of time, the main obstacle toward a global adhesion to the 2001 UNESCO Convention is probably represented by the second category. Hopefully the work of the UNESCO staff and of the Scientific and Technical Advisory Body aimed to spread and clarify the goals and the provisions of the 2001 UNESCO Convention may dissipate the doubts of these skeptical states.

In any case, overall, there are 32 states which have ratified the Salvage Law Convention and, moreover, they have recurred to the reservation of art. 30. par. 1 (d) and/or they have ratified the 2001 UNESCO Convention. This data may be interpreted as the refusal, by almost half of the states (51%) which have ratified the 1989 Salvage Law Convention, to apply its provisions for matters related to the underwater cultural heritage⁵⁰⁵.

⁵⁰⁵ However it must be noted that between the states composing this group there is the United Kingdom which, contrary to this interpretation, has signed several contracts with historic salvage companies. An example is the *Partnering Agreement Memorandum Concerning the Shipwreck HMS Sussex* contracted by the Government of the United Kingdom of Great Britain and Northern Ireland and Odyssey Marine Exploration, Inc. See the web-page: <http://shipwreck.net/pam/>.

This consideration involve two important consequences. First of all, it supports the theory which excludes the existence of an international customary law related to the salvage of ancient shipwrecks. Second, it confirms that globally two different legal systems still regulate the activities directed to the underwater cultural heritage: the 2001 UNESCO Convention and the Salvage Law regime. But while the first aims to protect the underwater cultural heritage for the public interest, the second protects the private interests considering the underwater cultural heritage as a commercial commodity.

This co-existence of two different and, for certain aspects, conflicting international legal regimes linked to the underwater cultural heritage as well as the unequal geographical distribution of the adhesion to the 2001 UNESCO Convention may be partially explained considering the Merryman's distinction between 'Market States' and 'Source States'.

'Market States' are those states in which "*the demands [of cultural properties] exceeds the supply*"⁵⁰⁶. In other terms, this group enrolls all those states (like, for example, USA, Canada, the Netherlands, Japan, Australia, the Scandinavian countries, etc.) which have a primarily interest in the acquisition and collection of foreign cultural goods. On the contrary in "Source States" "*the supply of desirable cultural property exceeds the internal demand*"⁵⁰⁷. So, 'Source States' are those states (such as, for example, Mexico, Egypt, Italy, Greece, China, India, etc.) from which the cultural goods originally come. Of course a state can be both a producer and a consumer of cultural goods. This division simply distinguishes which of these two philosophies seems to prevail.

In general, according to the Merryman, 'Market States' supports the legal trade of cultural goods, considering them as components of a common human culture which enjoyment should transcend their places of origin. According to this view it is better, for example, to display an ancient roman amphorae in a US museum rather than keeping it unavailable in the storage of an Italian museum or letting it unprotected and unmanaged underwater with the consequent risk of its destruction or pillaging.

On the other side, 'Source States' supports the idea that cultural goods should be retained and managed by those states where they have been

⁵⁰⁶ Merryman J. H., "Two ways of Thinking About Cultural Property", *The American Journal of International Law*, Vol. 80, 1986, p. 832.

⁵⁰⁷ Merryman J. H. (1986), *last op. cit.*, p. 832.

produced or with which they have the closer cultural link. So, in these countries prevail a sort of “cultural nationalism” which “*implies the attribution of national character to objects, independently of their location or ownership*”⁵⁰⁸.

At first glance this division seems perfectly able to theoretically explain the underwater cultural heritage legal context: from one hand there are the ‘Market States’ which sustain the merchantability of this heritage according to a fixed legal system (the Historic Salvage Law regime) and, on the other hand, the ‘Source States’ that, condemning the commercial exploitation and dispersion of this heritage, have ratified the 2001 UNESCO Convention.

But this analysis does not take into consideration a fundamental aspect: most of the ‘Market States’ are actually maritime powers too. Inevitably these states are or are going to be primarily ‘Source States’ for what concern the underwater cultural heritage. Examples are the Netherlands with its ancient shipwrecks located in different part of the world (from the Baltic Sea to the Indian Ocean) or, for the next future, the United States with its relicts of the first and second World War.

Accordingly, but also paradoxically, some of these states have almost reversed their views when dealing with the underwater cultural heritage. Hence, from one hand, their potential acceptance of the historic salvage law is accompanied by an un-negotiable request that activities directed at sunken state vessels must be authorized by the respective flag states; on the other hand, despite a high appreciation towards its general principles and Rules, their ratification of the 2001 UNESCO Convention is obstructed by the (wrong) perception that it may limit the rights of the flag states extending, on the contrary, those of the coastal states⁵⁰⁹.

Regardless of its origin, the existence of two international systems dealing with the same cultural goods, but for different and contrasting aims can be problematic. O’Keefe, for example, correctly underlines that “*although a particular national law may not recognize any application of salvage law to wrecks lying on the seabed, salvage law may be applied by a*

⁵⁰⁸ Merryman J. H. (1986), *last op. cit.*, p. 832.

⁵⁰⁹ As a result, to date, the international position of these states is in a kind of “juridical limbo” where both the Salvage Law regime and the 2001 UNESCO Convention are perceived as unsatisfactory solutions for the management of the underwater cultural heritage.

court in another State acting extraterritorially. This could well lead to a conflict of jurisdiction and perhaps actual conflict if one side decides to ignore the other”⁵¹⁰. In the case of the Lusitania, for example, the United States District Court of Virginia assigned ownership and (partial) salvage rights over this wreck, located within Irish territorial waters, to a private person of New Mexico. However, the Irish Government did not recognize such sentence and, on the contrary, approved an order that prohibited the diving and the recovery of artifacts from the Lusitania without the expressed consent of the Irish competent authorities⁵¹¹. Thus, the affirmation of a unique international legal system for the protection and management of the underwater cultural heritage, possibly represented by the 2001 UNESCO Convention, is the most desirable option to reduce the risk of clashes. From this point of view, the contribution of the Annex to the 2001 UNESCO Convention is extraordinary since its Rules are gradually becoming the international standard parameters for the underwater archaeological researches.

5. Title and sovereign immunity of ancient sunken state vessels: are they principles of customary international law?

Several states have officially justified their decision to not ratify the 2001 UNESCO Convention due to its provisions related to state vessels and aircraft. These states have, in particular, criticized art. 7, par. 3 which affirms that within its archipelagic waters and territorial sea the coastal state “*should inform*” the flag states on the best methods of protecting their state vessels and aircraft. According to these states a more binding solution, and not only a ‘suggestion’, should be adopted. Actually, during the negotiations some maritime powers tried to promote a more strict provision (“*shall inform*” rather than “*should inform*”), but the majority of the other states, leaded by the ex-colonial countries, refused such modification. Thus art. 7, par. 3 should be considered as a solution of compromise which balances two contrasting perspectives: from one hand, the classic maritime powers which intend to defend their interests in the management of their vessels and aircraft

⁵¹⁰ See O’Keefe P. J. (2002), *op. cit.*, p. 62.

⁵¹¹ On this case see Delgado J. P. (Edited by, 1997), *op. cit.*, pp. 248-249. Notice that the Lusitania sank in 1915. Therefore, to date, this wreck cannot be considered yet as an underwater cultural site according to the definition provided by the 2001 UNESCO Convention.

sunken around the world; and, on the other hand, the ex-colonial countries which do not want interferences with their sovereign rights.

In any case, as expressed by art. 3, the 2001 UNESCO Convention does not modify already existing rights and duties of international law and art. 2, par. 8 precisely states that nothing in the 2001 UNESCO Convention “shall be interpreted as modifying the rules of international law and State practice pertaining to sovereign immunities”⁵¹². Accordingly, art. 7, par. 3 cannot reverse eventual flag states’ rights established by the customary and/or the conventional international law. As a consequence defining if flag states retain title over their ancient sunken state vessels and whether or not these vessels enjoy the benefit of the sovereign immunity are questions that transcends the context of the 2001 UNESCO Convention.

These are relevant aspects in the sphere of the salvage law too. For example, art. 4, par. 1 of the 1989 Salvage Law Convention establishes that “*this Convention shall not apply to warships and other non-commercial vessels owned or operated by a State and entitled, at the time of salvage operations, to sovereign immunity under generally recognized principles of international law unless that State decides otherwise*”⁵¹³. Art. 25 adds that “*unless the State owner consent, no provision of this Convention shall be used as a basis for the seizure, arrest or detention by any legal process of, nor for any proceedings in rem against, non-commercial cargoes owned by a State and entitled, at the time of the salvage operations, to sovereign immunity under generally recognized principles of international law*”⁵¹⁴. So, clarifying the title and the sovereign immunity issue is a significant step to propose a correct interpretation and application of both the 2001 UNESCO Convention and the 1989 Salvage Law Convention.

The analysis of the sovereign immunity issue is necessarily linked to the conservation of title over sunken state vessels because warships and other non-commercial governmental vessels may enjoy the benefit of the sovereign immunity as long as they are owned by a state. As affirmed by Forrest “*if a state abandons ownership of a state vessel, the principle of sovereign immunity will not apply*”⁵¹⁵. However, as underlined by the same author, “*it may be that even where a state does not abandon ownership of a sunken vessel in another state’s territorial waters, the principle*

⁵¹² UNESCO Convention (2001), *op. cit.*, art. 2, par. 8.

⁵¹³ IMO (1989), *op. cit.*, art. 4, par. 1.

⁵¹⁴ IMO (1989), *last op. cit.*, art. 25.

⁵¹⁵ Forrest C. (2003 b), *op. cit.*, p. 42.

of sovereign immunity may still not apply, thus leaving the coastal state with jurisdiction over the sunken vessel while the flag state continues to own it”⁵¹⁶.

Three key questions must be explored in order to clarify this issue.

First of all, is the title over the sunken states vessels affected or not by the passage of time and/or by the location where they lay?

Second, do state vessels keep their sovereign immunity feature even in the circumstance they should sink? If it is so, their sovereign immunity is or not affected by the passage of time and/or by the place where the sunken vessels lay?

Third, which are the juridical consequences in relation to the management of a sunken state vessel discovered in the territorial sea of a foreign state? How do they affect the interpretation of the 2001 UNESCO Convention?

Different hypothesis (here below schematized) must be considered to answer the first two questions:

- the title over sunken state vessels and aircraft is affected by the time and/or the location they sank;
- the title over sunken state vessels and aircraft is not affected by the time and/or the location they sank, but:
 - o sunken state vessels and aircraft do not enjoy sovereign immunity;
 - o sunken state vessels and aircraft benefit of the sovereign immunity for a limited period of time (like, for example, for 50 or 100 years from the moment in which they sank) or in relation to the place they sank;
 - o sunken state vessels and aircraft benefit of sovereign immunity without any limit of time and regardless their location.

To begin with, several maritime powers have explicitly sustained the existence of a customary international law related to the ownership and the sovereign immunity of sunken government vessels⁵¹⁷.

In the United States Policy for the Protection of Sunken Warship is stated that *“Pursuant to the property clause of Article IV of the Constitution,*

⁵¹⁶ Forrest C. (2003 b), *last op. cit.*, p. 42.

⁵¹⁷ All the statements quoted below in the text are reported in: United States, Federal Register, Vol. 69, No. 24, 5 February 2004.

the United States retains title indefinitely to its sunken State craft unless title has been abandoned or transferred in the manner Congress authorized or directed. The United States recognize the rule of international law that title to foreign sunken craft may be transferred or abandoned only in accordance with the law of the foreign flag State. Further, the United States recognizes that title to a United States of foreign sunken State craft, wherever located, is not extinguished by passage of time, regardless of when such sunken State craft was lost at sea”.

In the view of France “in accordance with the 1982 United Nations Convention on the Law of the Sea... and Customary Law, every State craft... enjoys sovereign immunities, regardless of its location and the period elapsed since it was reduced to wreckage (general principle of non limitation of rights of States). The primacy of the title of ownership is intangible and inalienable: no intrusive action may be taken regarding a French sunken State craft, without the express consent of the French Republic, unless it has been captured by another State prior sinking. But this primacy does not forbid the State to freely renounce, whenever it wants to and in a formal way, to use some of its right on the wreck (except its ownership)”.

According to Germany “under international law, warships and other vessels or aircraft owned or operated by a State and used only on government non-commercial service (“State vessels and aircraft”) continue to enjoy sovereign immunity after sinking, wherever they are located. The Federal Republic of Germany also retains ownership of any German State vessel or aircraft owned by it or the German Reich at the time of its sinking. Further, many sunken warships and aircraft are maritime graves, which have to be respected. No intrusive action may be taken in relation to German State vessels or aircraft without the express consent of the German Government”. The German government confirmed this position after the discovery of the battleship Bismarck (1989): “the Federal Republic of Germany considers itself the owner of the former sovereign Battleship Bismarck. Diving excursions to the interior of the wreck as well as recovery attempts require consent of the Federal Government. This has been categorically denied in other cases of sunken ships of the World Wars, because one must expect to find remains of the dead in the wreck. The Federal Republic feels it is its duty to protect the seamen who went to their death in the sinking of the ship. Following international customs, we view the wreck of the Bismarck as a seamen’s burial site that must be accorded proper respect”⁵¹⁸.

⁵¹⁸ See the Wreck of the Battleship Bismarck web site: <http://www.kbismarck.com/wreck.html>, last access 03/08/2012.

Similar considerations have been expressed by Japan: *“according to international law, sunken State vessels, such as warships and vessels on government service, regardless of location or of the time elapsed remain the property of the State owning them at the time of their sinking unless it explicitly and formally relinquishes its ownership. Such sunken vessels should be respected as maritime graves. They should not be salvaged without the express consent of the Japanese Government”*.

The opinion of the Russian Federation is that *“under international law of the sea all the sunken warships and government aircraft remain the property of their flag State. The Government of the Russian Federation retains ownership of any Russian sunken warship, including the warships of the Russian Empire and the Soviet Union, regardless the time they sank. These craft are considered places of special governmental protection and cannot be salvaged without special permission of the Government of the Russian Federation”*.

In the perspective of Spain *“in accordance with Spain and international law, Spain has not abandoned or otherwise relinquished its ownership or other interests with respect to such vessels and/or its contents... the Embassy of Spain accordingly wishes to give notice that salvage or other disturbance of sunken vessels or their contents in which Spain has such interests is not authorized and may not be conducted without express consent by an authorized representative of the Kingdom of Spain”*.

Finally, the United Kingdom expressed the view that *“under international law, warships, naval auxiliaries, and other vessels or aircraft owned or operated by a State and used only on government non-commercial service (“State vessels and aircraft”) enjoy sovereign immunity. State vessels and aircraft continue to enjoy sovereign immunity after sinking, unless they were captured by another State prior to sinking or the flag State has expressly relinquished its rights. The flag State’s rights are not lost merely by the passage of time. Further, many sunken State vessels and aircraft are maritime graves, which should be respected. No intrusive action may be taken in relation to the United Kingdom’s sovereign immune State vessels or aircraft without the express consent of the United Kingdom”*.

Thus, all these maritime powers have expressed a shared position that could be synthesized in four points:

- states retain title on their governmental vessels and aircraft, regardless the location and time they sank;
- state vessels and aircraft enjoy sovereign immunity irrespective of the time passed;

- the governmental shipwreck sites are resting places - military graves that deserve proper respect;
- salvage operations on sunken state vessels cannot be conducted without the explicit authorization of the competent flag state.

According to these states the above four points are expressions of the international customary law. Unfortunately the author has not found further governmental official statements on these issues. Thus, it is not yet clear to what extent this position is shared by other states. The refusal of the ex-colonial countries to adopt a more binding solution for art. 7, par. 3 of the 2001 UNESCO Convention may suggest a different viewpoint on these topics.

Interesting considerations concerning the ownership and sovereign immunity issue have been also expressed in bilateral agreements related to sunken government vessels. Different cases may be quoted to support the theory which sustains that flag states hold indefinite title to their sunken state vessels.

The already mentioned 1972 Agreement between the Netherlands and Australia concerning old Dutch Shipwrecks affirms at art. 1 that *“the Netherlands, as successor to the property and assets of the V.O.C. , transfers all its right, title and interest in and to the wrecked vessel of the V.O.C. lying on or off the coast of the State of Western Australia and in and to any articles thereof to Australia which shall such rights, title and interest”*⁵¹⁹.

The 1989 Agreement between the Government of the United States of America and the Government of the French Republic concerning the wreck of the *CSS Alabama* establish at art. 2 that *“any measure related to scientific activities or any project concerning the development of the wreck of the CSS Alabama shall be reviewed by the Scientific Committee, which shall make its decisions by agreement of the representatives of both Governments”*⁵²⁰. Moreover art. 3 adds that *“neither Party shall take*

⁵¹⁹ Agreement between The Netherlands and Australia Concerning Old Dutch Shipwrecks (1972), *op. cit.*, art. 1.

⁵²⁰ United States of America and French Republic, Agreement between the Government of the United States of America and the Government of the French Republic concerning the wreck of the *CSS Alabama*, 1989, art. 2.

measures adversely affecting the wreck or its associated artifacts without the agreement of the other Party"⁵²¹.

In the exchange of notes between South Africa and the United Kingdom Concerning the Regulation of the Term of the Settlement of the Salvaging of the Wreck of *HMS Birkenhead* (1989), the UK ambassador of Pretoria defines the conditions (afterwards accepted by the South African government) for the eventual salvage and management of the wreck. But the note also explicitly states that "*this settlement is without prejudice to the respective legal positions of our two Governments*"⁵²².

The 1997 Memorandum of Understanding between the Governments of Great Britain and Canada pertaining to the Shipwrecks *HMS Erebus* and *HMS Terror* establishes, at point two, that "*Britain, as owner of the wrecks, hereby assigns custody and control of the wrecks and their contents to the Government of Canada, and acknowledges Canada as its agent for purposes of its Understanding. In so doing, Britain does not waive ownership or sovereign immunity with respect to the wrecks or their contents while they are on the sea bed, but accepts that any site investigation, excavation or recovery of either of the wrecks or their contents will be under Canada's control*"⁵²³.

In the accord entre le Gouvernement de la République française et le Gouvernement des Etats-Unis d'Amérique concernant l'épave de *La Belle*, art. 1, par. 2 states that "*La République française n'a ni abandonné ni*

⁵²¹ Agreement between the Government of the United States of America and the Government of the French Republic concerning the wreck of the *CSS Alabama* (1989), *last op. cit.*, art. 3.

⁵²² See the document South Africa and United Kingdom, Exchange of notes between South Africa and the United Kingdom Concerning the Regulation of the Term of the Settlement of the Salvaging of the Wreck of *HMS Birkenhead*, Pretoria, 1989. More information about the *HMS Birkenhead* case are available in Gribble J., "HMS Birkenhead and the British warship wrecks in South African waters", in S. Gallagher (edited by), *Shared Heritage: Joint Responsibilities in the Management of British Warship Wrecks overseas*, seminar collected papers, 8th July 2008, at the University of Wolverhampton, English Heritage, Swindon, 2009.

⁵²³ Great Britain and Canada, Memorandum of Understanding between the Governments of Great Britain and Canada pertaining to the Shipwrecks *HMS Erebus* and *HMS Terror*, N.D., 1997, point 2.

transferé son droit de propriété sur l'épave de La Belle et exerce toujours les mêmes droits sur ladite épave"⁵²⁴.

In the case of the *HMS Sussex*, an English warship sunken in 1694 in the waters of the Alboran sea, Spain and the United Kingdom reached an agreement according to which "*en el caso de que se compruebe que el buque es el HMS Sussex, España reconocerá que el pecio, sus pertenencias y contenidos son propiedad del Reino Unido en virtud de las normas de Derecho Internacional aplicables*"⁵²⁵.

Another example is related to the Japanese two-man midget submarine which sunk before the bombing to Pearl Harbor on 7th December 1941 ("*the first shot in the war of the Pacific*"). The U.S. and Japanese governments have "*exchanged diplomatic notes agreeing that: the US owned and controlled the midget sub*"⁵²⁶. Other remarkable cases solved through mechanisms of cooperation are, for example, the *HMS Swift* (coop. between the governments of UK and Argentina), the material from the *HMB Endeavour*, the *HMS Sirius* and the *HMS Pandora* (coop. between the governments of UK and Australia), and the *Avondster* (coop. between the governments of the Netherlands and Sri Lanka)⁵²⁷.

In some of the cases exposed above the negotiated bilateral agreements have solved the ownership issue through specific references in their texts. In others, as underlined by Forrest, "*the agreement does not necessary recognise the claim of ownership of the flag State at all, and the agreements simply proceed on the basis that the States will co-operate in the recovery of the vessel, and in some way share the proceeds or artefacts*

⁵²⁴ United States of America and French Republic, Accord entre le Gouvernement de la République française et le Gouvernement des Etats-Unis d'Amérique concernant l'épave de *La Belle*, Washington, 2003.

⁵²⁵ Spain and United Kingdom, Acuerdo entre España y Reino Unido para realizar una prospección subacuática para la identificación del pecio del *HMS Sussex*, N.D., 2007. On this agreement see also Dromgoole S., "Murky waters for government policy: the case of a 17th century British warship and 10 tonnes of gold coins", *Marine Policy*, Vol. 28, 2004.

⁵²⁶ See Van Tilburg H., "Japanese Midget Sub at Pearl Harbor: Collaborative Maritime Heritage Preservation", in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006, p. 69.

⁵²⁷ About the *HMS Swift* see Elkin D., "Case Study: HMS Swift - Argentina", in S. Gallagher (edited by), *Shared Heritage: Joint Responsibilities in the Management of British Warship Wrecks overseas*, seminar collected papers, 8th July 2008, at the University of Wolverhampton, English Heritage, Swindon, 2009. About the *Avondster* check Manders M., "The In Situ Protection of a Dutch Colonial Vessel in Sri Lankan Waters", in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006.

recovered”⁵²⁸. However the fact that the coastal states have planned with the relative flag states any intended activities on their sunken state vessels may implicitly testify the recognition of certain (ownership) rights held by the flag states. On the contrary these cases give no or few indications about the issue of sovereign immunity for sunken state vessels, which is recalled and unequivocally recognized only in the Memorandum of Understanding related to the shipwrecks *HMS Erebus* and *HMS Terror*.

Concerning the case law, in the last 20 years a convincing trend on the ownership issue has been affirmed despite a relatively limited number of relevant cases.

In the case *United States of America v. Richard Steinmetz*, related to the bell recovered from the wreck of *CSS Alabama* (which sank 1864), the Court of Appeals for the Third Circuit established that “*the United States cannot abandon its own property except by explicit acts*”, thus recognizing the title of the United States over the *Alabama’s* bell⁵²⁹. However, considering that this conclusion was achieved interpreting Art. IV, Sect. 2, Clause 2 of the United States Constitution, it may produce consequences at national level, but it does not constitute a relevant base concerning the formation of international customary law.

More relevant on this aspect is the already mentioned case law concerning the shipwreck *Juno* and *La Galga* where the Court of Appeals for the Fourth Circuit stated that “*under admiralty law, where an owner comes forward to assert ownership in a shipwreck, abandonment must be shown by express acts*”⁵³⁰. In addition, the Court asserted that “*courts cannot just turn over the sovereign shipwrecks of other nations to commercial salvors where negotiated treaties show no sign of abandonment, and where the nations involved all agree that title to the shipwrecks remains with the original owner. Far from abandoning these shipwrecks, Spain has vigorously asserted its ownership rights in this proceeding. Nothing in the law of admiralty suggests that Spain has abandoned its dead by respecting their final resting place at sea*”⁵³¹. Thus, the theory which requires an explicit act of

⁵²⁸ Forrest C., “Culturally and Environmentally Sensitive Sunken Warship”, *Australian & New Zealand Maritime Law Journal*, vol. 26, N°1, 2012, p. 84.

⁵²⁹ United States Court of Appeals for the Third Circuit, *United States of America v. Richard Steinmetz*, case No. 973 F.2d 212, 7 April 1992, par. 63.

⁵³⁰ United States Court of Appeals for the Fourth Circuit (2000), *op. cit.*, p. 11.

⁵³¹ United States Court of Appeals for the Fourth Circuit (2000), *last op. cit.*, p. 21.

abandonment to determine that a state has lost title over one of its sunken governmental vessels is here considered as legally binding⁵³².

This position is confirmed by the recent case related to the *Nuestra Señora de las Mercedes*. In the sentence of the Court of Appeals it is stated that “the fact that the Mercedes has been sitting on the ocean floor for over 200 years does not negate Spain’s property interest in the shipwreck... The shipwreck of the Mercedes is thus unquestionably the property of Spain”⁵³³. In this case the court considered also the sovereign immunity of the *Nuestra Señora de las Mercedes*, but in relation to the national law of the Foreign Sovereign Immunity Acts [FSIA]. The final sentence stated that this Spanish vessel was immune from judicial arrest under the FSIA.

On the base of these considerations, seems that the flag states’ title over their sunken state vessels is maintained regardless the passage of time or the place where they sank. Moreover, the above mentioned agreements and the case law of the last 20 years not only confirm a settled practice on this issue, but they also demonstrate that this custom, despite its recent origin, is nowadays spontaneously perceived by states as socially and legally binding. Thus, this is a principle of customary international law.

On the contrary, there are still some doubts about the sovereign immunity issue. According to some experts sunken government vessels, losing their characteristic of navigation, ceased to be ships and, consequently, they also lose their sovereign immunity status, although the related flag state continues to own them as wrecks. The authors who sustain this position often exemplified their arguments through the *Glomar Explorer* incident of 1974. In such circumstance the United states raised a sunken Soviet submarine located in international waters, only seven years after its sinking and despite the absence of an express act of abandonment⁵³⁴.

⁵³² On this case law see also Murphy, “Ownership of Sunken Spanish Warships”, *The American Journal of International Law*, Vol. 94, No. 4, Oct 2000.

⁵³³ United States Court of Appeals for the Eleventh Circuit (2011), *op. cit.*, p. 30.

⁵³⁴ Authors who sustain this theory are, for example, Caflish L., “Submarine Antiquities and the International Law of the Sea”, *Netherlands Yearbook of International Law*, vol. 13, 1982 and Riphagen W., “Some reflections on ‘functional sovereignty’”, *Netherlands Yearbook of International Law*, vol. 6, 1975.

However, this interpretation is not entirely convincing. The sovereign immunity is a status that states reciprocally recognized and conferred each other to safeguard their national security and governmental activities. Therefore the fact that a state vessel may lose its feature of navigability does not affect the right of the flag state to protect the secret information and the sensitive material transported (or directly represented) by the vessel. Moreover, the case of the *Glomar Explorer* is an exception and, as Forrest correctly underlines, “*in the Glomar Explorer incident, the United States conducted its operations clandestinely, suggesting that the United States may have been sensitive to the possibility that the recovery was illegal under international law*”⁵³⁵.

What it is still unclear is if the status of sovereign immunity on sunken state vessels is retained regardless the passage of time (and therefore it is applicable for ancient sunken state vessels too) or it is limited to a certain period of time.

This uncertainty is reflected at academic level where opinions may be divided between those experts (like, for example, Aznar-Gomez and Roach) who affirm that “*the practice of States and the status of international conventions currently in force confirm the view that the rule of immunity still applies to sunken State vessels*”⁵³⁶, and other authors (such as, for example, Bederman and Boesten) who, reluctantly, believe that “*there has recently been a careful and concerted effort to contrive a pattern of state practice and to pass it off as established and binding customary international law*”⁵³⁷.

As a whole, the position expressed by some of the main maritime powers and the last sentences of admiralty law seem to affirm a sort of ‘infinite immunity’, but there is not a clear indication that the customary international law already endorses this view.

The consideration expressed by Mainetti adds further doubts: “*Tali interessi [related to the sovereign immunity status], presunti o reali che siano, non possono, però, essere fatti valere in eterno. Col tempo, infatti, il material bellico invecchia, diviene obsoleto e la minaccia per la sicurezza si affievolisce, facendo sì che l’immunità non abbia più senso. Dunque, a ben*

⁵³⁵ Forrest C. (2003 b), *op. cit.*, p. 45.

⁵³⁶ Aznar-Gómez M. J., “Treasure hunters, sunken state vessels and the 2001 UNESCO Convention on the Protection of Underwater Cultural Heritage”, *The International Journal of Marine and Coastal Law*, Vol. 25, No. 2, 2010, p. 223.

⁵³⁷ Bederman D. J. (2002), *op. cit.*, p. 115.

vedere, soltanto per un piccolo numero di relitti è giustificabile la pretesa dell'immunità: non certamente per quelli storici. Se la volontà di tutelare i segreti di un sottomarino a propulsione nucleare è legittima, non pare esserlo la pretesa di far valere l'immunità per un galeone del XVII secolo, che ha completamente perduto il suo carattere di temibile segreto militare... Naturalmente, il venir meno dell'immunità su un relitto non comporterà l'automatica estinzione dei diritti di proprietà sullo stesso"⁵³⁸. This solution, which proposes a time barrier for the sovereign immunity of sunken state vessels, is appealing and logical from an argumentative perspective. Nevertheless, it implies a series of weak points: for how many years a sunken state vessels may enjoy the sovereign immunity status? According to which parameters the time barriers should be fixed? Nowadays no conventional or customary international law define a time-limit for the sovereign immunity of state sunken vessels. Moreover, taking into consideration the positions expressed on this issue by the maritime powers it seems also hard that a time-limited sovereign immunity will be ever negotiated. Therefore, this proposal seems just a theoretical hypothesis.

At the same time, the absence of unequivocal data do not permit to affirm with certainty the existence of a customary international law about an "endless" sovereign immunity of ancient sunken state vessels.

In any case if, as sustained by the author, the international customary law enrolls the principle according to which the title over sunken state vessels is maintained regardless the passage of time and the location of the wrecks, then important consequences may arise concerning the interpretation of the 2001 UNESCO Convention.

First of all, states have the legal duty, and not only the mere possibility, to inform the relative flag state of eventual discoveries of or intended activities on one of its sunken State vessels.

Second, the coastal state maintains its exclusive right to regulate and authorize the activities directed at underwater cultural heritage in its territorial waters under the principle of territorial sovereignty. However, when those activities have an intrusive character and they are directed at a foreign sunken state vessels, the authorization of the flag state, as the owner of such vessel, is a further binding requisite.

⁵³⁸ Mainetti V., "Considerazioni in tema di esercizio della sovranità archeologica da parte dello Stato costiero", in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002, pp. 239-240.

Presumably, as sole exceptions, the coastal state might authorize activities on sunken state vessels without flag state consent when:

- urgent measures are required to protect the wreck from imminent risks⁵³⁹;
- the coastal state has to adopt measures related to the safety of its territory or similar related matters (like, for example, measures ensuring the safety of the navigation or the safeguard of the surrounding natural environment).

In any case the cooperation among the interested states seems, once again, the best way to prevent any eventual disputes (the outcomes of which are legally and politically hard to predict) on the management of sunken state vessels.

To conclude, concerning the salvage law, it is possible to confirm that historic salvage companies have to be authorized by the competent flag states for any activity directed to their sunken state vessels.

6. Archaeologists vs. historic salvage companies: ethical, legal and methodological divergences

As we have already seen two international legal systems dominate the management of the underwater cultural heritage: the 2001 UNESCO Convention, which is the codification of the underwater archaeologists' viewpoint, and the Historic Salvage regime which, on the contrary, regulates the salvage companies' activities.

Both these legal systems are structured around the concept of peril. The 2001 UNESCO Convention has the specific goal to protect the underwater cultural heritage for the public benefit. Thus, it is the identification of recurring circumstances of peril, produced by different fonts, that has brought to the drawing of the Convention itself. In the salvage law regime the salvage operations can be performed only in the presence of a condition of danger. The 'historic salvage' has retained this feature, but applying it to shipwrecks having an archaeological and historical value.

⁵³⁹ In the view of Aznar-Gomez "taking measures against 'salvage' or other activities that might harm the vessel may be argued to be an exercise of jurisdiction and authority that respects the foreign title to the UCH as well as the principle of sovereign immunity and corresponding requirements for flag State consent or agreement before authorizing any activities directed at sunken State craft". Aznar-Gómez M. J. (2010), *op. cit.*, p. 226.

Despite this shared relevance of the peril issue, the 2001 UNESCO Convention and the salvage law regime propose different assessments about the dangerous circumstances which may affect the underwater cultural heritage (synthesized by the table below).

Factors of Risk and Circumstances of Peril for the UCH	
2001 UNESCO Convention	Historic Salvage Law
<ul style="list-style-type: none"> • Commercial exploitation; • Damaging; • Destruction; • Dispersion; • Looting; • Unnecessary disturbance; 	<ul style="list-style-type: none"> • Damaging by natural factors; • Destruction by natural factors; • Intrinsic peril underwater; • Looting by treasure hunters;

18. Table illustrating the diverse interpretation of the factors of risk

Some of these factors, like damaging, destruction and looting seem, at first sight, shared by these two systems. But actually there are some significant differences in their interpretation.

First of all, the UNESCO Convention aims to prevent and mitigate circumstances of damaging and destruction generated both by human activities and natural phenomena. On the contrary in the historic salvage cases the judging courts have for long time considered almost exclusively as a factor of risk the environmental impact on the underwater cultural heritage. Fortunately in recent years this perspective has changed and courts have started to recognize that human activities may also represent a risk for this heritage. One of the most important consequences is the affirmation of the already mentioned trend according to which the U.S. judging courts have required to the salvage companies the adoption of archaeological methods and techniques of investigation when dealing with the underwater cultural heritage.

Second, the 2001 UNESCO Convention does not exclude that the maritime environment may threat the underwater cultural heritage. But it also recognizes that, in general, this heritage in its context underwater is not necessarily in danger. Consequently the Convention

suggests, as first option, the preservation *in situ* of the underwater cultural heritage. On the contrary in the salvage law regime the underwater environment is implicitly considered as a factor of risk for the wrecks. As reported by Fletcher-Tomenius and Forrest “*the treasure salvage community argues that, not only are historic wrecks susceptible to marine peril from fisheries activities, construction and pollution, but to leave in situ items of high economic value capable of re-entering the stream of commerce, in itself constitutes marine peril*”⁵⁴⁰.

Third, the salvage law regime condemns the looting of underwater cultural heritage conducted by souvenir-divers and treasure-hunters. But, in addition to these two groups, the 2001 UNESCO Convention considers also as looters the unauthorized *salvors*⁵⁴¹.

The other factors identified by these two legal systems are conflicting or relevant only for one system.

To begin with the 2001 Convention condemns the commercial exploitation of the underwater cultural heritage (art. 2, par. 7). Past experiences show that salvage activities carried out for purposes of profit have led to some real havoc. The most recalled example is the salvage of the mid-XVIII century Dutch ship *Geldermalsen* occurred in 1985-86. All the operations were carried out fast and focusing the attention only on saleable artifacts (mainly ingots of gold and porcelains), without respecting any principle of archaeological investigation and producing serious damages to the structure of the vessel and on the more fragile artifacts. All the salvaged material was then sold (for more than £10 million) on April 1986 by Christie’s auction house in Amsterdam definitively dispersing it⁵⁴². So, the 2001 UNESCO Convention identifies the commercial exploitation as a font of peril for the underwater cultural heritage. Differently in the salvage law regime the economic interest prevails. As consequence the risk that the underwater cultural heritage may lose its economic value as long as it is preserved underwater has been considered enough by some courts to authorize activities of salvage. This practice, of course, clashes also

⁵⁴⁰ Fletcher-Tomenius P. and Forrest C., “Historic wreck in international waters: conflict or consensus?”, *Marine Policy*, Vol. 24, Issue 1, Jan 2000, p. 3.

⁵⁴¹ One of the three conditions requested by art. 3 of the 2001 UNESCO Convention for the application of the salvage law regime on the underwater cultural heritage is that the operations of recovery must be authorized by the relative competent authorities. See UNESCO Convention (2001), *op. cit.*, art. 3.

⁵⁴² Concerning the *Geldermalsen* see, for example, Scovazzi T. (2003), *op. cit.*, pp. 22-28.

with the first option preservation *in situ* policy promoted by the 2001 UNESCO Convention.

Second, the 2001 UNESCO Convention considers the dispersion of the recovered material as a negative practice. Accordingly the underwater cultural goods recovered and their relative documentation should be kept together, as a collection, in project archives (despite the concession of Rule 33 which states that this must be realized “*as far as possible*”). On the contrary the salvage regime does not generally perceive the dispersion of the recovered cultural goods as a factor of peril. An exception is the case concerning the *RMS Titanic* in which the court not only established that “*the Subject Titanic Artifact Collection shall be kept together and intact forever, pursuant to the terms of these Covenants and Conditions. Individual objects or artifacts, or group of objects or artifacts, as well as all supporting documentation, shall not be dispersed through sale or other disposition (including pledge, collateralization, or similar treatment), except as through a process of deaccessioning, as provided under these Covenants and Conditions*”, but it also imposed the condition that “*the Titanic Collections shall be available to present and future generations for public display and exhibition, historical review, scientific and scholarly research, and educational purposes*”⁵⁴³. It may be interesting to check if this consideration against the dispersion of the recovered artifacts will also prevail in the future or if it will just remain an isolated case in the historic salvage law sentences.

Finally, the 2001 UNESCO Convention perceives the unnecessary disturbance of a site as a potential font of peril, prevailing the idea that the underwater cultural heritage *in situ* is not necessarily in danger. Accordingly activities directed to this heritage should be performed only for contributing to the protection, knowledge or enhancement of this heritage (Rule 1). Differently in the salvage law regime prevails the view that the underwater context is intrinsically dangerous because, through the force of the elements or the mere passage of time, the cultural heritage may lose its economic value.

These diverging interpretations of the concept of danger are the expression of a structural incompatibility between these two legal systems. In the words of Maarleveld the salvage law “*approach is object oriented and rife with confidentiality and private allocation. It is meant to*

⁵⁴³ United States District Court, E.D. Virginia, *R.M.S. Titanic Inc. v. The Wrecked and Abandoned Vessel, Exhibit A: Revised Covenants and Conditions*, 12 August 2010, p. 5.

*serve private interest. Heritage, on the other hand, is qualified by its public interest and by concepts such as accessibility and public ownership. For archaeological heritage context and site are central; for salvage issues they are not. [Thus] the two approaches imply completely different states of mind*⁵⁴⁴. Therefore it is the same action of salvage to be perceived as a threat in the 2001 UNESCO Convention due to three main reasons:

- it transcends the policy of the preservation *in situ* as first option;
- it is primarily realized for profit purposes (thus, its focus on valuable properties);
- it often entails the dispersion of the recovered goods.

So, even if the 2001 UNESCO Convention at art. 4 theoretically does not preclude the application of the salvage law and the law of finds, practically it does so, requiring that any activity related to the underwater cultural heritage must be in conformity with the principles endorsed in the Convention.

The key point is that the 2001 UNESCO Convention and the Salvage Law regime fulfill different aims. Therefore, if the intended aim is to protect the underwater cultural heritage for the public interest, than the adoption of a system originally developed to protect private interests toward commercial goods is structurally inadequate and in conflict with this final goal (irrespective of the modifications that may be eventually introduced). Consequently the adoption of one of these systems inevitably excludes the other⁵⁴⁵.

On the base of these considerations and in view of the emerging trends coming from the last salvage law cases (the request of the consensus of the owner and the relative competent authorities in order to proceed with salvage operations, the adoption of archaeological principles of investigation and recovery, and, perhaps, the legal duty to keep the recovered assets as a collection available to the public), some salvage companies have elaborated and joined the Professional Shipwreck Explorers Association (ProSEA) Code of Ethics. In their perspective this Code may represent a balanced and acceptable compromise among the different interests at stake.

⁵⁴⁴ Maarleveld T. J. (2008), *op. cit.*, p. 52.

⁵⁴⁵ Clearly we are referring to the compatibility between the 2001 UNESCO Convention and the historic salvage. The practice of the original salvage for modern vessels in imminent peril is excluded from this reasoning.

This document contains 11 rules of professional conduct and ethic, which main principles may be summarized as following:

- according to Rule 2, members have to recur to *“the highest professional standards while investigating, excavating, salvaging or otherwise utilize shipwreck resources”*⁵⁴⁶. This requisite implies the utilization of the most advanced and efficient technologies for the archaeological fieldworks (Rule 4), the employment of a Project Archaeologist and other experienced workers (Rule 4 and 10), the definition of an archaeological plan for the intended activities (Rule 5), the designation of funds and the localization of accommodations for the conservation and disposition of all the artifacts recovered (Rule 5 and 6);
- on the base of Rule 3, all members of the ProSEA recognize the public interest toward the underwater cultural heritage. So, *“it is the responsibility of the member who supervises the exploration of any shipwreck to ensure that the activity is undertaken in such a way that as much scientific, historical, and archaeological data as practically possible is gleaned from the site. Furthermore, it is their responsibility to ensure that the knowledge is made available publicly in a timely manner through published means”*⁵⁴⁷.
- Rule 7 affirms the interest of the scientific community. Thus, the members of the ProSEA agrees to make available *“archaeologically-significant artifacts from shipwrecks... to the scientific, archaeological and historical communities to study for a reasonable period of time after their recovery and conservation”*⁵⁴⁸;
- According to Rule 9, the members of the ProSEA agree to acts respecting the laws and the regulations in force in the locations where they operate;
- a spirit of fairness, justice and harmony should regulate the relationship among the salvage companies themselves, and their interaction with the archaeological, scientific and historical community (Rule 1 and 11).

However, the most interesting innovation concerns the trade of the recovered goods. According to Rule 8 of the ProSEA Code of Ethics *“members agree to hold out for sale only those artifacts that have been subjected to through study and investigation by the Project Archaeologist.*

⁵⁴⁶ Professional Shipwreck Explorers Association (ProSEA), Code of Ethics, Rule 2.

⁵⁴⁷ ProSEA Code of Ethics, *last op. cit.*, Rule 3.

⁵⁴⁸ ProSEA Code of Ethics, *last op. cit.*, Rule 7.

*Those items that are deemed to be of irreplaceable archaeological value, and which cannot be documented, photographed, molded or replicated in a manner that allows reasonable future study and analysis, should be either kept together in a permanent collection, or only disbursed so that the collection can be reconstituted in a manner which makes the artifacts available for study by legitimate researchers and scientists*⁵⁴⁹. In other words, it proposes a system which differentiates the artifacts recovered according to their commercial and archaeological value. Consequently, two categories of goods are identified. From one hand, there are the “trade goods”, whose economic value outweighs their archaeological significance. The goods belonging to this group can be freely sold in the market, but keeping a certain percentage of their samples in a permanent collection. On the other hand, there are the “cultural artifacts”, whose archaeological relevance exceeds their commercial value. Considering their high cultural value these goods should not be sold, but they should be conserved in a cultural permanent collection, available for scientific analysis and public exhibitions.

Greg Stemm of the Odyssey Marine Exploration suggests three criteria for evaluating to which category an artifact belongs:

- the number of duplicates available on site and in other collections throughout the world;
- the ease of recording or replicating these artifacts;
- the archaeological value versus value of return to stream of commerce⁵⁵⁰.

Two examples are proposed by this author in order to explain how this mechanism should work.

The first example presumes the salvage of a large quantity of late 18th century gold coins, which samples are already widely available in the coins’ collectors marketplace. In this case, according to Stemm, *“the market value of those coins could easily reach millions of dollars... [while] there is very little that can be learned incrementally about 18th Century culture that can’t be learned from records and data which are already in existence... a reasonable conclusion could be drawn that the tiny incremental value of the archaeological knowledge that could be gained from keeping the*

⁵⁴⁹ ProSEA Code of Ethics, *last op. cit.*, Rule 8.

⁵⁵⁰ See Stemm G., “Differentiation of Shipwreck Artifacts as a Resource Management Tool”, *Association of Dive Contractors/Marine Technology Society UI2000 Conference*, Jan. 2000.

collection together does not warrant preventing a return of millions of dollars to the stream of commerce"⁵⁵¹.

The second example supposes the discovery of rare amphorae from a Mediterranean bronze-age site. In this case *"so little is known of trade from this era that minor variations in markings on the amphorae, as well as data that can be gleaned from the remains of their contents, may be data that can be gathered by no other method. In this case, a responsible conclusion could be drawn that the low commercial value would not warrant breaking up the collection"*⁵⁵².

Despite the ProSEA Code of Ethics may represent an interesting evolution from the wild salvage of ancient shipwrecks, its ethical principles cannot satisfy the archaeological community. As stated by Gibbins and Adams *"pragmatic compromise is advocated by many but... adding an alchemical dash of archaeological method to profit-motivated salvage does not create 'archaeology' but rather fools' gold. A discipline is more than the sum of its methodologies"*⁵⁵³.

The main problem is that the trade of the recovered materials is ethically incompatible with archaeology. As stated by Maarleveld *"in heritage professions, one is not to appropriate the material one is working with. Consequently a professional cannot build up a private collection. Compensation in kind is not an option. If one appropriates or alienates heritage material or helps others to do so, one cannot be considered part of the heritage profession, irrespective of professional training. That is not negotiable"*⁵⁵⁴.

This viewpoint can be supported analyzing the codes of ethics adopted by the archaeologists. The Underwater Archaeology Ethics Press Kit proposed by the Advisory Council on Underwater Archaeology establishes that *"legitimate, professional archaeologists do not engage in the buying, selling, or valuing of artifacts. Recovery of artifacts for commercial exploitation is considered extremely unethical and detrimental to the science*

⁵⁵¹ Stemm G. (2000), *last op. cit.*, p. 4.

⁵⁵² Stemm G. (2000), *last op. cit.*, p. 4.

⁵⁵³ Gibbins D. and Adams J., "Shipwrecks and Maritime Archaeology", *World Archaeology*, Vol. 32, Issue 3, 2001, p. 282.

⁵⁵⁴ Maarleveld T. J., "Ethics, Underwater Cultural Heritage, and International Law", in Catsambis A., Ford B. and Hamilton D. L., *The Oxford handbook of marine archaeology*, Oxford/New York, 2011, p. 924. On the ethical issue see also Roderick Mather I. and Gordon P. Watts Jr., "Ethics and Underwater Archaeology", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002.

and humanity as a whole”⁵⁵⁵. The Archaeological Institute of America (AIA) Code of Ethics states that “members of the AIA should... refuse to participate in the trade in undocumented antiquities and refrain from activities that enhance the commercial value of such objects”⁵⁵⁶. According to the European Association of Archaeologists (EAA) Code of Practice “archaeologists will not engage in, or allow their names to be associated with, any activity that impacts the archaeological heritage which is carried out for commercial profit which derives directly from or exploits the archaeological heritage itself”⁵⁵⁷. The Register of Professional Archaeologists (RPA) Code of Conduct requires that “an archaeologist shall not... knowingly being involved in the recovery or the excavation of artifacts for commercial exploitation, or knowingly be employed by or knowingly contract with an individual or entity who recovers or excavates archaeological artifacts for commercial exploitation”⁵⁵⁸.

Thus, for the archaeologists is not ethically acceptable to make a distinction between “trade goods” and “cultural artifact”, neither it is tolerable the commercial exploitation of the cultural heritage. Moreover, as stated by Zamora, “for archaeologists, the priority is to understand the site through interpretation and hypothesis based on the discoveries made... [Thus] from the archaeological perspective, the discovery of a site does not necessarily lead to excavation”⁵⁵⁹. This position is confirmed by Cockrell: “the ultimate goal of archaeology is not to find “things”, but to gather information, and that a very important goal of managers is to preserve the structure of the site, as well as the artifacts within it”⁵⁶⁰. Accordingly archaeologists recur, as far as possible, to non-intrusive methods of investigation and they perceive the preservation *in situ* as a potential solution to safeguard that complex and fragile system of interlinked elements represented by an archaeological site.

⁵⁵⁵ Advisory Council on Underwater Archaeology, *Underwater Archaeology Ethics Press Kit*, point 4.

⁵⁵⁶ Archaeological Institute of America (AIA), *Code of Ethics*, point 2.

⁵⁵⁷ European Association of Archaeologists (EAA), *The EAA Code of Practice*, Ravenna, 1997, point 1.7.

⁵⁵⁸ Register of Professional Archaeologists (RPA), *Code of Conduct*, point 1.2 (e).

⁵⁵⁹ Villegas Zamora T., “The Impact of Commercial Exploitation on the Preservation of Underwater Cultural Heritage”, *Museum International*, Vol. 60, Issue 4, 2009, pp. 20-21.

⁵⁶⁰ Cockrell W. A., “Why Dr. Bass Couldn’t Convince Mr. Gumbel: The Trouble with Treasure Revisited, Again”, in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998, p. 95.

On the contrary, most of the archaeologists sustain that the salvage companies' perspective is primarily aimed to the recovery of valuable artifacts from a site⁵⁶¹. Consequently, salvage operations are often performed without formulating, in advance, archaeological hypothesis and questions, thus generating unsatisfactory results, for example, in terms of publications. Maritime archaeologists often underline how the historic salvage companies usually tend to publish more coffee-table books than scientific publications⁵⁶². Positively, they can reach in this way the public attention, spreading the enthusiasm toward the underwater cultural heritage. Negatively, they do not really contribute to the development of the archaeological knowledge. Actually they hamper it.

Inevitably, at the current conditions, there is no space for cooperation between archaeologists and historic *salvors*, embracing ethical, legal and methodological approaches that are fundamentally incompatible.

6.1 High costs, low profits and increasingly stringent rules: three reasons why the historic salvage companies should reconsider their plans

Further analysis on the structure and the results achieved by historic salvage companies reveal another interesting aspect: that the historic salvage is not a good investment. As suggested by Maarleveld *"a closer look at the economics often reveals that "treasure hunt" is no more than a decoy to attract money from investors, who will not see a return"*⁵⁶³. Supporting this thesis it is possible to consider the financial results of the Odyssey Marine Exploration, one of the most organized and famous historic salvage company of the world. Compared to other salvage companies the Odyssey Marine Exploration has the merit to regularly publish on its web-site the financial results of the activities undertaken during the years. For the full year 2009 the company

⁵⁶¹ Different is the opinion of Kingsley. In his view, the reports of salvage companies like, for example, Arqueonautas and Odyssey Marine Exploration *"reveal that the recovery of mass-produced 'trade goods' for sale is just one - albeit highly significant - set of interlocking scientific objectives"*. Kingsley S., *"UNESCO, Commerce & Fast-Food Maritime Archeology"*, *Odyssey Marine Exploration Papers* 13, 2010, p. 22.

⁵⁶² See, for example, Villegas Zamora T. (2009), *op. cit.*, pp. 24-25 and Maarleveld T. J. (2011), *op. cit.*, p. 924.

⁵⁶³ Maarleveld T. J. (2011), *op. cit.*, p. 923.

reported a net loss of \$18.6 million⁵⁶⁴; of \$23.3 million for the year 2010⁵⁶⁵; and of \$16.2 million in the 2011⁵⁶⁶. Thus, in all these years the revenues have been definitively lower than the expenses. This means that the salvage of the underwater cultural heritage is not a profitable business⁵⁶⁷.

Perhaps it is the reached awareness of such an outcome that has led, in recent years, to some changes in the company's revenues structure. The analysis of the annual financial reports of the company shows that, in 2011, the company principally reported revenues performing activities unrelated to the exploitation of the underwater cultural heritage. About \$11.3 million of the total \$15.7 million earned by the company in that year have been obtained thanks to the organization of two expeditions with the company Neptune Minerals, Inc. (NMI) for deep ocean mineral explorations.

Moreover, the impact of the selling of artifacts on the total revenues of the company has fallen in the last years. Through the selling of artifacts, merchandising, commissions and other minor activities the Odyssey Marine Exploration got \$0.9 million on the total \$15.7 million of revenue obtained on 2011, \$0.4 million on \$21 million for the full year 2010, \$1.6 million on \$4.3 million for the year 2009 and \$1.7 million on \$4.1 million in 2008. So, while in 2008 and 2009 the selling of artifacts represented respectively the 41,5% and the 37,2% of the total revenues, in 2010 and 2011 its overall impact has fallen down, corresponding to the 1,9% and the 5,7% of the revenues. Hence, in the most recent years the selling of the salvaged artifacts has played a marginal role in the financial budget of the company.

These considerations raise two spontaneous questions.

First of all, if the profit is the final aim, why salvage companies do not totally abandon their activities related to the underwater cultural heritage? It is not simple to answer this question. Perhaps those who

⁵⁶⁴See Odyssey Marine Exploration, *Announces 2009 Financial Results*.

⁵⁶⁵ See Odyssey Marine Exploration, *Reports Fourth Quarter and Full Year 2010 Financial Results*.

⁵⁶⁶ See Odyssey Marine Exploration, *Reports Fourth Quarter and Full Year 2011 Financial Results*.

⁵⁶⁷ See on this topic Throckmorton P., "The World's Worst Investment: The Economics of Treasure Hunting with Real-Life Comparisons", in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998, pp. 75-83.

manage these companies are moved by a real fascination toward the maritime history so, till they get sponsorships, they will continue in their activities of historic salvage. Another possibility is that, despite the scarce results achieved, there is a true belief that, one day, an immense “treasure” may be discovered, repaying all the costs sustained by the company. A number of further more or less plausible hypothesis could be considered. The point is that, recognizing the progressively affirmation of the 2001 UNESCO Convention principles and the low financial results obtained, historic salvage companies may gradually turn their attention toward potentially more profitable activities like, for example, deep-sea explorations for oil, gas and mineral extracting companies or the performance of salvage operations solely on modern ships.

Second, may the historic salvage companies renounce to the selling of the recovered artifacts keeping, at the same time, a role in the underwater cultural heritage’s world? The impression is that, currently, this is a hardly realizable hypothesis, being the selling of the recovered artifacts a structural feature of historic salvage companies. On the contrary what cannot be excluded is that, in the next future, the historic salvage companies may be oblige by law to sell the artifacts recovered from a site as unique collection (as in the Titanic case). This condition may positively solve the problem related to the dispersion of the salvaged artifacts. Negatively, this measure is not, in any case, enough to satisfy all the parameters required by the 2001 UNESCO Convention, in particular those aimed to impede the unnecessarily disturbance and the commercial exploitation of the underwater cultural heritage.

According to Bederman *“Despite attempts to place the law of the sea on a footing which carefully gauges overweening assertions of a state authority and sovereignty and promotes private sector development of ocean resources, the reality remains that state interests dominate in this field”*⁵⁶⁸. Being perceived the underwater cultural heritage as a public heritage is predictable that states will continue to play a primary role in its management. However, the private companies are not necessarily excluded from activities directed to the underwater cultural heritage. The Institute of Nautical Archaeology (INA), for example, is a private institute aimed to *“fill in the gaps of history and provide answers to challenging historical questions through the study and the examination of the vessels that have*

⁵⁶⁸ Bederman D. J. (2002), *op. cit.*, p. 115.

*travelled the world's waterways for millennia, carrying people and cargo, making possible the widespread of ideas, innovation and invention"*⁵⁶⁹. In more than 50 years this institute has carried out underwater archaeological analysis, investigations and excavations all over the world adopting high professional scientific and ethical standards. Through its affiliation with the Texas A&M University, INA has spread the knowledge about the underwater cultural heritage, for example, providing training courses of nautical archaeology, organizing conferences and seminars, publishing popular books, sharing academic reports and articles in periodicals like the *International Journal of Nautical Archaeology* and the *INA Annual*. All these activities have been carried out without ever selling the recovered artifacts.

Therefore, all those private actors who, feeling a sincere interest toward the maritime and underwater archaeology, intend to embrace in their activities the professional ethics and archaeological methods may be theoretically involved in the investigation, enhancement and management of the underwater cultural heritage. But, this prerogative implies the respect of one unquestionable condition: the renounce to commercially exploit the underwater cultural heritage. This essential pre-requisite is not currently satisfied by the historic salvage companies.

⁵⁶⁹ See the INA's official web-site: <http://inadiscover.com/about/introduction/>.

CHAPTER 3: ASSESSING THE EFFICACY OF THE MAIN METHODS OF MANAGEMENT FOR THE UNDERWATER CULTURAL HERITAGE

1. Exhibition (or storage) in “on-land” museums

1.1 Introduction

One of the most adopted method for the management of the underwater cultural heritage is the conservation and exhibition of recovered artifacts (and in some cases entire shipwrecks) in museums “on-land” (mainly maritime and naval museums). All over the world different structures are organized for this purpose. The Mary Rose Museum (UK), the Roskilde Viking Ship Museum (Denmark), the ARQUA National Museum of Underwater Archaeology (Spain), the Bodrum Museum of Underwater Archaeology (Turkey), the Guangdong Maritime Silk Road Museum (China) and the Australian National Maritime Museum (Australia) are some of the most significant examples of this method of management. However, the most interesting case study is probably the Vasa Museum of Stockholm (Sweden). What makes exceptional this museum is not only the incredible level of integrity of the exposed shipwreck (more than 95% of its structure is still composed of original timber), but also its ability to attract an extraordinarily wide audience (with over 1.000.000 visitors per year, the Vasa Museum is the most attended maritime museum in the world).

In some respects and precisely because of its uniqueness, the Vasa museum has also distinctive features dissociated from other maritime museums or unnecessarily related to the adoption of this specific method of management. Consequently part of this text will be also specifically focused on the identification of these peculiarities. Moreover, during the analysis, frequent references to the practices adopted by other maritime museums will be presented and examined. The goal is to explain certain technical details confronting diverging experiences and results.

1.2 The Vasa Museum

Brief history of the Vasa shipwreck and of its museum

The Vasa museum is a museum ship whose collection consists on the Vasa itself, an almost fully intact 17th century ship, and all the objects that were found within the ship.

In the first half of the 17th century the Baltic region was a place of violence and war. Sweden was emerging as dominating power: it defeated Russia for the control of Estonia in the 1580s and, in 1621, it conquered Riga and the Livonian lands from Poland. The Danish-Norwegian kingdom represented, at that time, the main obstacle to complete the Swedish supremacy in the Baltic.

In this geo-historical context the naval power was a key aspect for the military expansion. In 1625 the Swedish King Gustav II ordered to the master shipwright Henrik Hybertsson and his brother Arendt de Groot the construction of four new type of warships, with two full gundecks and armed with new type of artillery. The Vasa was the first of these warships.

On 10th August 1628 Vasa commenced her inaugural voyage, but the new ship sunk in the middle of Stockholm harbor (at 120 meters from the shore) after sailing only 1.300 meters. The sinking was probably due to a lack of stability: there was an unbalanced distribution of weights (the structural weight of the upper gundeck was excessive for navigation). As a result the warship tilted and the water that rushed in the Vasa's open gunports made it sink.

Between 1663 and 1665 Albrecht Von Treileben successfully raised from the water 61 of the 64 Vasa's cannons, operating through a diving bell. However these operations seriously damaged the hull of the ship. After this first attempt of salvage the shipwreck was let untouched at the bottom of the sea for hundreds of years.

On 4th September 1956 Anders Franzén and Per Edvin Fälting relocated the Vasa wreck off Beckholmen at a depth of 32 meters. Operations of recovery started to be planned and, on 1961, the Vasa broke the surface again after 333 years underwater. The ship was moved into a provisional structure, the Vasa Shipyard, for receiving the necessary conservation treatments. While the warship was preserved at the Vasa Shipyard it was given to the public the chance to visit it. Despite few comfortable structural conditions (small spaces, high humidity, etc.),

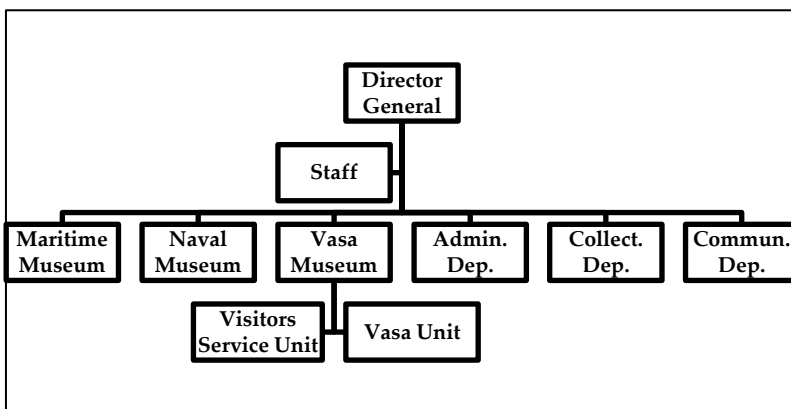
approximately 11 million people visited the Vasa at the Wasa Shipyard between 1961-1988.

In 1981 the Swedish government established that, for reasons of preservation and enhancement, a permanent building was to be constructed for hosting the Vasa. As a result in 1988 the Vasa made its last voyage, from the Wasa Shipyard to the new Vasa Museum, which was officially opened on 15 June 1990.

Currently the Vasa Museum is the most visited museum in Scandinavia and the most visited maritime museum all over the world.

The organizational and legal context

From an organizational view the Vasa Museum is part of the Swedish National Maritime Museums, a state authority aimed to preserve and enhance the maritime-underwater cultural heritage.



19. Organization chart Swedish National Maritime Museums⁵⁷⁰

Considering the outstanding cultural value and the particular conditions required for its preservation, the Swedish National Maritimes Museums has created a specific museum dedicated to the Vasa. Thus, structurally there are three museums: the Vasa Museum, the Maritime Museum and the Naval Museum. These museums have some departments in common (administrative, collections and

⁵⁷⁰ Data source: Vasa Museum.

communications department) while other activities (research, conservation, etc.) are managed separately.

From an international legal perspective Sweden has ratified the UNCLOS and the 1989 Salvage Law Convention, recurring to the reservation of art. 30, par. 1(d). On the contrary it has not yet ratified the 2001 UNESCO Convention. At regional level this country signed, on 2008, the Code of good Practice for the management of the Underwater Cultural Heritage in the Baltic Sea Region (COPUCH). At national level the underwater cultural heritage is mainly protected by the 1988 Heritage Conservation Act. According to this law recreational divers have, in general, free access to the underwater cultural sites (more than 100 years) preserved *in situ*, but they cannot touch anything. Only the access to few sites (like, for example, the *Anna Maria* and *Mars*) is banned mainly due to their fragility. Currently the National Maritime Museums of Sweden, in collaboration with the Stockholm County Administrative Board and the Swedish National Heritage Board, is planning the development of maritime diving parks at Dalarö and at Axmar Bruk outside Gävle⁵⁷¹.

Values and threats related to the Vasa

Different values are associated to the Vasa and its cargo:

- Aesthetic value: the completeness of this impressive warship of the 17th century makes it very suitable for exhibition purposes.
- Archaeological value: for archaeologists the Vasa is an incredible discovery. Thanks to the outstanding status of conservation of this warship and its cargo archaeologists' the archaeological research may reveal interesting and significant information related to the art of sailing, the life on board, etc. The re-organization of this data may, in turn, strength our knowledge about the Swedish society in the 17th century.
- Artistic value: hundreds of carved and painted sculptures decorated the Vasa. Working as "propaganda weapons", they mainly represented images of power and heraldic symbols

⁵⁷¹ See Flyg P., "Underwater Archaeology and Cultural Heritage Management in the Baltic Sea-Using Public Outreach as a Means of Protection", *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010.

celebrating the glory of the Swedish king's family⁵⁷². Thus, the Vasa is not only a shipwreck, but it is also an exceptional work of art.

- Economic value: the Vasa has an exceptional indirect economic value, acting as international touristic attraction. Since its recovery in 1961 the Vasa (at first in the Wasa Shipyard, than in the Vasa Museum) has been visited by over 30.000.000 people.
- Historical value: despite its failure as warship, the story of the Vasa is an important tile in the mosaic of the 17th century Swedish history. The reasons for which the Vasa was commissioned, as well as the causes that have led to its rapid end, are all elements of interests both for researchers and the public.
- Research value: the Vasa is a vital source for at least two different kind of researchers, other than archaeologists and historians. First of all chemists, who have found in the Vasa a pivotal model for evaluating the results and the challenges of the long-term conservation of ancient waterlogged wood. Secondly, naval engineers, because, despite its fiasco, the Vasa worked as prototype for the succeeding generation of Swedish warships.
- Spiritual value: the Vasa is a monument for those people who perished sinking with the ship⁵⁷³.
- Symbolic value: nowadays the Vasa is considered a symbol of pride for Stockholm city. For reaching this status the Vasa had to overcome two potential obstacles. First of all, the risk to be perceived as an historical embarrassing flop being this vessel sunken the same day it was launched. Second, the risk to be ideologically repudiated, being the emblem of a violent and imperialist period of the Swedish history (contrary to the pacific neutrality policy embraced, nowadays, by this state). Fortunately, these considerations have not significantly influenced the overall positive judgment of the Swedish population toward the Vasa and, actually, "*today the Vasa is*

⁵⁷² For a deeper analysis about the sculptures of the Vasa and their meanings see Hocker F., *Vasa: A Swedish Warship*, Medströms Bokförlag, Stockholm, 2011, pp. 67 - 81.

⁵⁷³ A section of the Vasa Museum exhibition called 'face to face' is specifically dedicated to the people that were onboard the Vasa the day of the tragedy. See the web-page: <http://www.vasamuseet.se/en/Exhibitions/Face-to-face/>.

widely known and regarded as a national treasure"⁵⁷⁴. This result is probably due to a series of interlinked factors such as, for example, the incredible circumstances which led to the Vasa recovery and its key role in the development of the tourism in Sweden.

In 1961 the Vasa shipwreck was not recovered due to a particular threat. On the contrary, the entire process was inspired by a diffuse wave of enthusiasm aimed to celebrate the triumphant recovery of an important piece of Swedish history. This strong determination permitted to settle the problems experienced (for example, as reported by Delgado, "*it took two years to make the preparations for the first lift*"⁵⁷⁵).

Thanks to the feature of the Baltic Sea (low temperature, low rate of salinity, brackish waters, etc.) and its mighty wooden structure, the warship Vasa was found in outstanding condition of preservation. However the natural deterioration process affecting this shipwreck and its related artifacts, required the immediate adoption of conservative treatments once they were raised from the bottom of the sea.

Analysis of the interests at stake

Preservation in situ

In the 1960s the maritime archaeology was making its first steps and, at such time, it was not yet diffused the preservation *in situ* perspective. Consequently the idea to recover the Vasa was more motivated by the tempting idea to realize a "legendary deed" rather than on grounds of archaeological investigations.

A series of factors favored the realization of this project. First of all, as stated by Hocker, "*the salvage took place in a country dominated by a belief in the power of technology*"⁵⁷⁶. This optimistic view made realizable the entire project despite the predicted massive challenges. Second, in different states of the world a lot of major archaeological finds were discovered underwater between 1950-1960 like, for example, the

⁵⁷⁴ Olsson A., "The Presentation and Valorisation of Shipwrecks on the Example of the Vasa", *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010, p. 353.

⁵⁷⁵ Delgado J. P. (Edited by, 1997), *op. cit.*, p. 454.

⁵⁷⁶ Hocker F. (2011), *op. cit.*, p. 7.

Pharaoh Khufu's barge in Egypt, the Skuldelev Viking ship in Denmark and a late Bronze Age trading ship in Turkey. Through a sort of contagion these discoveries raised the worldwide public interests toward the underwater cultural heritage and they showed which kind of operations could be realized with the technology available. But, of course, none of these projects had the ambitious of the Vasa mission. Third, "*the post-war economic boom made grand projects seem possible and tangible memories of Sweden's history desirable*"⁵⁷⁷. Not only the Swedish government had the finance to support this amazing project but, probably due to the general excitement for this challenge, a broad public voluntarily contributed to its realization.

The operations were managed by three public actors, the Swedish Navy, the National Maritime Museum and the National Heritage Board, and one private actor, the Neptune Salvage Company, which accepted to operate for free posing, as condition (later accepted), the adoption of a familiar commercial method to raise the Vasa. Cooperatively working, these groups organized a system which exploited the buoyancy principle to raise the wreck. Steel cables were passed around the bottom of the ship and connected with lifting pontoons full of water which were floating on the surface. Pumping out the water from the pontoons they became lighter and more floating, thus allowing the lifting and displacement of the ship for a few meters. Repeating this operation several time (sixteen) it was possible to gradually move the wreck toward shallower waters. For the last lifting a temporary transom was mounted to support the hull and special panels and plugs were installed to cover the gunports and bolt holes. Submersible pumps removed the water which was within the shipwreck making possible to move the Vasa into the dock and then to raise it on the keel blocks.

On the whole, the operations were directed more by engineers than archaeologists. As a matter of fact the Vasa was excavated only once recovered. Moreover the surrounding soft mud of the bottom of the sea, once moved by divers, generated a very low visibility. Consequently it was very difficult to collect information and take good photos of the site using the technologies available in the 1950s. This may explain why, within the museum, the space dedicated to the

⁵⁷⁷ Hocker F. (2011), *last op. cit.*, p. 16.

period of time in which the Vasa was still lying *in situ* is relatively limited.

Compared to the 1960s, modern technology permits nowadays to collect a higher number of information from a site preserved *in situ* and to display them for the public benefit. Remaining in Sweden, the Kalmar County Museum, for example, offers to its visitors one of the world best reconstruction of an underwater archaeological site. This museum exhibits the artifacts recovered from the Kronan, a Swedish warship which sank on 1676 during a naval battle against Denmark. Around 80% of the site has been excavated adopting archaeological standard methods: this has permitted to precisely survey the site *in situ* and to collect a good number of data about its formation. Thanks to this, the museum exhibition can today display: a detailed scale model of the wreck site, a virtual reconstructions of the events that led to the sunken of the Kronan and the successive phases of natural stabilization *in situ* of the wreck, and high quality photos and videos of the site *in situ* before and after the carried out operations of analysis and recovery.

Obviously these measures cannot solve the clash between the preservation *in situ* policy and the exhibition of the underwater cultural heritage “on-land”. However, a reconstruction of an underwater site’s structure (virtually and/or through scale models) may likely increase the public appreciation and understanding of this heritage.

Scientific Research

In the Vasa Museum there is a special unit of experts which dedicate their time investigating the Vasa. The goal is to analyze the discovered objects and artifacts (which are more than 45.000) in order to bring new light and knowledge on the Swedish society during the 17th century. According to Hocker “*a ship is a community, which must be self-sufficient and self-governing... It is not a land based community in miniature, as some have suggested, since there are rarely women and few children or elderly, but it reflects some aspects of the society from which the crew come*”⁵⁷⁸.

In 2002 a long-term investigative project entitled “Understanding Vasa” has been launched. The results registered in the first phases of this project and on previous studies concerning the salvaging and the

⁵⁷⁸ Hocker F. (2011), *op. cit.*, p. 105.

excavation of the Vasa have been published on 2006⁵⁷⁹. In the meanwhile the scientific research proceeds and each result achieved permits to look with new eyes to the past. As noticed by Hocker “Vasa will continue to teach new lessons in the years to come, as each generation of scholars asks new questions, and each visitor brings a new perspective”⁵⁸⁰.

From one hand for an archaeologist the investigation of cultural assets in a dedicated structure “on-land” may simplify and increase the number of analysis that could be realized compared to a site preserve *in situ*. On the other hand, the excavation of a site is an irreversible destructive process which, as a result, may lead to an inadvertent loss of some potential information. Moreover it implies a high responsibility for the successive long-term conservation of the recovered artifacts. Thus, the excavation and recovery of the underwater cultural heritage for scientific studies is a normal archaeological practice. However it is a process that should be realized only adopting archaeological standards of investigation and after having formulated relevant research questions which cannot be answered recurring to non-intrusive techniques of analysis.

Protection and Conservation

Once discovered the relic of the Vasa was in outstanding conditions. The cold and almost anaerobic environment of the Baltic sea incredibly slowed down the chemical deterioration process and protected the wreck from the action of wood borers and shipworms (like, for example, the *Teredo Navalis*). The sediments and the mud which progressively buried the wreck provided an additional layer of protection. Moreover the heavy structure of the shipwreck contributed to maintain its shape.

Despite these favorable conditions, a slow, but significant deterioration process affected the wooden structure of the Vasa as well as the other materials discovered within, or close to, the hull. In an underwater environment the hydrolysis process breaks down the cellulose of the wood leaving only a lignin network that, becoming more porous and permeable, absorbs the water at the place of the cellulose. As a result

⁵⁷⁹See Cederlund C. O. and Hocker F., *Vasa I: The Archaeology of a Swedish Warship of 1628*, National Maritime Museums of Sweden, 2006.

⁵⁸⁰ Hocker F. (2011), *op. cit.*, p. 203.

the wooden structure maintains its shape (as long as it is supported by water) but, at the same time, it becomes more heavy and less strength. As consequence waterlogged wood may easily collapse once recovered and exposed to the air unless it is not kept wet and conserved recurring to appropriate chemical treatments⁵⁸¹.

Thus, the conservation of the Vasa has been a real challenge. After desalinization, the wood of the ship was treated with polyethylene glycol (PEG), a synthetic material of ethylene oxide. The goal was to confer mechanical strength incorporating into the wood the PEG solution and removing, at the same time, the excess of water. This process ran for 17 years, till 1979 when the drying of the Vasa was intensified (but still proceeding in a controlled manner in order to minimize the risk of shrinkage or distortion of the hull)⁵⁸².

The reassembly of the decorations to the hull and the stabilization of the structure have not been easier tasks. It was necessary to install new bolts into the original shape (the old ones were corroded), to bring back the hull to its original form recurring to hydraulic jacks and to construct a new structure able to support the overall weight of the ship.

The conservation of an ancient shipwreck is almost an endless process because the degradation process can be slowed down, but it cannot be completely stopped. In the 2000s deposits of acidic powdery were discovered on the surface of the hull. These acids, possibly due to an unpredicted chemical reaction with the metal corrosion products absorbed by the ship, posed a threat to the resistance of the timber structure. As first solution, in 2004, a new climate system was installed in the museum in order to stabilize temperature and humidity of the ship and the stored artifacts. Data show that this measure has immediately and drastically slowed down the production of acids, thus providing to the Vasa Museum conservators further time for conducting more advanced studies on this issue.

As a result two international research projects have been dedicated to the conservation of the Vasa: the first, named "Preserve Vasa", ran from 2003 to 2006; the second, called "A Future for Vasa", ran from

⁵⁸¹ More detailed information about the conservation of waterlogged wood and other materials can be find in Hamilton D. L. (1999), *op. cit.*, 1999.

⁵⁸² About the conservation of the Vasa see, for example, Almkvist G., *The Chemistry of the Vasa – Iron, Acids and Degradation*, Doctoral Thesis, Faculty of Natural Resources and Agricultural Science, Department of Chemistry, Uppsala, 2008.

2008 till 2011. On the base of the results achieved in these years of research, the conservators of the Vasa have planned:

- to substitute all the 1960s steel bolts in the ships with new stainless steel bolts;
- to construct a new platform that, equitably distributing the gravity forces on the hull, may reduce the negative impact caused by the high weight of the decks;
- to estimate how much longer the Vasa can be preserved.

The Vasa experience shows that the conservation of the recovered underwater cultural heritage is one of the most hard challenge. This process, which has to be managed by highly professional and skilled conservators, is long (maybe endless) and expensive. It is reflecting on these difficulties (but not only) that the preservation *in situ* approach has been thought.

In view of these difficulties, an alternative solution has been adopted by the Guangdong Maritime Silk Road Museum for the shipwreck Nanhai No.1. This wreck is currently preserved in a steel box aquarium filled with seawater with the same features (pH, temperature, etc.) of the original place in which this shipwreck was discovered. This solution may reduce the conservation costs offering, in addition, to the public the chance to observe underwater archaeologists investigating a site. However, as pilot case, the long-term effects of this method still have to be evaluated⁵⁸³.

In terms of protection, the recovery (if conducted according to archaeological standards) and exhibition (or storage) in museums considerably reduce the risks of looting, damaging or destruction⁵⁸⁴.

⁵⁸³ For more information about the Nanhai No. 1 (and, in particular, its recovery) see Jun W., "Innovative Thoughts on the Preservation of Underwater Cultural Heritage in China: No. 1 Nanhai as a Project Example, *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010.

⁵⁸⁴ Unfortunately, accidents may also occur within dedicated museum. On 1944, for example, a fire broke out at the Roman Naval Museum of Nemi (Italy) destroying the two ancient ships belonged to the roman emperor Caligola. On the Nemi shipwrecks see also Reggiani A. M., "L'archeologia subacquea e navale. Le navi di Caligola a Nemi: quando i relitti riscrivono la storia", in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneo*, Vol. 4, Massa Editore, Sep. 2004.

Access and Promotion

As remarked by Hocker *“from the beginning of the project, the ultimate goal had been to restore the ship completely, to place the conserved finds back in their place, as if the ship were just leaving the quay in August of 1628. The public could then walk through the ship, to experience a complete 17th-century environment. By the early 1970s, it was clear that the ship could not be made safe for large numbers of visitors... and the ancient timbers, as sound as they were, would never stand up to the traffic of hundreds of thousands of people every year. The ship had to remain closed to the public”*⁵⁸⁵.

Even without the possibility to move on board, the visitors of the Vasa Museum have the opportunity to experience the warship from a 360° perspective and to observe it from different angles (the building is structured on 6 plans): this permits both to look closely, enjoying the details of the sculptures and decorations, but also to have an overall view of the entire warship, appreciating its majesty. Other than the warship, around 2.000 artifacts are exhibited in the Vasa Museum⁵⁸⁶.

A potential challenging affecting the educational role of this museum is connected to the fact that the majority of the Vasa Museum's visitors are foreign with few or no knowledge about the Swedish history. Thus, the problem is to historically contextualize the Vasa in order to propose a story that may be understandable and tempting for foreigners too. This task has been faced through the installation of 11 permanent exhibitions around the Vasa wreck. Each of these exhibitions presents a specific aspect related to the story of the Vasa like, for example, the life on board the Vasa, the art of sailing a 17th century warship, the meanings of the ornamental sculptures. But, at the same time, they also tried to provide a general view of Sweden in the early 17th century (for example it is exhibited a relief map which shows the main battle fought in northern Europe in 1628).

Another mayor challenge that affects a museum like the Vasa, which is mainly focused on a single object, is the necessity to periodically reinvent itself to maintain a certain number of regular visitors⁵⁸⁷. To face this challenge the Vasa Museum has, for example, introduced on

⁵⁸⁵ Hocker F. (2011), *op. cit.*, p. 193.

⁵⁸⁶ The other goods are stored in two magazines: one is in the museum, the other is located in Tumba (southern Stockholm).

⁵⁸⁷ The expression “regular visitors” refers to those people who decide to visit the same museum more than one time in their life.

2012 a totally new exhibition called “Battle!” about the naval warfare in the early 1600s. But the possibility of renovation is closely link with the ability to proceed with the archaeological analysis. The thought of Dobbs about the Mary Rose Museum can be naturally extended to all the maritime museums: “*continuing research will be vital, not just for the academic and archaeological objectives of the project but also to build in the ability continually to come up with new research results – with the new stories that will refresh the product and maintain visitor interest and repeat attendance*”⁵⁸⁸.

The tools of promotion adopted by the Vasa Museum are not particularly innovative, but they are characterized by an outstanding level of quality.

First of all, several books have been published about the Vasa warship. Some of them are dedicated to the general public (both children and adults may find appealing volumes), while others are mainly for specialists⁵⁸⁹. Moreover a high number of publications in scientific reviews have been dedicated to the challenges faced by the Vasa Museum in the conservation process⁵⁹⁰.

An alternative way of promotion is the spreading of documentary movies. A 25 minutes documentary about the story of the Vasa, for example, is regularly transmitted in different languages at the entrance of the Vasa Museum and it is purchasable at the Vasa Museum shop⁵⁹¹. Moreover in 2011 a documentary-fiction titled “Vasa 1628” was transmitted by Sweden’s Television.

A strong contribution to the promotion of the Vasa Museum has been also provided by its official web-site⁵⁹².

⁵⁸⁸ Dobbs C., “Visitors, funding, and museums – reflections on the Mary Rose experience”, p. 77 in Satchell J. and Palma P. (Edited by), *Managing the Cultural Heritage: Defining, accessing and managing the resource*, Council for British Archaeology, 2007.

⁵⁸⁹ The web-site <http://www.vasamuseet.se/en/The-Ship/Books-about-Vasa/> provides a list of some of the most interesting books about the Vasa.

⁵⁹⁰ See, for example, Håfors B., “The Climate of the Vasa Museum: problems in coordinating the museum object and the museum climate”, *Maritime Park Association*, 1997, and Fors Y. and Richards V., “The effects of the Ammonia Neutralizing Treatment on Marine Archaeological Vasa Wood”, *Studies in Conservation*, vol. 55, 2010.

⁵⁹¹ The title of the movie is “Skeppet Vasa” and it is directed by Anders Wahlgren.

⁵⁹² Vasa Museum web-site: <http://www.vasamuseet.se/>. In 2011 489,473 users visited this web-site. Data source: Swedish National Maritime Museums, *Årsedovisnig 2011*, Stockholm, 2011, p. 24.

The structure and the content of the Vasa Museum web-site is excellent:

- it provides an immediate access to the most searched information (opening hours, admission fees, location of the museum and a contact for eventual questions);
- it is easily comprehensible and user-friendly (being translated in 38 different languages);
- it supplies a good description of the story of the Vasa warship (from its construction to its salvage in 1961 and over), the exhibitions exposed and the activities of preservation and research conducted within the museum;
- it offers a free-downloadable MP3-guide and three games for children (one of them, named "Sail Wasa", is particularly interesting because it simulates the conditions that led to the Vasa sinking)⁵⁹³;

Since few years the Vasa Museum has also joined a social network as additional tool of promotion⁵⁹⁴. These are just some of the numerous tools that a maritime museums may use to promote the underwater cultural heritage. Workshops and dedicated events are additional methods of promotion which potentially may reach a large audience. The Mary Rose Museum is particularly active in this way, proposing several family events at the dockyards. An example is the Mary Rose Galley Reconstruction Project, an experimental archaeology and costumed interpretation aimed to represent the cooking activities within a XVI century galley replica⁵⁹⁵. These kind of events are usually appreciated by the public (especially children), who have the opportunity to be directly involved in a cultural experience.

Socio-Economic Impact

The Vasa Museum is not only a structure for exhibitions, but it is also one of the most developed laboratories for the conservation and archaeological investigation of ancient underwater cultural heritage at

⁵⁹³ Strangely the three games are accessible only through the Swedish version of the web-site: <http://www.vasamuseet.se/sv/Skola/Prova--pa/>.

⁵⁹⁴ The Vasa Museum page on Facebook: <http://www.facebook.com/Vasamuseet>.

⁵⁹⁵ To learn more about this project see Dobbs C. (2007), *op. cit.*, pp. 73-76. To check the current family events check the web-site: http://www.historicdockyard.co.uk/events/t-family_events.php. For overall reflections about the use of ship replicas see Ohlsson H. L., "Who needs ships replicas, and what for?", *Moss Newsletter*6, Genuary, 2004, p. 10-11.

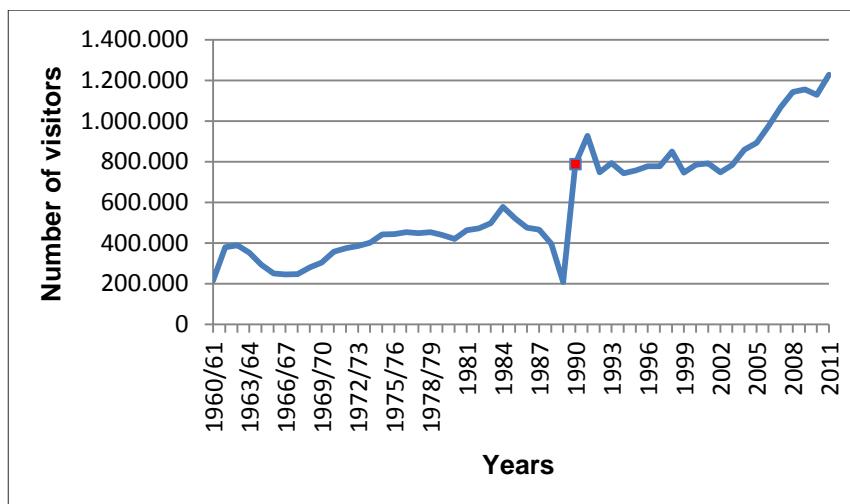
international level. High qualified and skilled archaeologists and conservators work at the Vasa Museum (as well as at the Maritime Museum and the Naval Museum) making the city of Stockholm a favorable place for advanced studies in these areas.

The social impact of the museum is not limited to activities carried out internally to the Swedish National Maritime Museums, but it branches out involving also external structures. First of all, the Vasa Museum cooperates with public and private local organizations such as the Stockholm Visitors Board and the Royal Djurgården Society. Moreover it manages active networks with research centers and universities like, for example, the Maritime Archaeological Research Institute (MARIS) at Södertörns Högskola and the Centre for Maritime Research (CEMAS) at Stockholm University.

The widespread knowledge and awareness about the underwater cultural heritage values (largely diffused thanks to the Vasa Museum) has created a favorable context for its scientific investigations. The interest of the local media permits to keep the public informed about the most recent discovered of underwater cultural sites. All this, in turn, favors the search and the identification of private funds intended to support further activities of research and analysis. Among the latest underwater findings deserve to be mentioned the discovery of the so-called Ghost Ship, a Dutch cargo vessel from the 17th century, and of the Mars, a Swedish warship which sank in 1564. Both the operations of location and identification of these two relics have been realized thank to the contribution of private companies (respectively the MMT Group, a marine survey company, and Ocean Discovery, a company specialized in deep water diving operations)⁵⁹⁶.

The data related to the number of visitors per year show exceptional outcomes and, as a result, they suggest a particularly high economic impact of the Vasa Museum.

⁵⁹⁶ For more information about these companies and their project see the MMT Group web-site: <http://www.mmt.se/>; and the Ocean Discovery web-site: <http://www.ocean-discovery.org/>. The company Deep Sea Productions has realized documentaries about both these projects. To learn more about these videos, check its web-site: <http://www.deepsea.se/>.



20. Number of visitors per year of the Vasa Museum⁵⁹⁷

The graph above shows that number of people who visited the Vasa has progressively grown year by year, moving from the almost 215.000 visitors of the 1960-61, to the nearly 1.228.000 attendants achieved on 2011. The passage from the Wasa Shipyard to the Vasa Museum (marked with a red square in the chart) has immediately produced significant results almost doubling the number of visitors per year. Moreover since 2007 the museum is regularly visited by more than 1.000.000 people per year, working as an exceptional national and international touristic attraction. According to the statistics, around 20% of the Vasa visitors come from Sweden, while the other 80% are foreigners, principally coming from Germany (13%), USA (13%), Russia (7.5%) and Spain (6%)⁵⁹⁸. Comparing the estimated number of foreigners who visited the Vasa museum in 2011 (around 982.491) and the number of overnight stays reserved such year by foreigners in Stockholm County (3.483.062)⁵⁹⁹ it seems that about 1/4 of the foreigners who traveled to Stockholm visited also the Vasa Museum.

Generally foreigners visit the Vasa in the summer period (June-September) and for them is mainly a one visit museum. On the contrary

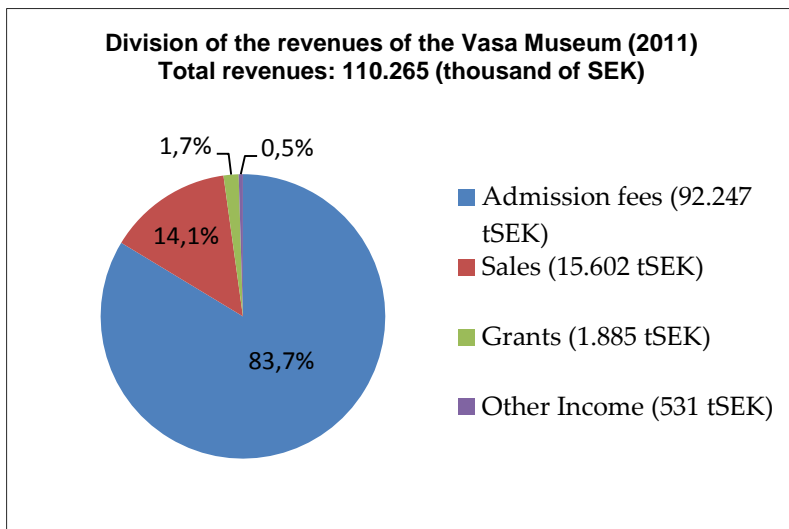
⁵⁹⁷ Data source: Vasa Museum.

⁵⁹⁸ Data from the web-site: <http://www.vasamuseet.se/en/About/Museum-visitors/>.

⁵⁹⁹ Data source: Swedish National Maritime Museums, *Årsedovisning 2011*, Stockholm, 2011, p. 7.

the access of the Swedish people to the Vasa is more distributed during the year and it is not excluded that they may repeat their visit. The international popularity and appealing of the Vasa has been officially recognized on 2009, when the Vasa Museum won the TRIP Global Award (the “Best experience in Sweden” Award) instituted by the Swedish Travel and Tourist Industry Federation (RTS). Statistically it is also interesting to notice that there is a perfect balanced gender distribution of the visitors (according to the 2011 data, 50% of the visitors were male and 50% female)⁶⁰⁰. Thus, the old-fashioned idea that the maritime cultural heritage is more a “male heritage” has to be completely review.

This incredible high attendance produces a significant direct economic impact (110.265 tSEK of total revenues for the year 2011). The selling of tickets represent the main economic resource for the museum (83,7%), but a relevant contribution is also offered by the sales of objects through the Vasa Museum Shop (14,1%).



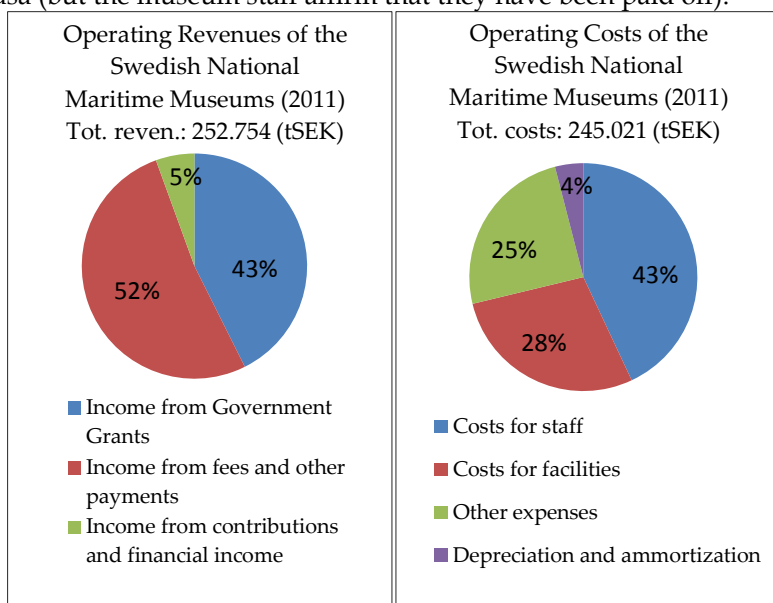
21. Division of the revenues obtained by the Vasa Museum (2011)⁶⁰¹

The total income of the Vasa Museum (110.265 tSEK) represents about the 44% of the total income of the Swedish National Maritime Museums (252.754 tSEK)⁶⁰².

⁶⁰⁰ Swedish National Maritime Museums (2011), *last op. cit.*, p. 24.

⁶⁰¹ Data source: Swedish National Maritime Museums (2011), *last op. cit.*, p. 27.

Remarkably, the 2011 Swedish National Maritime Museums' income statement, which compares the operational revenues and costs, shows a closing positive budget. A big contribution for sustaining the activities conducted by the Swedish National Maritime Museums is also offered by the Swedish government, which grants correspond to the 43% of the total income. In terms of costs, the operational expenses are nowadays mainly related to the salaries of the engaged staff (43%) and to the cost for the facilities (28%). Unfortunately there are no available data about the overall costs sustained by the museum since the recovery of the Vasa (but the museum staff affirm that they have been paid off).



22. Operational revenues and costs of the Swedish National Maritime Museums in 2011⁶⁰³

Overall, the city of Stockholm, in 2011, got around SEK 15,4 billion of revenues from visitors. The increased number of tourists who visited Stockholm in the last ten years has created new job opportunities: on 2011 almost 12.500 people were employed in the tourism sector (24% more than in 2001)⁶⁰⁴. The impact produces on these data by the Vasa

⁶⁰² In the chart below the voice "Income from fees and other payments" takes into consideration the contribution of the Vasa Museum plus the incomes achieved by the Maritime Museum and the Naval Museum.

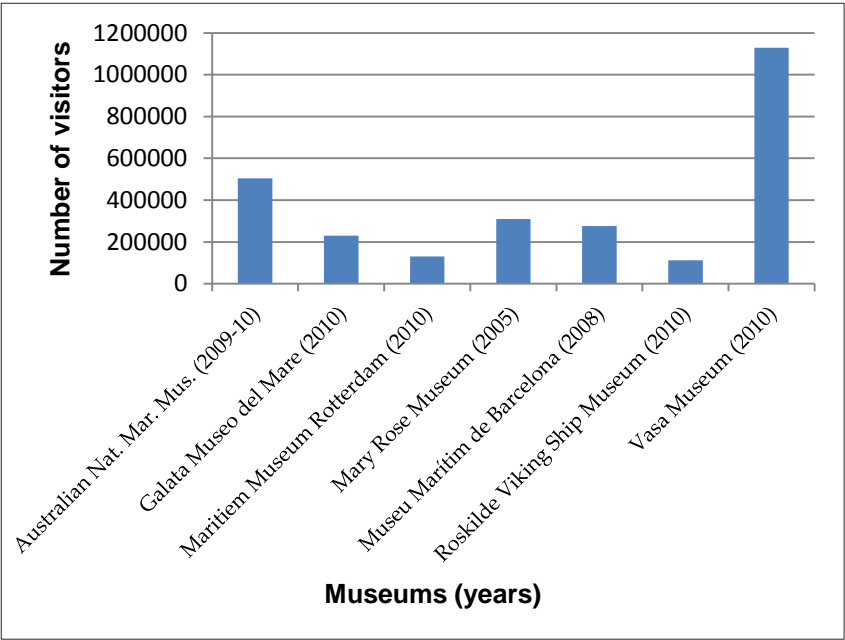
⁶⁰³ Data source: Swedish National Maritime Museums (2011), *last op. cit.*, p. 28.

⁶⁰⁴ Stockholm Visitors Board, *Facts about Stockholm's tourism industry*, 2011, pp. 18-19.

Museum is hardly quantifiable. However, considering the average attendance of almost 1.000.000 people in the last ten years, it is presumable that this museum has significantly contributed to the success of Stockholm as a tourist destination.

Moreover, as stated by Satterfield, “some values cannot be expressed as numbers or declarative statements but are, instead, embedded in the contextually, emotively, and morally rich stories and conversations through which we define ourselves and our actions in relation to natural systems”⁶⁰⁵. The quality of life or the community pride are examples of added values hardly quantifiable.

To conclude, comparing the number of people who have visited some of the most famous international naval and maritime museums visibly comes out how the results achieved by the Vasa Museum are outstanding and uncommon.



23. Number of visitors per year of some of the main international maritime museums

⁶⁰⁵ Satterfield T., “Numbness and sensitivity in the elicitation of environmental values”, in De la Torre M. (edited by), *Assessing the Values of Cultural Heritage*, Research Report From the Getty Conservation Institute, Los Angeles, 2002, p. 88.

This incredible success may be explained considering different causes.

First of all, the outstanding level of preservation of the Vasa wreck makes this museum *de facto* a matchless experience in the world.

Second, the idea of moving from a building primarily focused on conservation aims (the Vasa Shipyard) to a more visitor-centered structure (the Vasa Museum) has been successful. The current museum is, from one hand, designed to offer the best conditions for the conservation and archaeological investigation of the Vasa; but, on the other hand, it is also organized to maximize the enjoyment of the visitors. This successful managerial approach, aimed to meet as far as possible the needs of the visitors, is still nowadays pursued: an expansion of the museum spaces is, in point of fact, scheduled for summer 2013. The goal is to provide a new hall for temporary exhibitions and special programs, to relocate the shop and the service area, and to restructure the entrance hall in a way in order to reduce the queuing at peak season and to increase the total number of visitors that can simultaneously enjoy the museum (from 1.600 to 2.000).

Third, from the beginning the Vasa Museum has created a net of links with several local institutions and it has adopted a marketing strategies aimed to get the attention of the media. These activity have raised the public awareness and knowledge about the Swedish maritime and underwater cultural heritage. This *“long term marketing strategy has made the Vasa museum a landmark and a must-see for visitors to Stockholm”*⁶⁰⁶.

Fourth, the museum staff has successfully cured the promotional aspect, organizing the historical events related to the Vasa in an original and appealing story for the visitors. As a result the scientific data have been converted in information understandable and tempting for the public. This, in turn, has increased the chances for the visitors to appreciate and enjoy their experience at the museum.

Finally, the Vasa museum is very well located. First of all, it is displaced in the center of an European capital (Stockholm). If constructed in other smaller or decentralized cities probably this museum could not obtain the same level of success. Moreover, compared to other European capitals like, for example, London, Paris or Rome, the competition with the other local museums is more

⁶⁰⁶ Olsson A. (2010), *op. cit.*, p. 353.

limited. As a matter of fact, on 2011 the Vasa museum has been visited by around 1.200.000, which is more than double compared to the others most visited museums of Stockholm, the Moderna Museet, the Swedish Museum of Natural History and the National Museum (which have been respectively visited by 545.000, 523.000 and 402.000 people)⁶⁰⁷.

These conditions (and possibly others not identified yet) make the Vasa Museum the most popular maritime museum in the world. Some of them are practically exportable to other realities (excellence in the service provided to the public, creation of a comprehensive network, adoption of a proactive marketing approach and attention to the story telling), but others seem specific conditions hardly reproducible (outstanding level of preservation of the relic and strategic position of the museum).

1.3 Benefits and limits of the exhibition (or storage) of underwater cultural goods in “on-land” museums

Despite a growing and justified support for the preservation *in situ* approach and a continuous development of technologies dedicated to diving experiences and deep-sea explorations, there is still a wide number of people who, despite a potential interest toward maritime archaeology, cannot (or do not want to) access underwater sites *in situ*⁶⁰⁸. Therefore, to this day, the recovery and exhibition of underwater cultural goods in “museums on-land” is still a key practice for the protection, investigation and enhancement of this heritage⁶⁰⁹. But, at the same time, as highlighted by Olsson, “*in the late 1950ies and early 1960ies, recovering a shipwreck was an act of preservation. Today... we need to think of other approaches*”⁶¹⁰.

⁶⁰⁷ Stockholm Visitors Board (2011), *op. cit.*, p. 14. Actually, according to this data, the Skansen, has been visited more than the Vasa Museum itself (almost 1.400.000 people). However, the Skansen is a particular kind of “museum”: it is actually a zoo, but also an open air museum.

⁶⁰⁸ At international level the number of divers is growing, but it still represents a small percentage of the world population. Fear of the deep water, inability to swim, costs of the diving apparatus and necessity to get a license are probably the main causes which hinder a rapid and wide diffusion of divers worldwide.

⁶⁰⁹ On this issue see Wijkander K., “The role of the traditional museum”, in Satchell J. and Palma P. (Edited by), *Managing the Cultural Heritage: Defining, accessing and managing the resource*, Council for British Archaeology, 2007.

⁶¹⁰ Olsson A. (2010), *op. cit.*, p. 355.

The table below schematizes the main benefits and limits of this method of management.

RECOVERY AND EXHIBITION IN “ON-LAND” MUSEUMS		
INTERESTS	POSITIVE ASPECTS	NEGATIVE ASPECTS
Scientific research	Recovered artifacts can be available for scientific analyses that are hardly feasible <i>in situ</i> ;	Excavation and recovery are in any case irreversible processes;
Conservation	Reduction and monitoring of the deterioration processes; Protection from physical and biological threats; Restoration of the object;	Long-term process, entailing high costs of treatments and controlled settings; The deterioration process can be mitigated, but it cannot be completely stopped; Risk of unexpected reactions;
Protection	Reduced risk of looting (stealing) and damages; No risk from activities that may incidentally affect this heritage;	Sometimes the process of recovery can be risky (due to adverse conditions);
Preservation <i>in situ</i>	The context can (should) be recorded and analyzed before the operation of recovery;	Substantially the preservation of the context is sacrificed;
Access	The access is potentially maximized (being opened to the common public);	Is an authentic experience the fruition of this heritage in museums “on-land”?;
Promotion	Possibility to maximize the communication process; Possibility to develop educational initiatives related to the museums activities;	Promotion is not always valorized enough (especially in local-national museums); Only few institutions organize educational programs;
Socio-economic impact	Potential high number of visitors; Possible high social and indirect economic benefits;	Extremely high costs for the recovery, conservation and exhibition of an entire wreck; The conservation’ costs should be valued in the long-term;

24. Table summarizing benefits and limits of the recovery and exhibition of the underwater cultural heritage in “on-land” museums

This method of management was largely used in the past and still today it represents a valid solution in certain circumstances. Recovering the underwater goods may, on one hand, significantly reduce the risk of damages and looting caused by human activities (whereas the operations of excavation are realized adopting archaeological professional standards of investigation); on the other hand, provide the possibility to make them enjoyable for the general public and to conduct some scientific researches hardly achievable *in situ*. Negatively, it is a destructive process that substantially sacrifices the

preservation of the context (despite the fact that, before any operation of recovery, the archaeological recording of a site context should be a compulsory activity).

In addition, it is still an open question if the enjoyment of the underwater cultural heritage outside its context can be considered an authentic experience. The high appreciation of the Vasa museum seems to testify that, when an exhibition is well realized and it provides a convincing story, the public enjoy it as an authentic cultural experience. Moreover, in order to do not totally break the link between the recovered goods and their underwater environment a mix of modern technologies and consolidated practices of visualization (such as, for example, 3D reconstructions, photos and videos) may be used to show to the public how was originally the site. These tools may increase the public comprehension and appreciation of the underwater cultural heritage. Nevertheless, the fruition of the underwater cultural heritage *in situ* provides different sensations that those perceivable observing it in an “on-land” museum. In my view, they are certainly diverse experiences, but probably both can be assessed as “authentic”.

The conservation “on-land” of the recovered artifacts is a controversial aspect. From one hand it is a challenge which implies long-terms treatments and high costs (especially when the structure of an entire shipwreck, like the Vasa, has to be conserved). On the other hand, it is an opportunity because the remedies adopted can slow down an ongoing deterioration process permitting, at the same time (or after a certain period), to publically display and regularly monitor the recovered goods.

A related problem is that the start-up and operating costs of this method of management are very high⁶¹¹. A museum dedicated to the investigation, conservation and exhibition of underwater cultural heritage needs:

- qualified and experienced archaeologists and conservators;
- well-equipped laboratories for the analysis and a structure that may produce the necessarily environmental conditions (such

⁶¹¹ Manders, for example, estimates a total cost of €77 million for the recovery, conservation, display and management of the Mary Rose wreck and €4.5 million for the Bremer cog (but without considering the cost of display). See Manders M. (ed.,2011b), *op. cit.*, p. 45.

- as, for example, in terms of light, temperature and humidity) for the conservation of the recovered goods;
- satisfactory financial resources to face the long-term conservation process⁶¹².

These costs are (partially) compensated by a high social impact (in terms of dissemination of knowledge and skills, construction of community identities, etc.) and a potentially relevant indirect economic impact primarily realized through the attraction of heritage tourists. Consequently, an international maritime museum has the essential features to increase the quality of life within a community and to significantly develop the local economy. However, it has to be clear that the outstanding outcomes achieved by the Vasa Museum are the result not only of an efficient managerial approach, but also of a series of “fortunate circumstances”. Therefore, the potential role of a maritime museum as touristic attraction has to be evaluated and weighted according to the context in which the museum is located. The data organized in chart 23 confirm, in any case, that international maritime museums may attract a relevant number of visitors (over 100.000 people per year), considerably supporting the economic growth of the local touristic infrastructures.

Anyway, the recovery of the underwater cultural heritage is a costly, risky and, sometimes, unnecessarily process. Therefore, before proceeding with the operations of recovery, a good practice is to reflect on the overall long-term costs and benefits (not only of economic nature) because with the same resources required for conservation and display “on-land” of a single shipwreck it is possible to preserve *in situ* an incredible high number of sites.

Another tricky aspect concern the promotion of the maritime museums. Potentially, as structure, a museum “on-land” has all the resources to diffuse the knowledge about the underwater cultural heritage and the spaces to develop a varieties of educational activities. On the contrary, several times, this opportunity is not seized being undervalued the importance of promotion as a key factor for making growth and develop the museum itself. But, as suggest by Herreman, there is “the

⁶¹² Similar considerations have been proposed by Panter I., “In situ preservation versus active conservation: are we prepared for the deluge?”, pp. 59-62, in Satchell J. and Palma P. (Edited by), *Managing the Cultural Heritage: Defining, accessing and managing the resource*, Council for British Archaeology, 2007.

need to implement marketing programs for museums and their activities in order to “position” them correctly in a world full of entertainment”⁶¹³. Therefore, as shown by the Vasa Museum case, the success of a maritime museum is also directly linked to the successful investment of resources in the promotional process. From a practical perspective, the realization of a well-organized and user-friendly web-site could already produce evident beneficial effects on the number of visitors.

On the base of these considerations (and as supported by Rule 1 of the Annex), this method of management should be mainly adopted in three circumstances: first, when it is not possible to conserve and/or protect the underwater cultural heritage *in situ* (due to an instable environment, forthcoming relevant risks, etc.); second, when the excavation and recovery of the site is required for significant scientific studies; third, when the display in a museum “on-land” may considerably enhance an underwater cultural site (but being aware of the related high costs and the long-term conservational challenges).

Probably, it is also necessary to re-think about the traditional role of museum. From one hand, the Nanhai No. 1 case shows that the exhibition of the underwater cultural heritage in museum-aquariums (in this case the Guangdong Maritime Silk Road Museum) is nowadays a feasible option. This solution has two main advantages: first, to reduce the long-term and costly process of conservation that is, on the contrary, required for the objects exposed to the air; second, to enable visitors to observe underwater archaeologist directly involve in an excavation process on a submerged relic. Therefore, even if there are still some problems to face (like, for example, long-term conservation, water transparency and stability of the container of recovery), this solution should be further investigated⁶¹⁴.

On the other hand, the museum “on-land” should also be re-used to present and promote the sites that are still preserved underwater. As sustained by Olsson “*first tries using ROV (Remote Operated Vehicles) to visit and visualize in situ shipwrecks for non-divers are promising and may*

⁶¹³ Herreman Y., “The Role of Museums Today: Tourism and Cultural Heritage”, in Hoffman B. T. (Edited by), *Art and Cultural Heritage: Law, Policy and Practice*, Cambridge University Press, 2006, p. 419.

⁶¹⁴ On this issue see both Jun W. (2010), *op. cit.*, pp. 357-371 and Björdal C. G., Nilsson T. and Petterson R., “Preservation, storage and display of waterlogged wood and wrecks in an aquarium: “Project Aquarius””, *Journal of Archaeological Science*, Vol. 34, Issue 7, 2007.

prove to attract thousands of people in a near future”⁶¹⁵. As a result, “the challenge for museum managers in handling change is to create a climate where molecular change and innovation are enabled, where open interaction is encouraged and nurtured, where a free market of ideas is allowed to flourish and where organizational boundaries are permeable to a diversity of external influences”⁶¹⁶.

2. Underwater museums

2.1 Introduction

In recent years some states have evaluated the realization of underwater museums as tempting option for the management of immovable or semi-movable sites located close to their coast. An underwater museum is a construction which, creating a structural connection between the land and the submerged site, offers to the general public the opportunity to directly enjoy the underwater cultural heritage *in situ*.

To date, the only underwater museum accessible in the world is the Baiheliang Underwater Museum (China), officially opened in 2009. Actually, in 1997, the Egyptian authorities and the UNESCO made a first proposal for the construction of an underwater museum at the sunken eastern ancient royal quarters of Alexandria (Egypt). However, to date, this project has not been realized yet.

Considering the restricted number of information available (due to several causes such as, for example, language barriers, limited number of scientific publications, restricted number of case studies, feasibility and updating researches still in development phases, etc.) both these cases (Baiheliang and Alexandria) will be here jointly investigated in order to assess the main limits and benefits of this method of management.

⁶¹⁵ Olsson A. (2010), *op. cit.*, p. 356.

⁶¹⁶ Peacock D., “Making Ways for Change: Museums, Disruptive Technologies and Organisational Change”, *Museum Management and Curatorship*, Vol. 23, Issue 4, 2008, p. 349.

2.2 The underwater museums of Baiheliang and Alexandria

Brief history of the archaeological sites of Baiheliang and Alexandria

Baiheliang is a stone ridge located in the waters of the Yangtze River at Chongqing city (China). The site presents ancient stone fish figures and hydrologic inscriptions engraved starting from the Tang Dynasty (618-907) to Modern time in order to record the periodical lowering of the Yangtze River's water level. According to Xiurun Ge, the architect who directed the construction of the underwater museum, the Baiheliang site is "*the No.1 well-preserved Ancient Hydrometric Station and the rare under-water inscription in the World*"⁶¹⁷.

Till few years ago these inscriptions periodically (once every three or five years) emerged from the water becoming visible to the public. However the planned construction of the Three Gorges Dam Project would definitively submerged the site. Thus, the idea to develop an underwater museum in order to preserve the site *in situ*, but making its most rare inscriptions available for public enjoyment. The realization of the project began in 2003 and finished on 18 May 2009, when the first underwater museum in the world became publically accessible⁶¹⁸.

In ancient time the port of Alexandria was one of the most exploited crossroad of the Mediterranean civilizations. A series of earthquakes in different eras and the local subsidence phenomenon have plunged part of the ancient city. As a result, thousands of archaeological structures and artifacts are currently submerged in shallow waters close to the coast (among them, excellent historical remains and ruins such as, for example, the Pharos of Alexandria and the Cleopatra's palace).

Therefore, in recent year, the construction of an underwater museum has been proposed as a way to enhance this incredible heritage as well as an opportunity to develop the city of Alexandria providing a new touristic attraction.

⁶¹⁷ Xiurun Ge, "Baiheliang Ancient Hydrologic Inscription - No.1 Ancient Hydrometric Station in the World and In-situ Underwater Protection Project", *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010, p. 1.

⁶¹⁸ For an overview of the operations conducted for the preservation of cultural goods in the Three Gorges see Chuanping W., "Preservation of Cultural Relicts in the Three Gorges and the Establishment of the Three Gorges Museum Complex", *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010.

The organizational and legal context

The Baiheliang underwater museum is a public museum. Since 2009 a key role in the management of the underwater cultural heritage in China is played by the National Conservation Center for Underwater Cultural Heritage. This center, operating under the direction of the State Administration of Cultural Heritage (SACH), organizes comprehensive scientific researches, undertakes fieldworks, coordinates local institutions linked to the underwater cultural heritage and provides training courses. From an architectonical and engineering perspective different institutions have played an active role in the building of the underwater museum and in the conduction of the related feasibility studies. Among them, for example, the Institute of Rock and Soil Mechanics of the Chinese Academy Sciences, the Institute of Geomechanics and Geotechnical Engineering, the Shanghai Jiao Tong University and the Chongqing institute of hydrology science.

The Alexandria's underwater museum project has been, on the contrary, evaluated by an international joint group composed of:

- the Egyptian authorities, mainly represented by the Department for Underwater Antiquities (DUA)⁶¹⁹;
- UNESCO, which has organized the International Scientific Advisory Committee for conducting feasibility studies on the project;
- the architect Jacques Rougerie, who has designed the Alexandria's underwater museum;
- the Hilti Foundation, that has financed the feasibility studies.

The feasibility studies started on January 2009 but, unfortunately, there are no updated news about the current status of the project.

From an international legal perspective both Egypt and China have ratified the UNCLOS and the 1989 Salvage Law Convention (China recurring to the reservation of art. 30, par. 1 (d)). On the contrary they have not ratified yet the 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage.

In China, at national level, the issue is mainly governed by the Regulations of the People's Republic of China Concerning the

⁶¹⁹ The Department for Underwater Antiquities (DUA) has been founded in 1996 at Alexandria with the aim to protect the Egyptian underwater cultural heritage. The Department acts under the direction of the Supreme Council for Antiquities (SCA).

Administration of the Work for the Protection of Underwater Cultural Relics (1989). Article 4 indicates the State Administration of Cultural Heritage as the central organization responsible for the registration, regulation, management and protection of the underwater cultural relics. According to art. 7 “archaeological exploration and excavation activities with respect to underwater cultural relics shall have, at their objective, the protection of cultural relics and scientific research”⁶²⁰. Those who damage, explore or excavate without authorization, hide, traffic, illicitly sell or exports underwater cultural relics will be punished according to the provision established in the Law of the People’s Republic of China on Protection of Cultural Relics (order of the President No. 76, amended on 28 October 2002)⁶²¹.

In Egypt there is not a specific law dedicated to the protection of the underwater cultural heritage. This issue is regulated by the Egyptian Law on the Protection of Antiquities (Law No. 117 of 1983, amended with the law No.3 of 2010). According to this law, the Supreme Council of Antiquities is “the exclusive authority concerned with all that is related to antiquities’ affairs”⁶²². As general provision, “trade, sale or commerce in antiquities including all antiquities held as private property shall be prohibited”⁶²³. Articles 40-47 list a set of administrative and penal sanctions for those who violate the Law on the Protection of Antiquities⁶²⁴.

⁶²⁰ China, Regulations of the People’s Republic of China Concerning the Administration of the Work for the Protection of Underwater Cultural Relics, 20 October 1989, art. 7 in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneo*, Vol. 4, Massa Editore, Sep. 2004, p. 137.

⁶²¹ See China, Law of the People’s Republic of China on Protection of Cultural Relics (order of the President No. 76, amended on 28 October 2002), 2002, arts. 66-79.

⁶²² Egypt, Law on the Protection of Antiquities (Law No. 117 of 1983) as amended with the law No. 3 of 2010, 2010, art. 5.

⁶²³ Egypt (2010), *last op. cit.*, art. 8. The same article explains that the private owner may dispose of the antiquities receiving a written authorization from the Council which, in any case, “has the priority of having the antiquity from its owner or possessor in return for a fair compensation”.

⁶²⁴ The system of deterrence is particularly effective because the sanctions laid down by the law are very harsh, often implying, besides the payment of fancy fines and the confiscation of the used resources, several years of imprisonment.

Values and threats related to the Baiheliang and Alexandria's sites

The richness of the sites of Baiheliang and Alexandria is expressed by the values that they represent:

- Aesthetic value: the view *in situ* of the stone fish figures and hydrologic inscriptions at Baiheliang, as well as, the sphinxes and other statues at Alexandria is an unforgettable experience. However the water pollution in these areas may represent an obstacle to a complete fruition and enjoyment of these sites.
- Archaeological value: the site of Baiheliang is particularly significant from an archaeological perspective because it allows to study and compare over 30000 characters of inscriptions dating back to different periods (there is at least one paragraph from each of these dynasties: Tang, Song, Yuan, Ming and Qing). The numerous artifacts and ruins discovered in the waters adjacent the city of Alexandria represent a milestone for the archaeological research, providing time capsules that move from the Pharaohs' dynasties to the Arab-Islamic era (passing from the Hellenistic era, the Roman era and the period of Christianity). In the view of Fuchs "*the Bays of Alexandria and the neighboring area Abukir Bay in Egypt house some of the most important submerged archaeological remains worldwide*"⁶²⁵.
- Artistic value: in these two sites there are stunning samples of ancient art like, for example, the engraved poems and patterns of fishes on the stone ridge at Baiheliang or the granite sphinxes at Alexandria.
- Economic value: potential both sites have the features to attract a significant number of heritage visitors.
- Historical value: the submerged site of Alexandria is the font of numerous appealing stories: the lighthouse of Alexandria, the harbor constructions of the Ptolemaic period, the Cleopatra's palace and the Timonium of Mark Antony are all structures associated to events and people immortalized by history.
- Research value: both Baiheliang and Alexandria are important sources for several studies. In the first case, the record of the lowest-flow level of the Yangtze River through the centuries

⁶²⁵ Fuchs A., "The Alexandria Museum of Underwater Archaeology Project - "Sunken Cities", *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010, p. 372.

*“provides extremely valuable physical references for studying the variation rules of global and local climate and the hydrology of Yangtze River in history”*⁶²⁶. In the second case, the conducted surveys have, for example, allowed *“to evaluate more closely how the tectonic movements have modified the Alexandria coastline”*⁶²⁷.

- Symbolic value: these sites are unique from an archaeological and historical perspective. Therefore they have the necessarily features for becoming, in the next future, symbols of the cities in which they are located.

An underwater museum seems more a solution for the enhancement of a site rather than for its protection or conservation. As already stated, in the Baiheliang case the idea to construct an underwater museum was principally aimed to keep visible at least a section of the site which was going to be definitively submerged under 30 meters of water due to the realization of the Three Gorges Dam Project. Similarly, the Alexandria’s underwater museum project is primarily aimed to enhance the submerged ruins respecting the preservation *in situ* approach. Considering the typology of these sites (immovable and semi-movable remains), as well as their environmental conditions, maybe the main threat for these archaeological goods is represented by the process of erosion, but the data are scarce for a more precise evaluation⁶²⁸.

Analysis of the interests at stake

Preservation *in situ*

One of the advantages of the underwater museums compared to the museums on-land is that they may respect the preservation *in situ* policy. Both the Baiheliang and Alexandria’s projects perceive the preservation *in situ* as the best approach for the conservation and enjoyment of these sites in their authentic historical and natural context.

⁶²⁶ Xiurun Ge (2010.), *op. cit.*, p. 4.

⁶²⁷ Goddio F., Bernard A., Bernard E., Darwish I., Kiss Z. and Yoyotte J., *Alexandria. The Submerged Royal Quarters*, Periplus Ltd, London, 1998, pp. 252-253.

⁶²⁸ This consideration is simply based on an overall assessment of the sites’ features. Unfortunately the author has not detected scientific publications which present in details the current status of conservation of these sites.

Scientific Research

Surveys and archaeological investigations have (preferably) to be realized before the building of an underwater museum: despite the preservation *in situ* provides the chance of further successive studies, the structural organization of an underwater museum may produce intrusive effects on the contextual disposition of the remains.

There are not available data (at least in English) about the archaeological investigations conducted specifically on the Baiheliang underwater archeological heritage. However, Houxi provides an overview of the huge archaeological plan (774 archaeological projects, a planned exploration area of 12 million m² and a planned excavation area of 1,7 million m²) undertaken within the Three Gorges Project⁶²⁹.

On the contrary from 1994 advanced scientific researches have been conducted on the Alexandria's ancient eastern royal quarters (thus, years before planning the construction of an underwater museums). A two years archaeological campaign was conducted between 1996-1997⁶³⁰. Topographical surveys and extensive visual explorations have been realized with the aim to accurately draw the shape of the ancient eastern harbor. Moreover the researches conducted on columns and blocks have increased our knowledge about the disposition of the harbor installations, while the numerous epigraphy discovered *in situ* are precious archaeological resources that may be compared with the already available texts of ancient writers in order to get new information about past events.

Conservation and Protection

In terms of protection a mayor challenge is the risk of damaging the site during the construction of the underwater museum. Building an underwater museum may be an invasive process which needs to be planned in details in order to safeguard the integrity of the site. For this reason advanced feasibility studies have been preventively conducted

⁶²⁹ Houxi Z., "Phased Results and Follow-up. Archaeological Work at the Three Gorges", *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010.

⁶³⁰ For detailed information about this archaeological campaign see Goddio F. *et al.* (1998), *last op. cit.*, pp. 1-274.

before the realization of the Baiheliang underwater museum (as well as for the Alexandria underwater museum project).

Moreover, further measures may be adopted to reduce the factor of risk. During the building of the Baiheliang underwater museum, for example, sand bags have been disposed on the inscriptions in order to protect them from the eventual fall of heavy objects.

Once realized, an underwater museum seems able to provide a high degree of protection to the related site and the same level of conservation as that offered by an underwater archaeological park. However, the lack of information do not permit more advanced considerations on this issue.

Access and Promotion

Both the Baiheliang and Alexandria (planned) underwater museums are structurally characterized by an on-land exhibition space (for the interpretation of the site, the display of the recovered artifacts and explanations about the realization of the underwater museum) and an accessible underwater section which favors the enjoyment of the goods preserved *in situ*.

One of the main challenge related to the building of an underwater museum is specifically represented by the safety and stability of the submerged structure.

In the Baiheliang case the main difficulty faced during the construction of the underwater museum was related to the deepness of the site (30-40 meters below the water-level) and the associated strong water-pressure. In the end the competent authorities approved the development of a water pressure-free container scheme able to balance the water pressure inside and outside the protective shell (*"that is to say, water pressure inside protection body synchronously changes with that of the Yangtze River outside it"*⁶³¹).

In the Alexandria case, on the contrary, the water pressure issue is not particularly problematic due to the low deepness of the site (around 6 meters below the sea level). However, the strong underwater currents in the area may represent an obstacle in the future realization of the

⁶³¹ Xiurun Ge (2010), *op. cit.*, p. 14.

underwater museum and the risk of earthquakes has to be considered too.

Another mayor challenge is the quality of the experience. Both the projects shared the problem of murky waters which may obstacle the aesthetical fruition of the site. At the Baiheliang underwater museum, after initial difficulties due to a technical breakdown, seems that the poor visibility issue has been solved through a water filtration system (but, unfortunately, few details are available about the adopted system). A related problem is the cleaning of both the “exposed” artifacts and the glasses from which the public may enjoy this heritage. As highlighted by Guerin *“most submerged sites are originally covered by silt, sand or mud because the water displaces such material easily. It creates however a real problem in the presentation (and conservation) of a heritage site if it would need cleaning every day or even hour in order to be visible”*⁶³².

An additional problem that the Alexandria’s underwater museum project has to face is to identify the location for the underwater museum structure (and the related consequences). Different options have been considered.

The first solution is to construct the museum in the Eastern Bay, in front of the New Bibliotheca Alexandrina. Positively, adopting this solution the underwater structure will not be placed above any historical remains (thus, preserving their integration) and, thanks to the natural conformation of the Bay, it will be partially protected by storms and waves. Negatively, this space is nowadays a transitional area for the local fishing companies and the authenticity of the entire planned experience is in doubt considering that *“no authentically placed objects would be shown. All exhibited relics would come from a location different from that finally attributed in the exhibition space. The museum would recall their original submerged position, but would displace them”*⁶³³. Thus, the need to evaluate the entire project through a cost-benefit analysis: the question is if the high costs and the difficulties to implement this underwater museum are fairly balanced by the final outcome (a structure that display appealing relics in an underwater context that, however, it is artificially constructed).

The second solution is to place the submerged structure in the outer part of the Bay, close to the Quait Bay Fort. Positively, adopting this

⁶³² Guerin U. (2010), *op. cit.*, p. 211.

⁶³³ Fuchs A. (2010), *op. cit.*, p. 375.

solution the visitors will have the incredible opportunity to enjoy the remains of the ancient Pharos lighthouse of Alexandria in its authentic context as well as the artifacts of other sites artificially displayed. Negatively, the museum, in this location, will not enjoy of the natural protection of the Bay (thus, the need to find a solution for facing the problem of the waves impact) and “*difficult might also be the protection of the site from the surrounding navigation*”⁶³⁴.

Despite these challenges, underwater museums are highly appealing structures. At the Baiheliang underwater museum visitors have the exceptional opportunity to directly observe from one of the 23 resin glass windows some of the ancient hydrological inscriptions, with the additional support of a system of underwater cameras which provides a more detailed view of the engravings. This is a new way to appreciate the underwater cultural heritage.

In terms of promotion, the underwater museums may recur to the same tools used by maritime museums (publication in scientific and public reviews, organization of lectures, web-sites, social networks, etc.). An unusual, but interesting method to promote the Baiheliang underwater cultural heritage has been the enrolling in the language compulsory schools’ books of a text entitled ‘*ups and downs of Baiheliang*’ aimed to shortly explain the related scientific, archaeological and artistic values of the site as well as the scheme of no-pressure container installed in the underwater museum⁶³⁵.

Despite representing an innovation in international maritime museums’ sphere, till now the Baiheliang underwater museum has mainly caught the sole attention of the Chinese population, achieving less significant results at global level (possibly due, for example, to an overall lack of publications and accessible information in English). The Alexandria underwater museum, on the contrary, being still at the planning stage, has not developed yet an advanced system of promotion (even if some articles, images and a video of the proposed project are already available on the net)⁶³⁶.

⁶³⁴ Fuchs A. (2010), *op. cit.*, pp. 375-376.

⁶³⁵ As stated by Xiurun Ge “*up to now about 100 million school boys and girls have learned ‘ups and downs of Baiheliang’ in China*”. Xiurun Ge (2010), *last op. cit.*, p. 30.

⁶³⁶ The video (in French) about the planned Underwater Museum of Alexandria is available at the following link: <http://www.youtube.com/watch?v=6TZs8d9ZsnM>.

Socio-Economic Impact

The social impact of an underwater museum is potentially like that of a maritime museum. During the design phase of the Baiheliang underwater museum local universities and research centers had the opportunity to be involved in this innovative project. In the case of Alexandria the construction of an underwater museum could represent a possible turning point for the development of the whole city: *“the attraction of a true submerged museum will help to attract and deviate the main visitor streams from the Cairo based Giza Pyramids also to other places that are located along the way to Alexandria as well as to Alexandria itself”*⁶³⁷. In addition, it may strengthen the already affirmed international role of the Alexandria Centre for Maritime Archaeology & Underwater Cultural Heritage. Therefore, as sustained by Amin, *“creating the Underwater Archaeological Museum, whose first mission is to protect and present the findings made in the Alexandria Eastern Harbor Bay and to enhance the value of cultural assets of the city, will also be a pillar of local development and economic growth of the city”*⁶³⁸.

Unfortunately there are not official data about the number of people who have visited till now the Baiheliang underwater museum. Therefore an estimation of the of its direct and indirect economic impact is hardly realizable. However, an article of the CNTV.CN reports that from April 2010 till July 2012 more than 300.000 people visited this museum⁶³⁹. At first glance this data seems realistic considering the typology of the structure and the “novelty factor”. Concerning the underwater museum of Alexandria, as obvious, there are no data yet. Nonetheless, Fuchs reports that *“the whole project is for the moment designed to accommodate 5,000 persons simultaneously i. e. 3,000,000 visitors annually”*⁶⁴⁰. Consequently, we may presume that an underwater museum can reach a number of visitors (and, therefore, an economic impact) equal, if not higher, to that of the main maritime museums in the world.

⁶³⁷ Fuchs A. (2010), *op. cit.*, p. 374.

⁶³⁸ Amin N., “Underwater Archaeology Museum of Alexandria”, An Integrated Sustainable Development Role”, *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010, p. 382.

⁶³⁹ Li Wanran, “Underwater Museum “White Crane Ridge” temporarily closed”, CNTV.CN, ref. <http://english.cntv.cn/program/cultureexpress/20110725/106919.shtml>, last access 20/11/2012.

⁶⁴⁰ Fuchs A. (2010), *op. cit.*, p. 380.

Regarding the costs related to the construction of an underwater museum, the Chinese government has invested around 190 million Yen (almost \$28 million) for the construction of the Baiheliang underwater museum. Moreover, additional 16 million Yen (\$2,5 million) has been disbursed for the realization of certain museum's upgrades in 2012 (advanced system of lights, new multi-media display, etc.). On the whole these costs are significant, but relatively low if compared to the estimated costs for the realization of the Alexandria underwater museum. According to the designed project, up to \$140 million may be necessary for the development of the planned museum. On the base of these data it is evident that realize an underwater museum is an expensive process. Consequently the search for the required funds may represents an additional (prohibitive) barrier for its implementation.

2.3 Benefits and limits of the underwater museums

As suggested by Satchell and Palma *"the remote aspect of submerged heritage presents extra challenges for museums: the need to recreate for the general public what diving archaeologists have experienced and investigated at first hand requires considered and innovative solutions"*⁶⁴¹.

The development of an underwater museum is an appealing way to meet this requirement, offering to the general public the incredible opportunity to directly enjoy the underwater cultural heritage *in situ* without the need to get wet. However, the high costs required for its realization and a long series of further constraints significantly limit its applicability.

Table 25 sums up the main advantages and disadvantages related to the construction of an underwater museums.

⁶⁴¹ Satchell J. and Palma P. (edited by, 2007), *op. cit.*, p. 63.

UNDERWATER MUSEUMS		
INTERESTS	POSITIVE ASPECTS	NEGATIVE ASPECTS
Scientific research	Survey and other analysis can be conducted before its implementation;	Some investigative analysis could be hardly enforced <i>in situ</i> ;
Conservation	After some years the equilibrium reached between the U.C.H. and its surroundings slows down the deterioration process; The conditions of the site can be easily and constantly checked; Measures of stabilization <i>in situ</i> site can be adopted;	The construction of the museum's structure may alter the conditions of equilibrium; Some successive measures of <i>in situ</i> stabilization could be in contrast with this method of management;
Protection	Once realized, it substantially reduced all human threats;	It may be difficult to protect the artifacts during the building;
Preservation <i>in situ</i>	Guarantees the preservation <i>in situ</i> ;	Till now it has been considered only for underwater cultural sites adjacent to the coast; May the display needs have an impact on the site's context?;
Access	Enables to the general public the fruition <i>in situ</i> of the underwater cultural heritage;	Several parameters must be considered in order to make the experience in the museum safety and enjoyable;
Promotion	Possibility to maximize the promotion as well as the "museums on-land";	Already constructed or planned underwater museums have not reached, till now, an outstanding worldwide recognition;
Socio-economic impact	Potential high number of visitors; Possible high socio-economic impact;	Extremely high operational costs; Option currently available for a restricted number of sites;

25. Table summarizing benefits and limits of underwater museums

Apparently this method may fairly balance all the interests involved. Nevertheless, its practical implementation is limited by several constraints.

First of all, this method seems valid only in a limited number of cases. The sites should be close to the coast, relatively stable and solid enough to resist to the destructive force of waves, currents and tidal movements. Consequently submerged structures like, for example, ancient port facilities and sunken cities are probably the sites that best meet these conditions.

Second, the construction of an underwater museum may represent a risk, involving the use of heavy tools and dangerous materials close to (if not above) an underwater cultural site. But, as highlighted by Guerin, “*a construction should for instance neither damage the original site nor disfigure it*”⁶⁴². For this reason the feasibility studies should indicate, on one side, how the eventual implementation of an underwater museum would alter the conformity of the site and its surrounding environment; and, on the other, which kind of preventive measures could be adopted for ensuring the protection of the site during the building phase.

Third, the structural security of an underwater museum has to guarantee the absolute safety of the visitors. Therefore, decision makers should conduct advanced studies on any factor of risk that could cause a structural collapse. Both the perils of natural origin (like, for example, water pressure, underwater currents, waves impact, soil stability, earthquakes and storms) and those caused by human actions (such as, for instance, explosions or collisions with navigating ships) must be considered and assessed.

Fourth, the main advantage of an underwater museum is that it makes accessible to a large audience the underwater cultural heritage still preserved *in situ*. The challenge is to effectively ensure a high quality experience. Elements such as, for example, the water visibility and its transparency, the number and the state of conservation of the visible artifacts and the possibility to make them publically accessible in their original place (authenticity issue) must be evaluated in order to judge if the management of the concerned site through an underwater museum can really offer an “added value” that is unachievable adopting other (less demanding) alternative methods.

Fifth, building an underwater museum inevitably implies extremely high operational costs. For this reason, this method of management is

⁶⁴² Guerin U. (2010), *last op. cit.*, p. 210.

often perceived as unfeasible or barely appealing compared to the alternative solutions available.

Finally, there is a question of urban integration. In other terms, before the implementation of this ambitious structure decision makers should carefully evaluate its social, economic, environmental, architectural and urban impact (in the short and long-term) on the local area. As stated by Guerin “*the museum needs to complete the city, but also the city the museum*”⁶⁴³.

Overall, these demanding requirements make this method of management uncommon: to this day it has been adopted only in China for displaying the hydrological inscriptions of Baiheliang. This is also the reason why a full-scale evaluation of its effects on the different interests, as well as of its impact in the long period, is hardly realizable. Nonetheless, taking into account its capacity to preserve *in situ* the underwater cultural heritage and, at the same time, to make it accessible to the general public, the implementation of this method should be considered as a possible option for the enhancement of those sites with an outstanding international value or in a perspective of territorial revitalization.

3. Underwater archaeological parks

3.1 Introduction

One of the emerging method is the organization *in situ* of interpreted and accessible underwater archaeological sites. Despite a shared organizational structure, this method of management has been indicated with several names: underwater archaeological parks, underwater archaeological trails, underwater archaeological preserves, underwater archaeological sanctuaries and underwater museums. These diverse nomenclatures may generate unnecessarily misunderstandings. Therefore, in this analysis, this method of management will be simply indicated as underwater archaeological park⁶⁴⁴.

⁶⁴³ Guerin U. (2010), *last op. cit.*, p. 211.

⁶⁴⁴ Eventually a further distinction, that however will not be applied in this thesis, could be to divide this method of management in two sub-categories: the underwater archaeological preserves, characterized by a control of the public access (for example, the site can be visited only if accompanied by a guide, or having obtained a license, or

As method of management an underwater cultural heritage park is identified and characterized by the following features:

- it implies a preservation *in situ* of the underwater cultural heritage;
- it makes the sites accessible to the sport divers;
- it is organized and/or promoted with the aim to favor the comprehension and enjoyment of the experience (providing, for example, brochures and/or waterproof guides, installing underwater plaques and/or signal buoys, etc.);
- it is officially recognized by the competent authorities as an organized place or structure (denominated parks, trails, preserves, or one of the other names mentioned above).

Several underwater archaeological parks have been organized in different parts of the world. They have been used for the management of diverse typologies of sites (like sunken cities, underwater port facilities and shipwrecks) located in various environments (seas, lakes and rivers). Some of the most well-known underwater archaeological parks are: the Underwater Archaeological Park of Baia (Italy), the Underwater Archaeological Park of Caesarea (Israel), the Croatian Underwater Museums (Croatia), the Victorian Underwater Shipwreck Discovery Trail (Australia) and the Thunder Bay National Marine Sanctuary and Underwater Preserve (Michigan, USA). But it is the Florida's Underwater Archaeological Preserves (also called Florida "Museum in the Sea") that will be here analyzed as main case. What makes particularly appealing this case study is its ability to involve the local population in the decision-making process. The basic idea on which is structured the Florida's Underwater Archaeological Preserves is that awareness and protection of the underwater cultural heritage are two sides of the same coin. Therefore several educational initiatives have been promoted to increase the understanding and appreciation of this heritage.

As for the museums "on-land" paragraph, eventual methodological differences between the Florida's Underwater Archaeological Preserves and other relevant international cases will be identified and compared in the course of the analysis.

signing an inscription form, etc.); and the underwater archaeological trails in which the public access is totally open and free of charge.

3.2 The Florida's Underwater Archaeological Preserve

Brief history of the sites within the preserve

The state of Florida, with its 1.926 km. of coastline, is the first sport diving destination in U.S. and one of the mayor diving location in the world.

Since the entrance into force of the federal Abandoned Shipwreck Act in 1987, the Florida Department of States, Division of Historical Resources⁶⁴⁵ has organized a system of parks and trails aimed to protect and promote the maritime and underwater archaeological sites of the state. The Florida's Underwater Archaeological Preserves are one of the most appreciated sources of this system⁶⁴⁶.

The Preserve currently entails eleven shipwrecks ranging from the mid-18th century till the first half of the 20th century. Interestingly, the selection of these sites occurs primarily through a bottom-up approach. Florida's local communities are encouraged to propose shipwrecks that may be enrolled in the Preserve scheme. Then, the Division evaluates if the suggested sites satisfy certain mandatory parameters.

The shipwreck has:

- to be located in state waters;
- to be accessible to the public;
- to offer safe diving conditions;
- to present recognizable features;
- to be clearly identifiable and with a verifiable history;
- to be surrounded by plentiful marine life.

Satisfying these criteria the shipwreck may become a Preserve Candidate. The local community (diving centers, civic organizations, *ad hoc* foundations) is consulted again in order to determine its intention to be involved organizing a local group that may support the establishment of the Preserve. After that the necessary archaeological and historical researches and surveys are completed an official proposal for the new Preserve is eventually presented by the Division to the local community. If the proposal is accepted than the Preserve is officially established through an opening ceremony.

⁶⁴⁵ From here on the author will make reference to this group with the term 'Division'.

⁶⁴⁶ From here on the author will make reference to the Florida's Underwater Archaeological Preserves as unique group using the term 'Preserve'.

The eleven sites currently composing the Preserve are the following⁶⁴⁷:

- *USS Massachusetts*: an American battleship of the end of the 19th century. This battleship, which participated in the Spanish-American War, was decommissioned in 1921. It sunk off Pensacola, being used by the Navy as target for military artillery;
- *SS Tarpon*: a twin-screwed freight and passenger steamer constructed in 1887 and sunken in 1937 off the coast of Panama City Beach due to a violent storm;
- *Vamar*: an iron hulled vessel built in 1919, which successively sank out the channel toward the Gulf of Mexico in 1942 due to unclear circumstances. Before its sinking the vessels made several voyages between Antarctica and New Zealand under the direction of captain Byrd;
- *City of Hawkinsville*: a two decks steamboat of the late 19th century that was finally abandoned in the Suwannee River by its captain in 1922;
- *Regina*: a steel steamer successively converted in a tanker-barge which sank in 1940 in shallow water close to the coast of Bradenton Beach due to adverse weather conditions;
- *San Pedro*: a Spanish galleon (Dutch-ship build) which, hit by a hurricane, sunk with the rest of Spanish Plate Fleet (other two galleons and eighteen merchant ships) in 1733, close to the Florida Keys. The current visible remains of the wreck (mainly cannonballs and cannons), acting as artificial reef, have favored the proliferation of numerous diverse marine species;
- *Half Moon*: a German steel schooner-yacht built in 1908 and used for marine races. The yacht was sized as prize of war by USA in 1914. In the early 1930s it sank off Key Biscayne;
- *SS Copenhagen*: a steamer constructed in the end of the 19th century. In 1900, during a voyage between Philadelphia and Havana, this steamship sank clashing with the Florida's reef;
- *Lofthus*: a merchant ship built in 1868 in Sunderland and sunken on the east coast of Florida on 4 February 1898. On September 1898 the hull of the ship was made explode with dynamites in order to salvage its cargo of lumber;

⁶⁴⁷ Check the official web-site (<http://www.museumsinthesea.com/>) for more historical (and biological) information about these sites.

- *Georges Valentine*: an iron-hulled screw steamer of the mid-19th century which sank on 1904 struck by a storm;
- *Urca De Lima*: a Dutch-built vessel of a Spanish convoy which, sailing from Cuba to Spain, sank in 1715 during a storm.

For the future there are plans for a possible extension of the Preserve involving other underwater cultural sites in the project. On 2011, for example, the wreck of the *USS Narcissus* has been nominated as potential 12th site of the Florida's Underwater Archaeological Preserve⁶⁴⁸.

The organizational and legal context

As already mentioned, the Florida's Underwater Archaeological Preserve is structured on a partnerships between the Florida's Department of State, Office of Cultural, Historical and Information Services (OCHIP), Division of Historical Resources, Bureau of Archaeological Research and the local communities. From one hand the underwater archaeologists mainly conduct the surveys and manage the interpretation and production of informative literature related to the selected sites; on the other hand the local communities, organized in affiliated groups (Friends of the Shipwreck), play an important role in the management of the Preserve, for example, monitoring the state of conservation of the sites and reporting to the competent authorities any eventual illegal activity. This contribution is a key aspect, supporting the sustainability of this system which is based on a completely free and open accessibility to the sites. Moreover *"especially where budgetary and personnel restrictions limit the amount of direct management that the administering agency can afford, community management of sites is an effective and desirable solution"*⁶⁴⁹.

Concerning the legal context, from an international view the USA has not ratified the 2001 UNESCO Convention while, on the contrary, the US courts have applied in several circumstances the salvage law and the law of finds in juridical cases related to the underwater cultural

⁶⁴⁸ See the document Florida Department of State, Division of Historical Resources, Bureau of Archaeological Research, *A Proposal to Establish the Shipwreck USS Narcissus as a State Underwater Archaeological Preserve*, December 2011.

⁶⁴⁹ Scott-Ireton D. A., *Preserves, Parks, and Trails: Strategies and Response in Maritime Cultural Resource Management*, Doctoral Thesis, Florida State University, Department of Anthropology, 2005, p. 104.

heritage (in Florida the historic salvage is lawfully permitted for historic shipwreck sites under arrest).

However two federal laws partially mitigate the applicability of the salvage law regime. First, the 1972 Marine Protection, Research, and Sanctuary (MPRSA) which confers to the National Oceanic and Atmospheric Administration (NOAA) the power to designate marine sanctuaries (in which the natural and historical resources are legally protected). In 1990, for example, the NOAA has established the Florid Keys National Marine Sanctuary, protecting both the local coral reef and ancient shipwrecks.

Second, the 1988 Abandoned Shipwreck Act (ASA) which, from one hand, confers automatically title on the abandoned shipwrecks to the states in which territories these wrecks are discovered and, on the other hands, it explicitly encourages the development of underwater archaeological parks for public benefit.

Moreover, according to Chapter 267 of the Florida Statutes (which regulates the use of the archaeological and historical public resources both on-land and underwater) the Florida Department of State Division of Historical Resources has the task to “*acquire, maintain, preserve, interpret, exhibit, and make available for study objects which have intrinsic historical or archaeological value relating to the history, government, or culture of the state*”⁶⁵⁰. Once the Division has designated an archaeological sites “*no person may conduct field investigation activities without first securing a permit from the division*”⁶⁵¹.

In short, the public has the right to freely access the sites of the Florida’s Underwater Archaeological Preserve but, according to the law, they cannot disturb them (the promoted policy is “*take only photos and leave only bubbles*”). Those people who, on the contrary, intend to carry on intrusive activities on these sites have to request Archaeological Research Permits or Exploration and Recovery Permits to the Division of Historical Resources.

⁶⁵⁰ United States, Florida Statutes, 2012, chapter 267.115.

⁶⁵¹ United States (2012), *last op. cit.*, chapter 267.11. Unfortunately, as underlined by Scott-Ireton, “*most diving visitors, and even many Florida divers, are unaware of the legal protection of shipwrecks*”. Scott-Ireton D. A., “Florida’s Underwater Archaeological Preserves: Preservation through Education”, in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006, p. 5.

Finally, all the Preserves are enrolled in the National Register of Historic Places.

Values and threats related to the shipwrecks of the Preserve

The shipwrecks that are part of the Florida's Underwater Archaeological Preserves are expressions of a multitude of values:

- Aesthetic value: in order to become part of the Preserve, the selected sites have, in general, to be well conserved, structurally identifiable and preferably surrounded by a diversified maritime ecosystem. Obviously each site offers a different kind of landscape, moving from the low visibility waters of the Suwannee river in which is preserved the *City of Hawkinsville*, to the pleasing, clear and biologically vibrant waters which surrounds the *San Pedro*. But the aesthetic value is a feature that characterize all the Florida's Underwater Archaeological Preserves.
- Archaeological value: the shipwrecks of the Preserve are important finds of different époques which may increase the knowledge about the Florida's maritime history.
- Economic value: currently these shipwrecks have mainly an indirect economic value, being sites appreciated and visited by a relevant number of scuba divers.
- Historical value: each site of the preserve has a story that may result appealing for the public.
- Research value: the sites present features that may results interesting for researches besides the archaeological ones like, for example, marine engineering analysis and biological studies focused on the impact of shipwrecks as artificial reefs.
- Spiritual value: some shipwrecks such as, for example, the *SS Tarpon*, *Georges Valentine* and *Regina*, act as monuments of human tragedies and/or marine disasters.
- Symbolic value: the bottom-up approach adopted for the selection of the Preserves and the educational programs organized by the Florida's Department of State have favored the appreciation of the initiative at local level. Moreover the involvement of the local population in the management of the Preserve have produced a diffuse sense of responsibility and pride toward this heritage.

In terms of threats, these sites were, before their organization as Preserves, all in a relatively good state of conservation (there were visible, but quite stable, signs of natural deterioration). Some of them carried marks of past events (like the effects, for example, of the experimental artillery on the *USS Massachusetts* or the dynamite used to recover lumber from the *Lofthus*) or attempts of modern salvage (such as in the cases, for example, of the shipwrecks *San Pedro* and *Urca De Lima*). However the main risks affecting these sites were, probably, their exposition to looting by souvenir-divers and damaging by fishing nets and anchors.

Analysis of the interests at stake

Preservation *in situ*

A preservation *in situ* approach characterizes the management of the Florida's Underwater Archaeological Preserves. The project, driven by an overall policy of enhancement of the local maritime heritage, aims to preserve the selected sites underwater but, at the same time, making them freely accessible to the sport divers. Unfortunately, due to modern salvage attempts, the original context of some of these sites (like, for example, the *SS Tarpon*, *San Pedro* and *Urca De Lima*) has been changed and, in most of the cases, the movable artifacts have been removed.

Scientific Research

The 11 sites of the Preserve are important finds of the Florida's maritime history. Underwater archaeologists have worked on the identification, mapping, recording and interpretation of all these sites. Coordinating on-field archaeological investigations and archival studies it has been possible to reconstruct the stories of these shipwrecks, from their construction till their sinking. The collected information have been summed up and organized in brochures which are freely distributed to the public by local diving centers⁶⁵².

As already stated, several of these wrecks have been intrusively affected by salvage operations before their management as Preserves.

⁶⁵² Alternatively they are downloadable at the web-site: <http://www.museumsinthesea.com/>.

In these cases the underwater archaeologists had to conduct analysis on altered sites. In any case the results of these studies have revealed some interesting archaeological information as well as appealing stories for the public. Analysis on the remains of the *City of Hawkinsville*, for example, have increased the knowledge about the technological-structure of the steamboats serving on the Suwannee River in the 19th century, while further investigations on the *Lofthus* may offer supplementary indications about late 19th century maritime commerce in Florida.

Conservation and Protection

In the Preserve the protection system is based on a cooperative scheme of promotion. The appreciation and understanding of the local population and of the touristic divers is strengthen through the interpretation of the sites and the development of educational programs. Being aware of the values and benefits of this heritage visitors can act responsibly, enjoying the experience *in situ* without threatening the integrity of the sites. So, on one hand the Division of Historical Resources puts some confidence in the visitors hoping that, once educated, they behave in an appropriate manner reducing, as far as possible, their negative impact on the protected sites; on the other hand, the Division tends to give responsibility to the local communities, directly engaging them in the protection and monitoring of the sites⁶⁵³.

As additional tool of protection the Division has installed mooring buoys in each Preserve: this device should, from one hand, safeguard the sites preventing eventual anchor damages and, on the other hand, guide the divers toward the shipwrecks. Till now no sign of direct damages to the Preserves has been reported. Nevertheless some marker buoys disappeared and, as consequence, the Division had to replace them.

Other underwater archaeological parks have adopted more strictly measures of protection⁶⁵⁴. In Croatia, for example, eight underwater sites of the Roman period have been secured through the installation of

⁶⁵³ But, once a year, each site is controlled by underwater archaeologists of the Department of Sates who register its state of conservation.

⁶⁵⁴ The measures implemented for the access control will be analyzed in the next section ('Access and Promotion').

protective cage. Positively, this device permits to balance the fruition of the site (the cages can be also opened by trained local guides permitting to the divers the enjoyment of the site without barriers) with its protection (the risk of human damages and looting are reduces, thus preserving the sites for future researches). Moreover, its twenty-years field tests have revealed some weak points (such as, for example, structure fragility or the accumulation of marine flora and organic deposits, etc.) that have been then progressively solved. As unfavorable side effect, the net structure, despite its utility as protective tool, represents in any case a physical obstruction to an idyllic view of the site⁶⁵⁵. In Italy, on the contrary, the sites of Cala Minnola (Levanzo) and Cala Gadir (Pantelleria) have been protected through an advanced joined system of underwater cameras and perimeter control tools⁶⁵⁶.

For the moment there has been no need to apply mayor measures of conservation for the Florida's Preserves. In general only limited actions have been undertaken to preserve specific artifacts in certain sites. For conserving the anchor of the *San Pedro* wreck, for example, "*a zinc bar as sacrificial anode, was adopted*"⁶⁵⁷.

Access and Promotion

Through the Florida's Underwater Archaeological Preserves sport divers have the opportunity to freely access to the 11 interpreted wrecks sites enrolled in the Preserve. Positively, the absolute absence of restrictions and barriers favor a mayor participation of divers. Negatively, the mechanism of control is weak and the sites are exposed to the risk of looting and damages by uneducated or distracted divers.

Different famous international underwater archaeological parks like, for example, the Victorian Underwater Shipwreck Discovery Trail (Australia) and the Kronprins Gustav Adolf (Finland), have adopted

⁶⁵⁵ However it seems that the cages have not negatively influenced the public's interest toward these site. According to the collected data a total of 1.378 diving experiences (not divers) on protected underwater archaeological cultural sites have been registered in 2010. Data source: Croatian Ministry of Culture, Directorate for the protection of cultural heritage.

⁶⁵⁶ Check the web-site www.seeundersea.it.

⁶⁵⁷ Davide B., "Methods and Strategies for the Conservation and Museum Display *in situ* of Underwater Cultural Heritage", *Archaeologia Maritima Mediterranea*, Vol. 1, Pisa-Roma, 2005, p. 147.

the same free accessibility policy of the Florida's Preserve. On the contrary other underwater archaeological parks have resorted to certain mechanisms of access control. In the Fathom Five Park Canada's National Marine Park the divers who want to access the shipwrecks located within the park have to make an annual registration and to fill in a visitation schedule. A similar policy is also adopted for visiting, for example, the HMS Dartmouth and the Duart Point site (previously called the Swan) located in the Sound of Mull (Scotland). From one hand, this mechanism increases the level of control of the visitors but, on the other hand, sites with restriction tend, in general, to be less popular than those freely accessible.

In the Underwater Archaeological Park of Baia (Italy) divers can access to different areas of the archaeological site only if they are joined up by official diving guides. This solution can significantly reduce the perils related to inappropriate behaviors. However, first of all, it seems mainly applicable for sites located in proximity of the coasts and, moreover, this approach might not always meet the favor of local divers.

In the last years various solutions have been occasionally proposed in order to increase the accessibility to or the quality of the experience offered by an underwater archaeological park.

In some circumstances, the use of replicas has considerably improved the visualization and public appreciation of a site. In the San Pedro Florida's Underwater Archaeological Preserve, for example, replica cement cannons have been added *in situ* to substitute the original ones which were removed in the past. The Roatan Underwater Museum (Honduras) is a more "extreme case" being an underwater park artificially created. Although exhibiting mainly replicas and few original pieces, it provides a sensational experience for snorkelers who have the opportunity to observe these artifacts in an impressive underwater context rich of several marine species and coral reefs. Therefore, replicas can be used for strengthening the public appreciation of a site, but they do not have to "mislead" the visitors. As affirmed by Scott-Ireton, "*credibility can be maintained only if visitors are told explicitly what is real and what is re-created*"⁶⁵⁸. This condition seems respected by both the mentioned experiences (their web-sites and laminated guides clearly indicate which are the displayed replicas).

⁶⁵⁸ Scott-Ireton D. A. (2005), *op. cit.*, p. 27.

Another opportunity for increasing the accessibility to an underwater archaeological park, is the organization of visits through glass-bottomed boats. Through these vehicles the general public can experience the underwater cultural heritage *in situ*. Both the Canada's Fathom Five Marine Park and the Underwater Archaeological Park of Baia have achieved good results organizing tour boat excursions. This resource is particularly useful to involve primary school children, fostering their first contact with the underwater cultural heritage.

Occasionally, decision makers have proceeded with the shifting of underwater cultural sites in more accessible contexts. In 2002, for example, due to renovation works at the shipping channel of San Juan Harbor of Puerto Rico, two ancient shipwrecks, the *Manuela* and *Cristóbal Colón*, were recorded and then re-located in more shallow waters, close to another Spanish-American War wreck, the *SS Antonio López*. This operation has favored the organization of an appealing historic diving site consisting of three different accessible wrecks. So, moving original shipwrecks to more accessible locations may substantially increment the potential number of visitors (especially if the new location is a place accessible by snorkelers too). Negatively, this solution exposes the wrecks to relevant risks, being them 'disturbed' and moved to an environmental context which is different from the original one (which, therefore, needs to be preventively surveyed). Thus, the relocation of sites is an interesting solution but, bearing in mind the consequences it implies, this method should be generally considered only in cases of necessity and urgency, where the sole available alternative is the excavation and recovery of the artifacts.

In general, as suggested by Herreman, "*The new challenge is to balance the desired development that tourism brings and the protection of local heritage; to contribute to attract foreign visitors and simultaneously make them aware of the value of preserving local heritage; to promote a sense of proud ownership in local communities and make them aware of their responsibility of preserving their heritage through correct management and conservation programs*"⁶⁵⁹. In other terms, the final goal is to create a sustainable management, in which the encouraged fruition of this heritage may proceed without harming the existence of these non-renewable resources. In the Florida's Preserve this goal has been

⁶⁵⁹ Herreman Y. (2006), *op. cit.*, p. 423.

mainly accomplished through the organization of an articulated plan of promotion based on interpretative materials and educational programs.

First of all, the Division has produced, for each Preserve, informative materials that may result appealing and useful for the general public (printed brochures and posters) and sport divers (laminated guides). The brochures mainly describes the history of the related shipwreck, its relation with the local context and the current condition of the site. On the contrary the waterproof site guides offer:

- recommendations about how to behave within the Preserve;
- information about the environmental conditions of the sites;
- a short description about the history of the sites;
- a detailed map of what is currently visible *in situ*;
- a list of the main marine species that visitors could meet;
- some suggestions for enjoying the experience.

In some cases, the non-divers can access to shore-based exhibitions located close to the site. Alternatively, they have the opportunity to virtually explore the Preserves through the official web-site which is easily navigable and rich in information and multimedia contents ⁶⁶⁰. For each Preserve it offers an overall underwater tour, providing detailed images and high quality videos about its history, environmental context and main visible components.

In addition, in each Preserve the Division has placed spar buoys and underwater bronze plaque to mark the sites. Interestingly, there is not a shared view about the installation of plaques and signs within underwater archaeological parks. Therefore, while in some underwater archaeological parks such as, for example, the *Océan Trail* in Portugal, informative stainless steel plates have been placed close to the most impressive artifacts⁶⁶¹, in others, like the Victorian Underwater Shipwreck Discovery Trails, the competent authorities have preferred to avoid the installations of underwater signs in order to do not alter the natural context of these sites⁶⁶².

⁶⁶⁰ The official web-site of the Florida's Underwater Archaeological Preserves is: <http://www.museumsinthesea.com/>.

⁶⁶¹ Alves F. J. S. (2009), *op. cit.*, p. 85.

⁶⁶² On the underwater archaeological parks in Australia see Philippou C. and Staniforth M., "Maritime Heritage Trails in Australia: An Overview and Critique of the Interpretive Programs", in Spirek J. D. and Scott-Ireton D. A. (Edited by), *Submerged Cultural Resource Management: Preserving and Interpreting Our Sunken Maritime Heritage*, Kluwer Academic/Plenum Publishers, 2003.

The promotion of the Preserve is, furthermore, sustained by periodic publications in popular diving magazines, such as Scuba News and Rodale's Scuba Diving, and other formats like, for example, the Atlas of Maritime Florida⁶⁶³.

Finally, important resources are invested in the organization of educational programs. The Florida Public Archaeology Network⁶⁶⁴, for example, has successfully organized a program called Submerged Sites Education and Archaeological Stewardship (SSEA). Through this project local sport divers learn the basis of the archaeological methodology and ethics. Moreover they are practically trained to recognize and monitor the underwater cultural heritage adopting non-intrusive techniques of survey (such as photography and hand-drawing). Once completed the course, these divers are invited to actively participate in the management of the Florida's cultural heritage, from one hand monitoring the Florida Underwater Archaeological Preserves and, on the other hand, investigating the NOAA's Automated Wreck and Obstruction Information System (AWOIS) sites with the aim to identify other underwater cultural sites.

Socio-economic impact

From a social perspective the Preserve produces both tangible and intangible benefits. Concerning the tangible ones, the Preserve creates job opportunities in the Tourism Sector and it provides a favorable context for the development of archaeological centers. As intangible benefits, the direct involvement of the local population in the management of the sites may increase the sense of identity and responsibility toward this heritage.

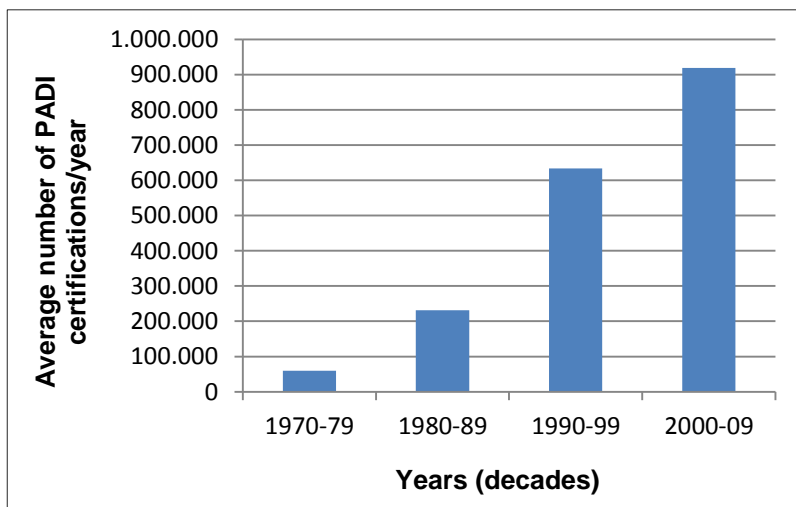
Evaluating the economic impact of a freely accessible underwater archaeological park like the Florida's Preserve is a challenge because its free access policy makes problematic the recording of the number of divers who, each year, visit these sites.

⁶⁶³ Smith R. C., Miller J. J., Kelley S. M. and Harbin L. G., *Atlas of Maritime Florida*, Florida, 1997.

⁶⁶⁴ The Florida Public Archaeology Network is a net of public archaeology centers organized since 2004 with the aim to spread the education and to promote the preservation of the Florida's archaeological sites. For more information, check the web-site: <http://www.flpublicarchaeology.org/>.

However, the local economic impact of an underwater archaeological park, although hardly quantifiable, can be significant. First of all because, as remarked by Scott-Ireton *“by combining heritage, ecological, and educational tourism, shipwreck parks and underwater archaeological preserves fill a tourism niche that no other attraction can match”*⁶⁶⁵.

Second, because apparently the overall worldwide number of divers is growing year by year⁶⁶⁶. The statistics about the Professional Association of Diving Instructors’ (PADI) certifications history seem to testify this trend⁶⁶⁷. Cumulatively 20.313.807 PADI certifications have been conferred from 1967 to 2011⁶⁶⁸. The graphic below shows how the average number of PADI certifications/year has grown over time.



26. Chart on the average number of PADI certifications/year

⁶⁶⁵ Scott-Ireton D. A. (2005), *op. cit.*, p. 29.

⁶⁶⁶ It is hard to evaluate the number of active divers in the world. First, because there are several diving training organizations in the world, but only few of them possess updated statistics (which, in addition, report the number of certifications conferred and not the number of divers); second, because it is impossible to know the number of people who, after getting a diving license, have successively stopped to practice this sport.

⁶⁶⁷ The Professional Association of Diving Instructors (PADI) is probably, with the Confédération Mondiale des Activités Subaquatiques (CMAS), the main diving training organization in the world.

⁶⁶⁸ Data source: Professional Association of Diving Instructors (PADI), *World Corporate Statistics 2011*, February 2012. Notice that this number does not represent the total number of PADI licensed divers in the world, because some divers may actually have more than one PADI certification.

Unfortunately, primarily due to the free accessibility policy, there are not precise data about the number of people who visit the Florida's Preserve each year. According to a document of the Florida's Bureau of Archaeological Research "*in total, the preserves are visited at least 424 times a year by dive charters. If one conservatively assumes four divers per trip at \$50.00 per diver, then each preserve on average generate substantial gross revenues for Florida business*"⁶⁶⁹. In view of that, it seems (if this data is correctly interpreted) that at least 1.700 divers per year access to the Preserves, generating \$85.000 solely in dive charter fees. However, this estimation unlikely represents the real situation because, for example, it does not take into account those divers who access the sites through their own boats and the snorkelers who can visit some Preserves such as the *San Pedro* and the *Half Moon*.

As a result, although being aware of the significant touristic appealing and beneficial socio-economic impact played by the Preserve, it is very hard to elaborate comparative analysis with other parks or to accurately evaluate its effective public utility⁶⁷⁰. This is one of the main limit of those underwater archaeological parks in which the sites are freely accessible by sport divers.

The costs related to the organization of an underwater archaeological park may be divided in two categories. From one hand there are the costs related to those operations that, most likely, the organization of an underwater archaeological park requires. They are, for example, the recording of a site and its interpretation, promotion and monitoring. On the other hand there are expenses related to eventual or additional operations such as, for example, the excavation of the site, the adoption of eventual measures of conservation or protection, and the organization of further mechanism of access and promotion (glass-bottomed boats, virtual reconstruction, ROV streaming videos, etc.).

As already stated, involving the local population may reduce the overall costs of management. Concerning the Florida's Underwater Archaeological Preserves there are no official data about the total costs

⁶⁶⁹ Florida Department of State, Division of Historical Resources, Bureau of Archaeological Research, *A Proposal to Establish the Shipwreck USS Narcissus as a State Underwater Archaeological Preserve*, December 2011, p. 18.

⁶⁷⁰ Several questions remain unsolved. For example, the majority of the divers accessing the Florida's Preserve are locals or tourists? Opening the site to the snorkelers significantly increase the number of visitors?

of its management. But Scott-Ireton reports some information (related to the year 2005) about the costs of the printed materials⁶⁷¹:

- \$950 for the graphic design and \$1.500 to print 8.000 brochures;
- \$425 for the design and \$500 to create 200 waterproof guides;
- \$1.625 for the graphic design and \$2.490 to print the posters.

The brochures and the posters are distributed to the visitors free of charge. This is a well-established mechanism to develop the promotion of the site, but obviously it involves significant costs.

On the whole in 2011 87,3 millions of people visited Florida producing an economic impact of around \$67 billion⁶⁷². Unfortunately it is not possible to determine which is the overall contribution of the Florida's Underwater Archaeological Preserves on these results.

3.3 Benefits and limits of the underwater archaeological parks

An underwater archaeological park is one of the method of management that best meets the goals expressed by the 2001 UNESCO Convention: it considers the preservation *in situ* as first option, balancing the need to conserve this heritage for the future generations and the will to spread the knowledge and the enjoyment of this heritage making the underwater cultural sites accessible to the public. The success and appealing of this method is linked to its capacity of proposing an experience that is, at the same time, educational and recreational. Nevertheless, the organization of underwater archaeological parks is more indicated for the enhancement of a site rather than for its protection and conservation.

Table 27 shortly describes the main pros and cons of this method of management.

⁶⁷¹ See Scott-Ireton D. A. (2005), *last op. cit.*, p. 107.

⁶⁷²These statistical data are published in the web-site: <http://media.visitflorida.org/research.php>.

UNDERWATER ARCHAEOLOGICAL PARKS		
INTERESTS	POSITIVE ASPECTS	NEGATIVE ASPECTS
Scientific research	The creation of an underwater archeological park is subordinated to the scientific research;	Some analysis could be hardly enforced <i>in situ</i> ;
Conservation	After years underwater, the equilibrium reached between a cultural site and its setting slows down the deterioration processes; Measure of stabilization <i>in situ</i> could be adopted;	Not all sites are stable enough for being managed in this way; Some techniques of stabilization <i>in situ</i> may adversely affect the enjoyment of the site;
Protection	A controlled access may reduce the 'human risks'; Directly involving the local population may strength the site's protection; In case, further tools of protection can be added;	In free accessible parks the divers' behavior can be hardly controlled; Without an efficient and effective legal system the protection <i>in situ</i> is risky;
Preservation <i>in situ</i>	Ensures the preservation of the site in its underwater context;	Moving an entire site in a new context can be still viewed as a preservation <i>in situ</i> approach?;
Access	Open to sport divers; At times, snorkeling trails or visit through glass-bottomed boats are organized too; Possibility to develop an indirect and/or virtual access to these sites;	Rarely non-divers can directly access these sites; Further studies on how to make this experience more pleasant and instructive are required; Risk to excessively expose these sites;
Promotion	Several tools of promotion are available; Educational initiatives may be also organized;	With few exceptions, often the communication process does not reach the non-divers;
Socio-economic impact	Favorable economic impact at local level; Spread of social benefits; Costs are considerably lower than the exhibition in museum "on-land";	Hard to evaluate the real socio-economic impact; The attendance is not comparable with that achieved by the main maritime museums;

27. Table summarizing benefits and limits of the underwater archaeological parks

In general, the organization of underwater archaeological park is an appealing method of management because it can easily produce positive outputs for what concern the scientific research, preservation

in situ and divers accessibility. In those cases in which adequate resources have been invested, good results have been also achieved in the promotion of the underwater cultural heritage, producing socio-economic benefits for the local communities.

However, this method of management, like the others already analyzed, have also some major challenges to face.

The first challenging aspect is to define in which occasions an underwater archaeological park should be organized. Despite its related wide benefits, the implementation of this method of management is not always appropriate and neither desirable. Suitable criteria for the identification of potentially successful underwater archaeological parks are:

- ease of access: sites near the shore (possibly available for snorkelers too) and located closed to developed areas may facilitate the accessibility;
- eye-catching biological context: sites surrounded by a rich and diverse maritime ecosystem may encounter the favor of a wider number of divers, providing an experience aesthetically appreciable from different point of views;
- favorable environmental conditions: clear, shallow and warm waters probably provides the best conditions for a diving experience (but the underwater archaeological parks of Finland and Canada, for example, show that popular parks can be also organized for sites located in areas with more adverse environmental conditions);
- intellectually appealing: underwater archaeological parks should be preferably organized for identified and interpreted sites which, in addition, present tempting stories for the public;
- legally sustainable: as good practice, the organization of an underwater archaeological park should be planned once solved the ownership and jurisdictional issues of the related sites;
- characterized by a satisfactory level of preservation: an underwater cultural site, in order to be aesthetically appreciable by sport divers, should be visible (uncovered) and structurally identifiable. Moreover it should present a suitable level of conservation so that it may be capable of sustaining a potential growing number of visitors.

On the contrary, the organization of underwater archaeological parks seems less suitable for those sites that:

- are excessively fragile or cannot be left exposed for conservative reasons;
- are hardly aesthetically appreciable by visitors (because, for example, they are totally covered or excessively damaged);
- are highly relevant for historical and archaeological investigations, but they present low appealing for the public;
- are still legally contended;
- are unsafe for divers.

A second challenge concerns the control of the visitors' behavior in the free accessible underwater archaeological parks. Keeping this scheme of access is an ethical dilemma because it inevitably implies the acceptance of a certain level of risk for the protection of the enrolled sites. However, at least for the moment, in the Florida's Underwater Archaeological Preserves have not been registered significant acts of looting (with the exception of buoys) or damaging, despite its free accessibility policy. Moreover the potential adverse impact due to the divers access may be reduced recurring to a series of measures such as: the adoption and enforcement of advanced laws aimed to protect the cultural heritage, the education of the public about the values and the benefits which may be achieved through a proper management of the underwater archaeological sites, the direct involvement of the local population in the management of the park, the use of modern technologies and consolidated methods of protection (like, for example, underwater cameras, anti-intruder sonar systems' devices, cages, etc.).

In this scenario, the periodical monitoring of the underwater archaeological parks becomes a key element for evaluating and planning their access sustainability in the long period. In extreme circumstances the accessibility scheme may also be restricted (due, for example, to an over-exposition of the site). However changing the management of a site is a radical and, usually, unpopular choice that may cause serious consequences (in this case it may generates hostility in the sport divers and the local population if it is not adopted for convincing reasons). Thus, it comes out again, firstly, the importance to select suitable sites which may sustain a growing number of visitors and, secondly, that not all the underwater cultural sites can be managed embracing an underwater archaeological park approach.

An additional challenge is related to the non-divers accessibility. Truly the number of divers is growing year by year, but it still represents a small percentage of the world population. Therefore the involvement of the non-divers is a further priority, first of all, justifying the costs of implementation and management of an underwater archaeological park and, moreover, increasing the potential group of stakeholders. Moving from coastal to deep water sites different tools may be used to favor the non-divers accessibility. Sites close to the coast and located in shallow and clear waters, for example, may be made directly accessible both for divers and snorkelers. Bottomed-glass boats have registered a good degree of success providing to the non-divers a direct access to the underwater cultural heritage situated in relatively deep zone which are not excessively far from the coast. ROVs' real time videos and virtual 3D reconstructions, as tools of indirect access, may be considered as alternative solutions for the visualization of deep sites. On the whole the implementation of these tools may significantly increase the success of an underwater archaeological park. In addition new tools of visualization, both physical and virtual, should be developed and implemented to favor the direct/indirect access to the underwater cultural heritage (like, for example, interactive mobile applications or augmented realities).

Finally, the case study analyzed shows how is problematic the quantification of the socio-economic impact of a freely accessible underwater archaeological park. From one hand reducing the mechanisms of control may meet the favor of the divers who has to face almost no barriers for enjoying these sites. On the other hand the lack of basic data such as, for example, the visitor attendance, may represent an obstacle to the long-term planned management of the structure and it may reduce the opportunity to get further public resources invested in the park. Therefore, a good practice could be to keep the contact with the local diving centers in order to get, at least, an acceptable estimation of the number of visitors.

To conclude, Scott-Ireton identifies three elements of success for the underwater archaeological parks: *"community involvement, effective interpretation, and active management"*⁶⁷³. The Florida's case shows that when a local community is kept informed and immediately involve in the creation of an underwater cultural park than such community

⁶⁷³ Scott-Ireton D. A. (2005), *last op. cit.*, pp. 99-105.

usually becomes a valuable and cooperative ally in the successive phases of management and development of the park. Through public educational programs is it possible, for example, to teach to local divers the basic principles of underwater archaeology in order to directly engage them in the protection and monitoring of the sites. On the contrary decisions adopted without consulting the local community can produce hostility and, as a result, risks to the underwater cultural heritage. This obviously does not mean that any negative opinions of the local population must necessarily stop the creation of an underwater archaeological park. But, on one hand, it is important to explain the values related to the underwater cultural heritage and the benefits that may be locally generated through the organization of an underwater archaeological park. On the other hand, the desires and needs of the local population must be taken into considerations in the planning and execution phases of the project.

Without an effective and authentic interpretation is hard involve the local population and to convince sports divers to respect the underwater cultural heritage. As stated by Mesić *"it is easy to demonstrate the importance of a particular site to colleagues during a conference, to do before representatives of the fishing industry, divers, companies and Government institutions is another thing completely"*⁶⁷⁴. Therefore promotion plays a key role in the sustainability of a successful underwater archaeological park, explaining, through the use of different tools, the importance and appealing of the preserved cultural resources. In turn, this process favors the development of an active management in which the archaeologists directly cooperates with the other organizations in the promotion, protection and monitoring of the underwater archaeological park.

Probably a fourth element should be added to achieve a total success: the ability to involve the non-divers too. The underwater cultural heritage should be a resource enjoyable, albeit in a different way, by the entire population. Thus, the need to use and improve existing tools (replicas, glass-bottomed boats, eventually the re-location of the cultural artifacts, etc.) as well as the advisability to develop new ones (Remotely Operated Vehicles' live videos, 3D virtual-immersive reconstructions, touristic submarines, etc.).

⁶⁷⁴ Mesić J., "A Resource for Sustainable Development: the case of Croatia", *Museum International*, Vol. 60, Issue 4, February 2009, p. 92.

4. Restricted access sites

4.1 Introduction

Public access is one of the main interest on which is based the underwater cultural heritage management. However in some circumstances (that should be limited as far as possible) securing the fulfillment of this interest could be a secondary aim, prevailing the need to protect and conserve the underwater cultural heritage. In different states (US, Sweden, UK, Australia, etc.) these cases have, at times, been faced organizing restricted access sites.

A restricted access site is a method of management that, due to a series of diverse reasons, prohibits or strictly control the accessibility to an underwater cultural site. Actually the level of restrictions significantly varies case by case, making sometimes really subtle the border between restricted access sites and controlled underwater archaeological parks. However, differently from the underwater archaeological parks, the restricted access sites are not, in general, planned and organized to be opened to the public (at least in the moment in which they are instituted).

Usually restricted access sites are organized when:

- the access to these sites is risky for the health of the divers or for the safety of the natural environment (like, for example, military wrecks containing explosive materials)⁶⁷⁵;
- the sites have an outstanding historical and/or archaeological value and, therefore, the goal is to preserve them for future scientific researches⁶⁷⁶;
- the sites are highly fragile or significantly endangered by human threats⁶⁷⁷.

⁶⁷⁵ In 1997, for example, the UK Secretary of State for Transport designed the area surrounding the wreck *SS Castilian* as a prohibited area considering its potential danger to life or property. See The Protection of Wrecks (*SS Castilian*) Order 1997 at <http://www.legislation.gov.uk/ukxi/1997/1976/made>, last access 06/04/2013.

⁶⁷⁶ The Heritage Council of Victoria (Australia), for example, has established a protected zone around the shipwreck *Alert* considering its highly archaeological and historical significance. See Heritage Council of Victoria (2010), *op. cit.*, p. 4.

⁶⁷⁷ The *HMS Fowey*, for example, is a UK wreck located in the Florida's waters. The US government has restricted the access to this site considering the recurring problem of looting. On this issue see: Scott-Ireton D. A., "Shared Heritage: British Shipwrecks in Florida", in S. Gallagher (edited by), *Shared Heritage: Joint Responsibilities in the*

From time to time this method has been also implemented for preserving sites containing human remains from unnecessarily and undesired activities of disturbance, thus conferring to these natural graveyards the status of maritime sanctuaries.

The system of the Protected Wreck Sites in the United Kingdom will be here analyzed as case study. Considering the UK long-history as maritime power and the consequential richness of underwater cultural sites in its territorial waters, it may be interesting to evaluate why and how this state has organized a system of restricted access sites to protect its most sensitive and significant ancient wrecks.

4.2 The Protected Wreck Sites in UK

Brief history of the Protected Wreck Sites in UK

The system of restricted access sites in UK is legally organized according to the 1973 Protection of Wrecks Act. This Act is principally aimed to protect from “*interference by unauthorized persons*” those vessels, sunken in the UK territorial waters, which have a remarkable historical, archaeological or artistic significance⁶⁷⁸. In other words it is mainly intended to secure the selected underwater cultural sites (in the Act limited to shipwrecks) from undesirable human activities such as, for instance, damaging and looting.

In order to protect these wrecks the competent authorities may “*designate an area around the site[s] as a restricted area*”⁶⁷⁹. The access to and the practice of any activity in the restricted areas is regulated by a system of licenses granted by English Heritage on behalf of the Secretary of State for Culture, Media and Sport.

Unless authorized by the relative competent authorities, in the restricted sites is forbidden to:

- tamper with, damage or remove any part of a wreck or of its cargo (or);
- carry out diving or salvage operation directed to the exploration of any wreck or to removing objects, or use

Management of British Warship Wrecks overseas, seminar collected papers, 8th July 2008, at the University of Wolverhampton, English Heritage, Swindon, 2009.

⁶⁷⁸ UK, Protection of Wrecks Act, Chapter 3, 1973, preamble.

⁶⁷⁹ UK (1973), *last op. cit.*, art. 1, par. 1 (b).

- equipment constructed or adapted for any purpose of diving or salvage operations (or);
- deposit anything which may obliterate, damage or obstruct the access to a site⁶⁸⁰.

Those who commit an infraction “*shall be liable on summary conviction to a fine of not more than £400, or on conviction on indictment to a fine; and proceedings for such an offence may be taken, and the offence may for all incidental purposes be treated as having been committed, at any place in the United Kingdom where he is for the time being*”⁶⁸¹. It is finally important to underline that “*Licensee for a Protected Wreck Site does not confer ownership or salvage rights*”⁶⁸².

Currently, in UK, 61 wrecks of various époques (from the Middle Bronze Age to the XXth century) and origins (British, Dutch, Spanish, French and Portuguese) are designated as Protected Wreck Sites.

The organizational and legal context

From an organizational point of view, the sites designated under the 1973 Protection of Wreck Act are administered by English Heritage and the Advisory Committee on Historic Wreck Sites (ACHWS). These groups act on the behalf of the Department for Culture, Media and Sport. In short, English Heritage primarily regulates the access to these sites through a licensing system, while the ACHWS mainly makes recommendations to the Department for Culture, Media and Sport about the suitability of a site to be enrolled in the list of the Protected Wrecks⁶⁸³. Both English Heritage and ACHWS are assisted in their decisions by a group of Archaeological Contractors.

In addition, a key role in the overall development of the Protection of Wreck system in UK has been played by the Joint Nautical Archaeology Policy Committee (JNAPC). This organism, which enrolls

⁶⁸⁰ See UK (1973), *last op. cit.*, art. 1, par. 3.

⁶⁸¹ See UK (1973), *last op. cit.*, art. 3, par. 4.

⁶⁸² English Heritage, *Accessing England's Protected Wreck Sites. Guidance Notes for Divers and Archaeologists*, English Heritage Publications, 2010, p. 6.

⁶⁸³ The designation of the sites is assessed according to parameters such as period, rarity, documentation, group value, survival/condition, fragility/vulnerability, diversity and potential. To learn more about this see, for example, the document English Heritage, *Protected Wreck Sites. Moving toward a new way of managing England's historic environment*, English Heritage Publications, 2010b.

some of the main cultural interest groups in UK like, for example, the Nautical Archeology Society (NAS), the Council of British Archaeology and the Institute of Field Archaeology, provides a valuable forum of discussion for issue related to the underwater cultural heritage. As stated by Dromgoole “since this forum has been in existence [1988], the administration of the relevant legislation has improved enormously”⁶⁸⁴.

From an international legal perspective the United Kingdom has ratified the 1982 UNCLOS and the 1989 Salvage Law Convention recurring to the reservation of article 30, par. 1 (d)⁶⁸⁵. On the contrary UK has not ratified the 2001 UNESCO Convention, but it has adopted its Annex as “best practice for archaeology”⁶⁸⁶.

At national level, other than the 1973 Protection of Wrecks Act, other three laws significantly contribute to the regulation of the underwater cultural heritage: the 1986 Protection of Military Remains Act, the 1995 Merchant Shipping Act and the 2002 National Heritage Act. The first law establishes a system to protect the wrecked military aircraft and the designated military sunken vessels from unauthorized activities⁶⁸⁷. The second law is particularly relevant because it regulates the reporting of recovered underwater properties in the UK territorial waters. This Act specifically imposes that any wreck material discovered in the UK territorial waters must be reported to the Maritime and Coastguard Agency’s Receiver of Wreck⁶⁸⁸. Moreover if this material has not an identifiable owner, the Crown automatically becomes its legal owner⁶⁸⁹. The third law, first of all, extends the definition of “ancient monuments” in order to include in this category also those monuments that are located in, on or under the seabed⁶⁹⁰. In addition this Act allows the Secretary of State for Culture, Media and Sport to transfer

⁶⁸⁴ Dromgoole S., “The UNESCO Convention on the Protection of the Underwater Cultural Heritage 2001: A particular common law perspective”, in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneo*, Vol. 4, Massa Editore, Sep. 2004, p. 44.

⁶⁸⁵ Despite this reservation, activities of salvage on ancient wrecks successively enrolled in the Protected Wreck Sites have been occasionally authorized in the UK’s territorial waters. For example, salvage operations have been conducted between 1984-1986 on the *Admiral Gardner* site (<http://www.english-heritage.org.uk/discover/maritime/map/admiral-gardner/>).

⁶⁸⁶ See English Heritage (2010), *op. cit.*, p. 4.

⁶⁸⁷ See UK, Protection of Military Remains Act, Chapter 35, 1986.

⁶⁸⁸ UK, Merchant Shipping Act, 1995, art. 236.

⁶⁸⁹ UK (1995), *last op. cit.*, art. 241.

⁶⁹⁰ See UK, Amendments National Heritage Act, 2002.

responsibilities and administrative functions to English Heritage which, as a result, can directly finance archaeological activities on the designated shipwrecks.

Values and threats

The significance of the designated sites is expressed by their related values:

- Aesthetic value: depending on the degree of exposition of the site and on the features of the natural surrounding environment, some of the Protected Wreck Sites like, for example, the *HMS Colossus* offer an enjoyable view to the authorized divers⁶⁹¹.
- Archaeological value: most of the sites have been designated as Protected Wreck Sites specifically due to their outstanding archaeological value like, for example, the well preserved 18th century English collier brig sunken at Seaton Carew⁶⁹². As explained by Delgado: *"the importance of ancient wrecks lies not only in what they tell about the history of ships. Of greater interest to all archaeologists is the fact that they also provide unique information on early technology, art, metrology, medicine, religion, literacy, economics, and other facets of daily life. This is because artefacts of all types are usually found on shipwrecks in better conditions, in greater quantity, and in better dated contexts than similar artefacts excavated outside unplundered tombs on land"*⁶⁹³.
- Historical value: some sites are specifically protected due to both their historical and archaeological value. Among them there is the *Amsterdam* which story results particularly interesting despite the "short-life" of this vessel. Built in 1748, the *Amsterdam* had to sail from the Netherlands to Java (Indonesia) on 8 January 1749, but after only 18 days of navigation the crew mutinied and the ship stranded on a beach near Hastings⁶⁹⁴. As sustained by Delgado *"a VOC-(Ship)wreck*

⁶⁹¹ For more information about the *HMS Colossus* check the web-site: <http://www.english-heritage.org.uk/discover/maritime/map/hms-colossus/>.

⁶⁹² See the page: <http://www.english-heritage.org.uk/discover/maritime/map/seaton-carew/>.

⁶⁹³ Delgado J. P. (Edited by, 1997), *op. cit.*, p. 28.

⁶⁹⁴ More information about the story of the *Amsterdam* are available at the following web-site: <http://www.english-heritage.org.uk/discover/maritime/map/amsterdam/>.

represents a condensed configuration of the technological, socio-economic, and cultural features of the company. Since archaeological data deal with 'real life' and practical aspects of the production and trade of the VOC, they offer unique possibilities for a more detailed understanding of the functioning of the enterprise as whole"⁶⁹⁵.

- Research value: several designated wrecks result important discoveries for naval engineering studies. In the case of the *Hazardous*, for example, "details of her construction recorded archaeologically showed that despite her rebuilt [for the British Royal Navy], the 'Hazardous' retained distinctively French characteristics"⁶⁹⁶.

Principally the system of the Protected Wreck Sites is organized in order to protect the designated shipwrecks from uncontrolled and undesirable direct human activities like, for example, destruction, damaging and looting. However, in certain cases, measures of conservation have been also implemented *in situ* in order to protect the sites from environmental threats. Remarkably English Heritage has published a comprehensive guide for the assessment of the risks on underwater cultural sites⁶⁹⁷.

Analysis of the interests at stake

Preservation *in situ*

In general, a preservation *in situ* approach governs the management of the Protected Wreck Sites. As explicitly stated by English Heritage "*a site destroyed by excavation is irreplaceable. There are a finite number of historic wrecks in the sea and if every discovered site were also excavated, then this cultural heritage would be diminished for future generations. It is therefore important to consider whether excavation is necessary, or whether investigation should wait for some time in the future when, inevitably, new techniques might enable fuller investigation without disturbing the site. Most buried sites will last almost indefinitely if left undisturbed*"⁶⁹⁸. Accordingly the sites, which are protected and conserved *in situ*, are mainly studied adopting non-intrusive techniques of investigation. However, in some

⁶⁹⁵ Delgado J. P. (1997), *op. cit.*, p. 27.

⁶⁹⁶ For more information see the web-site: <http://www.english-heritage.org.uk/discover/maritime/map/hazardous/>.

⁶⁹⁷ See chapter 1, paragraph 3.

⁶⁹⁸ English Heritage (2010), *op. cit.*, p. 11.

circumstances like, for example, in the *Bartholomew Ledges* (an unidentified armed vessel of the 16th century transporting lead ingots and bronze bell fragments), certain exposed artifacts have been archaeologically recovered due to their excessively vulnerability in the underwater environment⁶⁹⁹.

Scientific Research

It is possible to distinguish two different phases of research on these selected wrecks: from their discoveries to their enrollment in the Protected Wreck Sites; and after their designation as restricted access sites.

In the first phase, the analysis have been generally focused on the identification (whether possible) of these wrecks and, in the best cases, on the recording of pre-disturbance plans of these sites. Sometimes these operations have been supplemented by partial archaeological excavations or, in other (less fortunate) cases, by salvage operations.

In the second phase the scientific researches conducted *in situ* have been mainly aimed to precisely survey, record and monitor the conditions of these sites, recurring, most of the time, to non-intrusive techniques of investigation. From one side, these activities have safeguarded the historical and archeological value of the Protected Wreck Sites for possibly future advanced investigations. On the other side, they have strengthen our knowledge about a variety of research issues like, for example, shipbuilding traditional methods, living conditions on board and environmental dynamics on post-wrecked sites⁷⁰⁰. Occasionally, individual artifacts have been raised when they risked to be lost (looted or damaged) if kept *in situ*. A report with the

⁶⁹⁹ More info about the *Bartholomew Ledges* case are available at the web-site: <http://www.english-heritage.org.uk/discover/maritime/map/bartholomew-ledges/>.

⁷⁰⁰ However McElvogue, evaluating potential improvements of the Protected Wreck Sites system, suggests that in this phase "*more interpretation of the archaeology is required*". See McElvogue D., "Informing Marine Designation: The IFA Perspective", *Institute of Field Archaeologists Maritime Affairs Group (IFA-MAG) Bulletin*, special edition: report on the MAG Seminar 'Informing Marine Designation: Sourcing Field Evaluation of Marine Historic Asset Expertise' (London, 8 February 2007), March 2007, p. 11.

results of the conducted activities is ordinarily delivered to English Heritage⁷⁰¹.

Protection and Conservation

Protection is primarily based on a system of licenses aimed to control the access and the activities realized *in situ*. As overall there are 4 different licenses (Visitor, Survey, Surface Recovery and Excavation License). All of them require to the applicants to address standard conditions (such as, for example, the reasons for undertaking the project, the planned timetable, the safety policy that will be adopted, etc.) as well as other specific issues that become more demanding moving from the Visitor to the Excavation License⁷⁰². In whatever circumstance all the licensees have to act in conformity to professional archaeological standards.

The observed results testify that, overall, the Protected Wreck Sites' system of licenses offer a worthy protection although, in a restricted number of cases, traces of unauthorized activities have been registered. The site of the *Admiral Gardner*, for example, results mostly undisturbed even if there are still some evidences of the (authorized) salvage operations conducted in the mid-1980s and more recent signs of (unauthorized) anchoring.

Whether the conditions of stability of certain sites resulted to be at risk, measures of conservation *in situ* have been adopted. Part of the *Hazardous* and the Yarmouth Roads wreck, for example, were sandbagged for conservative reasons.

According to the 2009 annual report, thanks to the measures adopted, “since 2008 there has been an 18% percentage decrease in the number of sites at high risk and a 22% decrease in the sites at medium risk”⁷⁰³. Despite these virtuous results, the 1973 Protection of Wrecks Act, on which is based the system of protection, is not exempt from critics. Roberts and Trow underline how this Act is nowadays “outdated and limited in its usefulness” considering, for example, its limited scope (only wreck sites)

⁷⁰¹ The summaries of some of these documents (like, for example, about the *Admiral Gardner* or the Dunwich Bank wreck) are publically available on the English Heritage official web-site: <http://www.english-heritage.org.uk/>.

⁷⁰² For more info about the licenses see English Heritage (2010), *op. cit.*, pp. 8-9.

⁷⁰³ Advisory Committee on Historic Wreck Sites, *Annual Report 2009, 2010*, p. 44.

and its poor attention on the factor of risk represented by the human activities accidentally affecting the underwater cultural heritage⁷⁰⁴. Nevertheless, these same authors (correctly) recognize the important contribution offered, to date, by this Act in the overall protection of the selected ancient wreck sites.

Access and Promotion

The access to the designated sites is strictly regulated, but it is not totally prohibited: “archaeology should be accessible to all and, mindful of the rights of individuals to engage with our shared heritage, anyone may apply to access a Protected Wreck Site”⁷⁰⁵. Through a Visitor License the licensee may request not only the authorization for individual visit, but also the right to organize non-intrusive guided public visits *in situ*⁷⁰⁶. This solution has been occasionally adopted like, for example, in the *Coronation*, *Hazardous* and *HMS Colossus* wrecks where dive trails have been organized⁷⁰⁷. Even if these three wrecks mainly represent exceptions, it is highly appreciable this policy aimed to make possible the organization of (controlled) dive trails as soon as the wreck sites present acceptable conditions of stability. This seems a brilliant approach to meet the expectations of the local divers. A similar solution has been adopted in Australia for the management, for example, of the *Lady Darling* wreck. The organization of a dive trail around this wreck site has produced excellent results both in terms of protection (there have been no reports or evidence of artifacts removal) and accessibility (in 22 months 1.045 divers visited this site)⁷⁰⁸.

⁷⁰⁴ Roberts P. and Trow S. (2002), *op. cit.*, pp. 12-13.

⁷⁰⁵ English Heritage (2010), *last op. cit.*, p. 6.

⁷⁰⁶ English Heritage (2010), *last op. cit.*, p. 8. See also English Heritage, *Application for a license to visit, survey, recover surface artifacts from or excavate a Designated Site under the Protection of Wrecks Act 1973*, Appendix I, Terms and Conditions, (n.d.), sect. 5.1.

⁷⁰⁷ More info about the *Coronation* (a warship of the end of the XVII century) and its dive trail are available at the web-site: <http://www.coronationwreck.co.uk/index.html>. Concerning the *Hazardous* wreck's dive trail check the web-page: http://archaeologydataservice.ac.uk/archives/view/hazardous_eh_2005/index.cfm. About the *HMS Colossus* dive trail see <http://www.cismas.org.uk/colossus-dive-trail.php>.

⁷⁰⁸ Nutley D., “Protected Zones and Partnerships: Their Application and Importance to Underwater Cultural Heritage Management”, in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006, p. 33.

According to English Heritage's guide "*licenses are granted on the understanding that information obtained as a result of authorised activity will be available and accessible to the public*"⁷⁰⁹. This statement underlines the general aim of English Heritage to keep informed the public about any discovery made on the Protected Wreck Sites.

This goal is partially realized through the English Heritage official web-site. This web-site provides information about each Protected Wreck Site like, for example, its history, how it has been discovered and which kind of artifacts have been located. Moreover, it proposes links to official reports and/or to eventual further research projects.

Along with the web-site, the communication process exploits also other sources. Some of the studies conducted on the Protected Wreck Sites have been published in both public and scientific reviews (like, for example, the *International Journal of Nautical Archaeology*). Occasionally temporary displays of recovered artifacts are organized in public events such as, for example, the flagship event for Kent Coastal Week and the Natural England and See Search⁷¹⁰.

Lastly, some wrecks are signaled through buoys (as preventive measure against the risk of anchoring), while the presence of others is manifested through the installation, on the shore, of informative panels.

Socio-economic impact

English Heritage has authorized several stakeholders to undertake activities on the Protected Wreck Sites. Among them there are professional archaeological groups like the Archaeological Diving Unit of the University of St. Andrews and the Wessex Archaeology, and a charitable trust like the Hampshire and Wight Trust for Maritime Archaeology. These activities have been occasionally supported by *ad-hoc* foundations like, for example, the Hazardous Project Group or the VOC-Ship Amsterdam Foundation.

In the view of English Heritage "*there is a good argument for the public support of at least one high quality fieldwork training opportunity in the UK at any given time. Such a project should be aimed at enhancing the skills of amateurs, students and professionals, and should encourage partnership and*

⁷⁰⁹ English Heritage (2010), *op. cit.*, p. 7.

⁷¹⁰ See Advisory Committee on Historic Wreck Sites (2010), *op. cit.*, p. 45.

the exchange of expertise”⁷¹¹. Therefore, despite the admission constraints, the restricted access sites may play a significant social function, being ideal places for professional training opportunities.

Presumably, the Protected Wreck Sites currently produce limited benefits on the local economy. However, this assumption changes once displays or dive trails are organized. Since the opening of a dive trail in 2009, for example, the *HMS Colossus* has been totally visited by 1.097 divers (around 250 visitors per year), thus significantly contributing to the local economic growth⁷¹². The *Coronation* wreck project is another successful example. In around seven month since the opening of the dive trail (April 2011) English Heritage has licensed 973 divers to visit this site⁷¹³. Moreover, the intended plan to exhibit all the artifacts recovered from the site in a unique collection at Mount Edgecumbe House could appeal both divers and non-divers.

The main sources financing research projects on Protected Wreck Sites are English Heritage, British Academy and the Heritage Lottery Fund. But Camidge reports a curious data: “*English Heritage has a budget of about £100,000 per year for the designated sites. The licensees of the designated sites fund their own work on these sites; the amount spent by licensees annually is an unknown but not inconsiderably sum*”⁷¹⁴. Therefore, the designated licenses have often to find additional source of funds (NGOs, charitable trusts, etc.) for performing their activities and researches on the Protected Wreck Sites.

4.3 Benefits and limits of the restricted access sites

Restricting the access is mainly a way to preserve the structural features of highly significant sites from undesired human activities. Therefore, this method could be temporarily used, for example, to cover the period between the discovery of a site and its (eventual)

⁷¹¹ Roberts P. and Trow S. (2002), *op. cit.*, p. 7.

⁷¹² Data source: English Heritage.

⁷¹³ Data source: <http://www.coronationwreck.co.uk/index.html>.

⁷¹⁴ Camidge K., “Informing Marine Designation”, in McElvogue D., “Informing Marine Designation: The IFA Perspective”, *Institute of Field Archaeologists Maritime Affairs Group (IFA-MAG) Bulletin*, special edition: report on the MAG Seminar ‘Informing Marine Designation: Sourcing Field Evaluation of Marine Historic Asset Expertise’ (London, 8 February 2007), March 2007, p. 9.

excavation. Table 28 sums up the main advantages and disadvantages associated with the realization of restricted access sites.

RESTRICTED ACCESS SITES		
INTERESTS	POSITIVE ASPECTS	NEGATIVE ASPECTS
Scientific research	The creation of restricted access sites is subordinated to the scientific research;	Some scientific analysis could be hardly enforced <i>in situ</i> ;
Conservation	After years underwater, the equilibrium reached between a site and its setting slows down the deterioration processes; Measures of stabilization <i>in situ</i> can be adopted;	The sites' conditions must be monitored; Further studies on the long-term reliability of the measures of <i>in situ</i> stabilization are needed;
Protection	A restricted access site may significantly reduce the risk of pillaging and damaging;	Needed an efficient legal system and adequate tools of surveillance; Does it really prevent the risks from activities incidentally affecting this heritage?
Preservation <i>in situ</i>	Guarantees the preservation <i>in situ</i> ;	
Access	Often the access is not totally banned, but it is necessary a license in order to dive in the designated sites;	The procedures required to get a license can totally undermine the public access; The access restrictions must be justified;
Promotion	Restricted access sites can be promoted in the same way as the other methods supporting an <i>in situ</i> preservation policy;	Are these sites enough publically promoted?; Should these sites be publically promoted?
Socio-economic impact	Operational costs are usually relatively low; These sites are excellent for professional-educational fieldwork trainings;	Extremely low economic impact; The overall costs of are not, in any case, marginal;

28. Table summarizing benefits and limits of the restricted access sites

In general, the efficacy of this system is primarily determined by the success of two factors: first, the deterrent power of the expected sanctions for eventual violations; second, the control capacity of the coastal guard. Considering the limited operative means usually available for the coastal guards, the power of control seems to fall moving far from the coast. This is a reason why the installation of

modern tools of surveillance (underwater cameras, anti-intrusive sonar system's devices, etc.) and the endorsement-enforcement of strict financial and penal sanctions are necessarily measures to improve the level of protection of these sites.

In terms of conservation, when the artifacts result exposed to a risk of deterioration than two solution can be implemented: first, the recovery and conservation of these artifacts in apposite structure "on-land"; or, second, their conservation *in situ* adopting techniques of covering and/or re-burial (see the next method of management). Considering the dynamical changes of the underwater environment, an appropriate program of monitoring should be organized to keep controlled the stability of the site.

The trade-off between protection and accessibility is the main limit of this method of management. The parameters of restriction may significantly vary case by case (from a total prohibition to a regulate access), but usually this method is not primarily thought to encourage the public access. In respect of this clash of interests:

- first, the organization of total banned access sites should be limited, as far as possible;
- second, whether the accessibility is not totally banned, the documents for obtaining the requested authorization have to be easily available and relatively simple to fulfill. Moreover the entire decisional process for granting or denying a license should not be excessively long;
- third, once a site reaches an acceptable level of stabilization and there are sustainable conditions for a significant public accessibility, the organization of an underwater archaeological park should be seriously considered.

For what concerns the promotion, several times the public is not informed enough about the restricted access sites prevailing the erroneous idea that "no access means no need of promotion". On the contrary, specifically due to the imposed constraints, it is important to develop a comprehensive program of promotion aimed to explain the scientific significance of these sites and the reasons why they have to be protected through a restricted access regime. Knowledge and understanding are the best allies to get public's support.

Finally, from a social point of view the restricted access sites may be perfect locations for the development of professional and educational archaeological fieldwork trainings. Thus, the adoption of cooperative agreements with local universities and research centers, as well as the organization of introductive archaeological courses for sport-divers could represent further opportunities for strengthening the social role of these sites. From an economic perspective, despite a lack of data, the costs of implementation and maintenance of this method are, presumably, lower than those requested by other methods of management for the underwater cultural heritage (such as, for example, recovering and exhibition in museum “on-land”, underwater museums and, perhaps, underwater archaeological parks too). Nevertheless, the related costs may significantly vary according to the specific solutions of conservation (use of sandbags, geotextile, etc.) and protection (underwater cameras, anti-intrusive sonar system’s devices, etc.) implemented.

5. Reburial or covering sites

5.1 Introduction

One emerging approach consists in the adoption of techniques of preservation *in situ* aimed to slow down the degradation process affecting the underwater cultural heritage. The goal is to ensure the long-term conservation *in situ* of this heritage, proposing a valid alternative to its recovery.

More precisely this solution is mainly used when:

- the structures or the artifacts of a site, previously covered by a layer of sediments, becomes exposed due, for example, to a storm, sand movements or other reasons;
- the site is still buried, but not enough to prevent a worsening of its degradation process;
- it is not possible or desirable, at present, to recover all the discovered archaeological objects.

Therefore, as sustained by Salaris *et al.*, “*la ricopertura non è una soluzione di ripiego ma spesso può essere la cosa più corretta qualora non esistano le*

condizioni per una musealizzazione in situ o per il recupero, il restauro e la conseguente conservazione o esposizione"⁷¹⁵.

This method of management has been here indicated as reburial or covering sites, but actually the reburial is just one of the different techniques of preservation *in situ* currently adopted by underwater archaeologists (other techniques entail, for example, the use of sandbags, geotextiles, artificial sea grass, debris netting, etc.)⁷¹⁶. Despite their specific differences (like, for example, in the materials used, in the environments in which they result more efficient, etc.) all techniques of preservation *in situ* share certain common features. As affirmed by Mesić *"a method of physical protection has to answer several criteria: it is supposed to be non-intrusive (i.e. it should not damage the site) and removable, if necessary, as the possibility of future archaeological excavation of a site should be never excluded. Moreover, its installation should be as simple and cost-effective as possible"*⁷¹⁷. Thus, considering their shared aims and primary features it is possible to group all these techniques in a unique method of management.

Different countries have extensively used this method of management (like, for example, Italy, Spain, Greece, UK, etc.). However, there is one precise state that, more than others, has in the last 20 years dedicated enormous efforts on the research and development of these techniques: the Netherlands. Therefore, recognizing the important work realized by Dutch archaeologists in this field of research and taking into consideration its value as international "pilot project", the BurgZand Noord 10 (BZN10) wreck site will be considered as main case study⁷¹⁸.

5.2 The BurgZand Noord 10

Brief history of the BurgZand Noord site

The BurgZand Noord 10 is a well preserved 17th century merchant shipwreck located, at a depth of 6-8 meters, in an area of the Wadden

⁷¹⁵ Salaris V., Brodasca V. and De Santis H., *Archeologia Subacquea*, Ananke, 2009, p. 179.

⁷¹⁶ For an extensive description of these techniques see, for example, Manders M. (editors, 2011a), *op. cit.*, pp. 25-46, and Davidde B. (2005), *op. cit.*, pp. 137-150.

⁷¹⁷ Mesić J. (2009), *op. cit.*, pp. 95-96.

⁷¹⁸ As explained by Vos, *"Burgzand is the name of one of the shallows in the western Wadden Sea east of the island Texel"*. The number 10, on the contrary, is due to the fact that more than one shipwreck (12 for the moment) has been documented in the area. See Vos A., *"The BurgZand-project and MoSS"*, *MoSS Newsletter*5, December 2003, p. 4.

Sea known as the Texel Roads. As reminded by Manders “Here ships were protected from the dominant winds coming from the West and Northwest while they were waiting to be loaded or unloaded or waiting to sail out”⁷¹⁹. The site comprehends, other than the wreck structure, the objects that were loaded within the ship such as, for example, Spanish olive jars and oak casks.

In the end of the 1990s the underwater currents moved the sediments which covered the site, exposing it to both environmental (mainly wood-boring organisms and erosion) and human threats (fishing activities). “Because of its age, cargo, interesting ship construction and the extraordinary conditions of the remains it was decided to protect the wreck”⁷²⁰. A polypropylene mesh was, therefore, installed to favor the natural re-burial of the site.

The conservation activities on the BurgZand Noord 10 wreck were realized by the ROB/NISA archaeologists within the Monitoring, Safeguarding and Visualising North-European Shipwreck Sites (MoSS) project⁷²¹. The fieldworks on the site were not only directed to the preservation of a significant archaeological site, but they were also considered as an opportunity to evaluate the efficiency and efficacy of different techniques of preservation *in situ*⁷²².

The organizational and legal context

From an organizational view the ROB/NISA (Rijksdienst voor het Oudheidkundig Bodemonderzoek/Nederlands Instituut voor Scheeps- en onderwater Archeologie) is the main governmental organism responsible for the management of the maritime and underwater cultural heritage. Till few years ago the archaeological researches and

⁷¹⁹ Manders M., “The In Situ Protection of a 17th-Century Trading Vessel in the Netherlands”, in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006a, p. 70.

⁷²⁰ Manders M. R., “Protecting Common Maritime Heritage. The Netherlands involved in two EU-projects: MoSS and BACPOLES”, in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneo*, Vol. 4, Massa Editore, Sep. 2004b, p. 278.

⁷²¹ The MoSS project has been already presented at pp. 128-129. Further information about this project are available at its official web site: <http://www.mossproject.com>.

⁷²² Different wood samples were buried close to the site in order to compare the results achievable using different technique of preservation *in situ*. For more information, see Manders M. R., *last op. cit.*, p. 280.

fieldworks were prominently governed by the national archaeological service (even if a substantial contribution was also offered by the Dutch academic institutions and the municipal archaeological groups).

The adoption, in 2007, of the Archaeological Heritage Management Act (Wet op de Archeologische Monumentenzorg) has significantly reorganized this central oriented structure favoring, from one hand, a partial decentralization of the decision-making process and, on the other hand, the involvement of private licensed archaeological companies in the excavation of Dutch archaeological sites⁷²³.

From an international legal perspective the Netherlands has ratified the 1982 UNCLOS and the 1989 Salvage Law Convention recurring to the reservation of article 30, par. 1 (d)⁷²⁴. On the contrary this state has not yet ratified the 2001 UNESCO Convention, but it has adopted the Rules expressed in its Annex as archaeological standard parameters.

At national level there is not a specific law for the underwater cultural heritage. Therefore, this heritage is primarily protected by the 1988 Monuments and Historic Building Act (Monumentenwet).

In its art. 1 this Act defines ‘monuments’ as:

1. *“All objects constructed at least fifty years ago which are of public interest because of their beauty, scientific significance or cultural and historic value;*
2. *Sites which are of public interest because of the presence of the objects referred to under 1;”*⁷²⁵.

Article 3 of the 1988 Monumentenwet disposes the possibility to confer to the monuments (and, therefore, to the underwater archaeological sites too) the status of protected monuments, strengthening the level of their legal protection⁷²⁶.

⁷²³ More detailed information about the effects produced by this reform are available in Keers G., Van der Reijden H. and Van Rossum H., *Planning Archaeology. A Synthesis of the Thematic Sub-reports*, Dutch report, July 2011.

⁷²⁴ Despite this reservation, the Netherlands is one of the country with the highest rate of auctioned historical salvage artifacts.

⁷²⁵ Netherlands, Monuments and Historic Building Act (Monumentenwet), unofficial English translation, 1988, art. 1, par. b 1 and 2.

⁷²⁶ Netherlands (1988), *last op. cit.*, art. 3. Article 1 defines “protected monuments” as “immovable monuments recorded in the registers established by this act”. Netherlands (1988), *last op. cit.*, art. 1, par. d.

Moreover, this law introduces a series of prohibitions and duties specifically aimed to protect the monuments.

In particular:

- it is prohibited to damage or destroy a protected monument as well as to intrusively affect it without the permission of the competent authorities (art. 11)⁷²⁷;
- it is prohibited, in general, to carry out unlicensed excavations on monuments (art. 39). In addition the authorized excavator has to make available the discovered movable objects for the scientific research (art. 48)⁷²⁸.
- it is compulsory to report any accidental discovery of potential monuments (art. 47)⁷²⁹.

Furthermore, according to art. 43 *“moveable monuments which are found during excavations and of which no-one can prove title to ownership shall be the property of the State”*⁷³⁰. Any violation of these dispositions is a crime⁷³¹.

Values and threats

A series of values are associated to the BZN 10 wreck site:

- Archaeological value: the good preservation of the organic materials (wooden wreck structure, ropes, etc.) as well as the completeness of one side of the wreck (which makes easily conceivable its original shape) make this site an excellent source for archaeological studies;
- Historical value: according to the ROB/NISA experts, this wreck is presumably *“a German ship from the second half of the 17th century which was wrecked on its return voyage from the Iberian Peninsula”*⁷³². Currently this interpretation prevails, but

⁷²⁷ Netherlands (1988), *last op. cit.*, art. 11.

⁷²⁸ Netherlands (1988), *last op. cit.*, arts. 39 and 48.

⁷²⁹ Netherlands (1988), *last op. cit.*, art. 47.

⁷³⁰ Netherlands (1988), *last op. cit.*, art. 43.

⁷³¹ For an overall view of this issue see Maarleveld T. J., *“The Wadden Sea and heritage protection in The Netherlands”*, *MoSS Newsletter* 5, December 2003 and Maarleveld T. J., *“Le Patrimoine maritime et sa protection selon le droit néerlandais”*, in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneo*, Vol. 4, Massa Editore, Sep. 2004.

⁷³² NISA, *Management plan of shipwreck site Burgzand Noord 10”*, 2004, p. 10.

the same Dutch archaeologists declare that “*in future this will have to be investigated further*”⁷³³;

- Research value: the structure of the vessel, an armed trader constructed according to the carvel built vessel tradition, has an atypical high quantity of pinewood. This is an interesting feature for naval engineering studies. Moreover this wreck is a rare discovery because “*Northern German merchant vessels had not been known previously in the Wadden Sea. So this vessel is “one of a kind”*”⁷³⁴.

This site started to be mainly threaten when, in the end of the 1990s, it became exposed. The first signs of biological deterioration appeared on the shipwreck, caused by the concomitant action of wood-boring organisms, fungi and algae. The shifting of the sands caused by tidal movements (effect of abrasion) and the fishing activities practiced in the area represented additional elements of risk. Considering these threats and the archaeological relevance of the site, the ROB/NISA decided to physically preserve it *in situ*.

Analysis of the interests at stake

Preservation *in situ*

The ROB/NISA archaeologists decided to preserve *in situ* the BurgZand Noord wreck site according to what can be considered as a “national plan” of management. In the view of Manders “*with the help of the physical protection of shipwrecks underwater it is possible to create an archive of wrecks from which we have basic information. This can help us in the future to select the right wreck to be excavated that can answer specific questions that we have about our maritime past*”⁷³⁵. Moreover, as already reminded, this solution was considered as an opportunity for further evaluating the efficiency and efficacy of some conservative fieldwork techniques.

⁷³³ NISA (2004), *last op. cit.*, p. 13.

⁷³⁴ NISA (2004), *last op. cit.*, p. 16.

⁷³⁵ Manders M., “Safeguarding: The physical protection of underwater sites”, *MoSS Newsletter*5, December 2003b, p. 20.

Scientific Research

Till now the non-intrusive archaeological research has been mainly directed to the identification of the wreck (century, origin, etc.) and the interpretation of her route (through studies on the artifact assemblage as well as the presence of cannons on-board)⁷³⁶. To this aim the ROB/NISA archaeologists have drawn a non-intrusive map of the site and they have taken three-dimensional images recurring to a multibeam side scan sonar⁷³⁷.

The BZN 10 site is also relevant from a conservational perspective. As expressed by NISA experts *"because this wreck is seen as being a representative example of the many wrecks found in this area, we can make statements on the condition of wrecks in the whole area"*⁷³⁸.

After the implementation of the debris nets, a data logger was fixed to regularly monitor and record the conditions of and around the site (temperature, water depth, salinity, etc.). This solution permitted to evaluate the efficiency of the applied technique as well as to keep controlled the dynamic environment surrounding the site. In addition sample tests were placed within the site area (some covered by sediments, others left exposed to the tidal currents) in order to collect comparable data about the degradation process in this underwater context.

Protection and Conservation

A polypropylene mesh was installed to cover the BZN10 wreck. This technique favors the accumulation of a layer of sediments upon the site exploiting the tidal currents. In this way the anaerobic environment that has permitted the wreck conservation through the centuries is artificially recreated (wood-boring organisms, which are the main natural threat, need oxygen to survive). In addition the mesh covered by sands creates a sort of "shield" that increases the protection of the site both from human threats like, for example, fishing nets and

⁷³⁶ See, for example, Manders M., "Preliminary results of the investigation into the ship construction of the BZN 10 wreck", *MoSS Newsletter*5, December 2003a and Van Holk A., "The interpretation of the artefactual remains from the wreck site BZN 10", *MoSS Newsletter*5, December 2003.

⁷³⁷ The multibeam images resulted useful, for example, to evaluate, over the time, the accumulation of sand banks upon the site.

⁷³⁸ NISA (2004), *op. cit.*, p. 18.

anchoring, and physical environmental threats such as, for instance, the erosion caused by tidal movements and underwater currents. The validity of this method is highly convincing, but it is not a proper solution for all kinds of underwater environments. According to Manders *“a problem with this mesh is that after a few weeks the holes in the mesh tend to block by the growth of organisms... When this happens and when not enough sedimentation has been settled on the wreck, then there is a big chance the mesh will rip. This method can therefore not be used in wrecks with a lot of height differences. It will always be important to have enough sand transport on the seabed”*⁷³⁹. While in the BZN10 wreck, the Wadden Sea features and the overall site structure made this solution feasible and successful, in other cases like, for example, in the UK *HMS Colossus* this method resulted scarcely effective⁷⁴⁰.

Access and Promotion

The technique of preservation *in situ* adopted completely covers the site with sediments. Consequently, its fruition results totally compromised. Actually, adverse environmental conditions made hard the visualization of the site even before its covering through the debris net (despite its low deepness). As reported by Jöns, the BZN wreck *“only in rare occasions it is visible from more than a 1m distance. Therefore, video or photographic documentation is only possible for details, which means that documentation is mostly restricted to plans drawn with the help of a purpose built CAD-technique”*⁷⁴¹.

Fortunately, the access constraints and the low water visibility have not negatively affected the promotion of the BZN 10 wreck. On the contrary, numerous articles about this site have been published in national and international scientific reviews (but also in periodicals more accessible to the general public like, for example, National Geographic), explaining the goals of this project, describing in details

⁷³⁹ Manders M. R. (2004b), *last op. cit.*, p. 282.

⁷⁴⁰ A trial mesh net was positioned in the area of the HMS Colossus, but *“the large amounts of loose kelp passing over this site probably make this type of protection unsuitable for this particular site”*. Good results were, on the contrary, obtained through the installation of Terram 4000 geotextile. See Camidge K., *“HMS Colossus. An experimental site stabilization”*, *Conservation and management of archaeological sites*, Vol. 11, No.2, May 2009, p. 170.

⁷⁴¹ Jöns H., *“Techniques of Documentation and Visualization”*, *Moss Newsletter* 6, Genuary, 2004, p. 7.

the archaeological operations conducted *in situ* and commenting the registered results. This case, in addition, has been presented in several conferences dedicated to the underwater cultural heritage, thus achieving a certain notoriety in the academic society. Moreover the MoSS web-site and its newsletter have also achieved a fairly success, keeping informed both the scientific community and the public about the progressively development of the project.

Socio-economic impact

From a social perspective the primarily beneficiary of this method of management will be principally the future generations that will have the possibility to conduct archaeological investigations on a well preserved wreck site.

The first non-intrusive assessments were financed by the ROB/NISA yearly budget, while the research conducted between 2001-2004 were realized within the MoSS project (National, EU and Culture 2000 program funds)⁷⁴². The planned total costs for the realization of the project were 149.299 euro⁷⁴³.

On 2009, due to the observation of strong signs of erosion around the BZN 10 site, the ROB/NISA team intervened repairing and extending the debris netting protection. The total cost for the realization of this (two weeks) work was of 70.000 euro⁷⁴⁴.

5.3 Benefits and limits of the reburial or covering sites

Considering its relatively contained costs of execution, the promising results already registered and its compatibility with the preservation *in situ* policy promoted by the 2001 UNESCO Convention, the popularity of this method of management has considerably grown in the last 10 years. Nonetheless, there are some constraints that should be considered. Table 29 shortly presents the main benefits and limits of reburial of covering sites.

⁷⁴² See NISA, *op. cit.*, pp. 18-20.

⁷⁴³ See NISA, *last op. cit.*, Appendix 3.

⁷⁴⁴ The costs related to each voice (personnel costs, ship, materials, etc.) are reported in Manders M. (editors, 2011b), *op. cit.*, p. 43.

REBURIAL OR COVERING SITES		
INTERESTS	POSITIVE ASPECTS	NEGATIVE ASPECTS
Scientific research	Modern technologies enable non-destructive analysis <i>in situ</i> ; In general, this method preserve the site for future researches; Possibly, a site may be excavated and then conserved <i>in situ</i> ;	Some scientific analysis could be hardly enforced <i>in situ</i> ;
Conservation	In a protected anaerobic environment the natural threats are strongly reduced; Conditions for a long-term conservation may be recreated;	The sites' conditions need to be monitored; The deterioration can be slowed down, but it cannot be stopped; Unsolved the anaerobic bacteria's impact;
Protection	The installation of artificial barriers may hide the site and hinder eventual looters; Some techniques may protect the site from fishing nets and anchors;	Each technique ensures a specific kind of protection; Still certain risks of looting and damaging by souvenir-divers and treasure hunters;
Preservation <i>in situ</i>	Guarantees, in general, the preservation <i>in situ</i> ;	
Access	Some materials (like, for example, metals) may be preserved <i>in situ</i> without harming their aesthetic; It is possible to recur to alternative techniques of visualization (rather than a direct enjoyment);	The layer of sediments (or other tools like, for example, sea-grass or geotextile) covering the sites (especially those with organic materials) completely obstruct the public vision;
Promotion	Reburied sites can be promoted in the same way as the other methods supporting an <i>in situ</i> preservation policy;	Are these sites enough publically promoted?; Is it convenient to spread info about a reburied site?;
Socio-economic impact	Operational Costs are considerably lower than the exhibition in "on-land" museums";	The socio-economic benefits are postponed; The long-term costs are not marginal;

29. Table summarizing benefits and limits of the reburial or covering sites

This method is characterized by a high versatility. Potentially, for each type of underwater site (in shallow or deep sites, cold or hot waters, sandy or rocky sea bottoms, etc.) can be identified a specific technique to favor its long-term preservation. However, not all sites need to be physically protected and, in other cases, *“it might not be considered worthwhile spending much effort or money on physical protection”*⁷⁴⁵. Therefore, this method is a valid solution for the preservation *in situ* of the underwater cultural heritage, but it is not a *“panacea for all ills”* considering, in addition, that it substantially limits the public accessibility.

In this method the monitoring process assumes a key role. A specific technique of preservation *in situ* may produce positive results in a certain location but, on the contrary, it may be totally ineffective, or even dangerous, in other contexts. Therefore, it is fundamental to preventively evaluate the conditions of a site in order to assess what is the most appropriated technique for its preservation *in situ*. But the monitoring process is equally important once the planned method has been applied *in situ*. It permits, on one hand, to understand if the implemented measure effectively slows down the degradation process; on the other, to regularly control that the solution adopted has not been intentionally or unintentionally altered by human activities. Unfortunately the funds allocated for the monitoring process are often limited to a short period of time (mostly the duration of a project), thus making hard a long-term evaluation of the implemented techniques.

Interestingly Davidde underlines that *“in Italy, covering a site to protect it not only from marine agents, but above all from treasure seekers, has at times proved counterproductive, frequently only exciting the curiosity of ill-intentioned persons with the resultant partial or total loss of the artifacts”*⁷⁴⁶. Therefore the sole adoption of a technique of preservation *in situ* may (sometimes) only apparently strength the protection of an underwater cultural site, resulting, on the contrary, totally useless or even counterproductive. Consequently, in order to be really effective, this method must be supported by a functioning legislative system that may successfully discourage eventual looters.

⁷⁴⁵ Manders M. (2004c), *op. cit.*, p. 5.

⁷⁴⁶ Davidde B., “Underwater Archaeological Parks: A New Perspective and a Challenge for Conservation. The Italian Panorama”, *International Journal of Nautical Archaeology*, Vol. 31, N. 1, 2002, p. 84.

The promotion of the reburial or covered site is another aspect that needs attention. Diffusing information about a site conserved *in situ* may, positively, increase the community's knowledge and concern about this heritage. Negatively, it may catch the attention of souvenir-divers and treasure hunters, posing the site at risk. This consideration may raise some doubts about the opportunity to promote these sites, especially when they contain movable goods. However, according to the author, promoting the underwater cultural heritage is a duty for all those who work in this sector. Some information may be hushed up for protective reasons, but it is a mistake to limit the public right to be informed merely due to the dishonest mentality of few. Most of the public is capable to appreciate this heritage in a conscious way. Moreover, obtaining the favorable sustenance of the local divers is a key task to make this method of management sustainable and reliable.

The main weak point of this method of management is related to the accessibility issue. The prioritization for the site's conservation *in situ* often lead to a (temporarily) sacrifice of the public accessibility. Two different (not exclusive) directions may be taken in order to fulfill this gap. First, the development of researches aimed to identify new cost-effective techniques of preservation *in situ* that may equally balance conservation and accessibility. Second, the implementation of alternative solutions of visualization (such as, for example, the use of interactive 3D reconstructions or the construction of replicas). As stated by Manders "*visualization is not only a matter of recording and displaying what you see. It can also be a picture that is created in the mind; emphasizing the mystical character of shipwrecks under water*"⁷⁴⁷.

Finally, the socio-economic impact of this method of management shows both light and shade. Positively, the costs of the conservation *in situ* are significantly lower than the recovery, conservation and display "on-land". Manders, comparing the costs for the recovery, conservation and exhibition of the *Mary Rose* (UK) with those for the conservation *in situ* of the *Stora Sofia* (Sweden), shows that "*a large number of historical ships (in this example 1100) could be preserved for future generation for the same cost as of one single wreck could be conserved and displayed*"⁷⁴⁸. However, it must be clear that the socio-economic benefits for the local communities are mainly postponed to a future data.

⁷⁴⁷ Manders M. R. (2004b), *op. cit.*, p. 283.

⁷⁴⁸ Manders M. (editors, 2011b), *op. cit.*, p. 46.

6. Benefits and limits of the “no action” option

Some underwater cultural sites that are not considered at risk are simply left underwater without the implementation of any specific measure of management.

UNMANAGED FREE ACCESS SITES		
INTERESTS	POSITIVE ASPECTS	NEGATIVE ASPECTS
Scientific research	Modern technologies enable non-destructive analysis <i>in situ</i> ;	Some investigative techniques of analysis could be hardly enforced <i>in situ</i> ; Are really these sites scientifically studied?
Conservation	After some years the equilibrium reached between the underwater cultural heritage and its setting slows down the deterioration process;	The sites' conditions should be monitored; Some materials, if left exposed, may rapidly deteriorate;
Protection	Sufficiently reliable if supported by an effective legal system and a communication campaign aimed to promote a “recommended behavior” among the divers;	All human threats can be hardly controlled through this method of management; Without an efficient and effective legal system the protection <i>in situ</i> is risky;
Preservation <i>in situ</i>	Guarantees the preservation <i>in situ</i> ;	The visitors' impact on the preservation <i>in situ</i> needs to be evaluated;
Access	Open free access for recreational divers;	Usually non-divers cannot access these sites; The divers' enjoyment and understanding of these sites could be weak without a professional interpretation;
Promotion	In theory, these sites can be promoted in the same way as the other methods supporting a policy of preservation <i>in situ</i> ; It is essential to	Often the public communication is strictly limited due to the absence of a management plan; Rarely efficient educational campaigns have been organized;
Socio-economic impact	Substantially low costs;	Extremely limited (and hardly valuable) socio-economic impact;

30. Table summarizing benefits and limits of unmanaged free access sites

This “no action” approach is characterized by the following features:

- the related site is not considered in “forthcoming danger”;
- with the possible exception of non-intrusive scientific investigations (and the publication of their results) no measures of management are adopted on the site;
- the site is preserved *in situ*;
- in general the enforced national legislation permits a free accessibility to the site.

Even if this method presents several weak points, it may result suitable considering the high number of underwater cultural sites in the world and the few resources usually available for their management. For this reasons, despite its several limits, this method has been adopted as fallback choice in several countries.

In order to increase its effectiveness this method should be supported by diffused educative campaigns aimed at disseminating respect for the underwater cultural heritage. However, due to a general lack of resources, this rarely happens (even if it seems that, over time, worldwide diving clubs’ members are showing a raising consciousness and respect toward this heritage).

The main positive aspects of this method are: the free accessibility to the sites preserved *in situ* and the related few costs of management. Negatively, this system, being uncontrolled, presents several risks in terms of conservation and protection. In addition, non-divers cannot usually access these sites and it is also unclear the level of enjoyment and understanding of recreational divers without a professional interpretation of the site (but, sometimes, the aesthetic fruition is enough to satisfy their will).

Perhaps this method may still result useful for some settings like, for example, modern shipwrecks located in scarcely accessible deep water location or covered site positioned in stable underwater environments. However, considering its several weaknesses, this method should be avoided as far as the available resources made it possible.

7. Comparative analysis of the different methods of management: main features and area of applicability

The choice of adopting one particular method of management for the underwater cultural heritage should be made considering the interests at stake and being aware of their challenges. The following table graphically shows the results of the interactions between the interests involved and the methods of management currently available⁷⁴⁹.

		INTERESTS						
		Scient. Research	Conser.	Protec.	Pres. <i>in situ</i>	Access	Promot.	Soc-eco impact
M A N A G E M E N T	Recovery and display in museums "on-land"	V	V	VV	X	VV	V	Benefits VV
								Costs X
	Underwater Museum	V	-	V	V	VV	V	Benefits VV
								Costs XX
	Underwater Arch. Parks	V	-	-	V	Divers VV	V	Benefits V
						Gen.Pub. -		Costs V
	Restricted Access Sites	V	-	V	VV	X	-	Benefits X
								Costs V
	Reburial or Covering	V	V	V	VV	XX	-	Benefits X
								Costs V
	Unmanaged free access sites	-	-	X	VV	Divers V	-	Benefits X
						Gen.Pub. XX		Costs VV

31. Table comparing the efficacy of the main methods of management⁷⁵⁰

⁷⁴⁹ This table aims to show to the reader a simple, but comparable view about the strength and weak points of each method of management.

⁷⁵⁰ Explanation of the symbols used in the table:

- VV: strong prevalence of positive outputs;
- V: prevalence of positive outputs;
- -: balanced pros and cons;

The table clearly shows that each method of management has its own specific benefits and limits. The absence of a “perfect method”, able to guarantee the highest level for each interest, involves four important general consequences.

First of all, the best solution of management has still to be determined through a case-by-case approach assessing values, threats and available resources.

Second, sometimes only harmonizing different methods of management is possible to face the complex dynamics affecting the underwater cultural sites. Therefore, there is a wide range of “intermediate methods” that should be considered. Examples are restricted access sites adopting techniques of conservation *in situ*, underwater archaeological parks applying policies of access control or museums “on-land” exhibiting wrecks still conserved underwater.

Third, there is still space for developing innovative methods of management for the underwater cultural heritage and for improving those already implemented.

Fourth, under a national perspective the most comprehensive and cost-effective way out could be to point to diversification, developing a system where different methods of management are adopted in the proper circumstances. This approach may allow a fair distribution of the resources consistent with the significance of the sites as well as a comprehensive satisfaction of the interests at stake. However, this system assumes a clear view of the situation in order to maximize its performances either immediately and in future terms. Thus, the need to direct an important amount of the annual resources to the complete mapping of underwater cultural sites located within the territorial sea and internal waters of a state.

An additional factor that may be observed from the table is that the scientific research is not, on the whole, structurally affected by the method of management implemented (with the obvious exception of the “no action” option). However, there are some differences that, even if slight, deserve attention.

-
- X: prevalence of challenging aspects;
 - XX: strong prevalence of challenging aspects.

Through the use of traditional and modern techniques of investigation in underwater archaeology (sketch plans, photomosaic, bathymetric surveys, sub bottom profilers, etc.) is nowadays possible to conduct scientific non-intrusive analysis *in situ* without the need to recover or excavate the discovered assets. Nonetheless, sometimes only through intrusive investigations certain scientific questions can be answered. Consequently, the scientific research should be preferably conducted through non-intrusive techniques of analysis. However, when intrusive analysis are scientifically required, they should be implemented only after the realization of a complete survey of the site and the elaboration of an appropriate project design (following the criteria established in the UNESCO Annex).

For these reasons an archaeological excavation is a turning point: from one side, it makes possible the collection of information that may be unachievable exclusively recurring to non-intrusive techniques of analysis; on the other side it is an irreversible process which inevitably transforms the archaeological context of a site. On the basis of these considerations it is possible to distinguish between pre-excavation and post-excavation methods of management.

	PRE EXCAVATION	POST EXCAVATION
Museums "on-land"	X	V
Underwater museums	V	?
Underwater arch. parks	V	X
Restricted access sites	V	X
Reburial or covering	V	V
Unmanag. access sites	V	X

32. Pre-excavation and post-excavation methods

The recovery and conservation "on-land" is principally a post-excavation method, being necessarily related to an intrusive process of scientific investigation⁷⁵¹. The reburial method has been used both in pre-excavation (like, for example, the BZN 10) and post-excavation (such as, for instance, for the 14th century shipwreck discovered close to the Reichenau Island, Germany) circumstances. On the contrary, the

⁷⁵¹ Actually, in the Vasa case the excavation has been realized after the recovery of the wreck, but due to the different approach and the limited technologies available at such time. In modern time an exception is represented by the Nanhai No. 1 case where the wreck has been previously moved and then excavated. But, as stated, this is (at least for the moment) an exceptional circumstance.

remaining methods of management are primarily pre-excavation methods, even if some of them (underwater museums, underwater archaeological parks and restricted access sites) may be also applied for partly excavated sites.

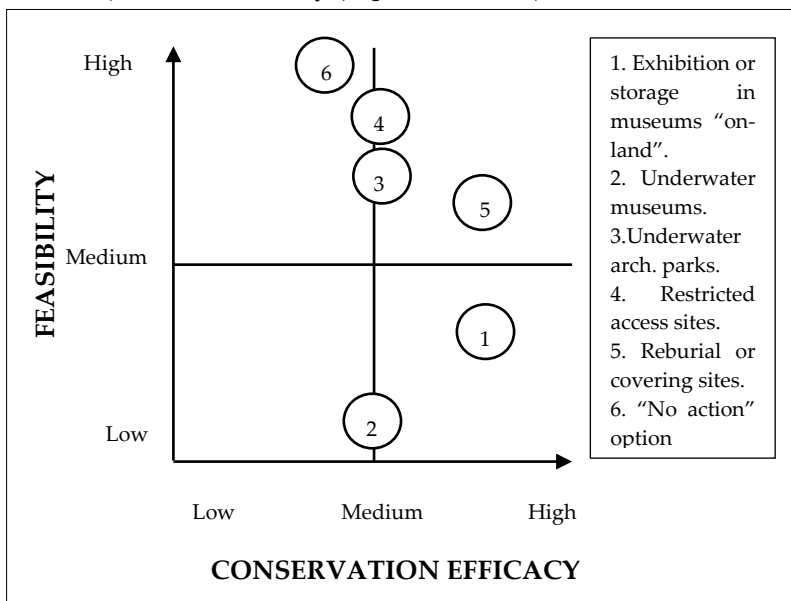
Thanks to the different tools available, promotion is another interest that may be efficiently satisfied in each method of management. As already explained it concerns the dissemination of knowledge both at scientific and public level. Unfortunately, most of the time, few resources are invested for this aim. This lack of funds primarily affect the dissemination of public knowledge (in general, the scientific dissemination and specialized education is more safeguarded). Frequently, after an initial phase of enthusiasm related to the discovery of a site, the communication process slows down and only few additional information are successively made publically available. As a result, the general public often consider the underwater cultural heritage a fascinating, but unknown issue and the local communities are not enough motivated to actively sustain the management of this heritage. On the contrary, as shown by the case studies here analyzed, enforcing a good plan of promotion may strength the protection of a site (Florida's Underwater Archaeological Preserves) as well as it may increase its public appreciation (Vasa Museum) and understanding (BZN 10 wreck). These are the reasons why even the restricted access and the reburied sites should be publically promoted (eventually keeping confidential those information that may put them in danger).

Concerning the preservation *in situ*, the author has noticed that this concept is often interpreted in different ways once referred to the practical management of the underwater cultural heritage.

Preservation <i>in situ</i>	A site is not excavated and its materials are conserved (as far as possible) in their original underwater context.		
Preservation <i>in situ</i>?	An underwater site is entirely moved into a diverse setting.	Only the semi-movable or immovable parts of a site (excavated in the past) are preserved in their original context.	The site is excavated and then re-buried in its original underwater environment.
Preservation not <i>in situ</i>	The site is excavated and its materials are recovered for a conservation "on-land".		

The recovery and exhibition “on-land” is evidently in contrast with the preservation *in situ* approach. Quite the opposite a preservation *in situ* policy seems to characterize the other methods of management. However it is debatable till which point these diverse interpretations are compatible and associable to the same concept (for example, is still possible to speak about a preservation *in situ* approach when a site is intrusively excavated and successively conserved underwater?).

The three most challenging aspects in the management of the underwater cultural heritage are, on the contrary, conservation, protection and access. The ability to meet these interests considerably differs depending on the chosen method. Figures 34, 36 and 38 offer an overview of the efficiency of each method in terms of conservation, protection and access, putting in relation their feasibility (costs and constraints) and their efficacy (expected results)⁷⁵².



34. Assessing the conservation efficiency

⁷⁵² These tables are interpretative schemas. They have been constructed by the author reflecting on the case studies previously exposed and the literature consulted. Considering the general lack of numeric data (or the impossibility to convert descriptive results in objective data) these tables do not reflect absolute factors. Nonetheless, they permit to compare the different methods of management and to make some reflection about their potential interrelations.

The conservation of a site is determined by a series of natural factors like, for example, deepness, water temperature, water salinity, typology of the seabed, aerobic or anaerobic context, biological activity, waves impact and tidal movements. Moreover, in the underwater environment, some materials (like, for example, timber and metals) result more exposed to the deterioration process than others (such as, for instance, ceramic and glass). Therefore a good estimation of the site's conditions and features is prerogative for a successful conservation plan.

If a site is located in a stable environment and it does not present significant signs of progressive deterioration, the preservation *in situ* is the most efficient solution, being able to guarantee its conservation at a low cost. In these circumstances, characterized by a "passive conservation process", methods such as underwater archaeological parks, restricted access sites or unmanaged free access sites may be largely adopted (in the table this last option is visualized as less reliable considering the lack of monitoring)⁷⁵³.

Differently, in other circumstances (like, for example, when a fragile site lies in a strongly mutable environment or its deterioration trend is rapidly advancing) all the above mentioned methods are scarcely useful, being necessary the adoption of an "active conservation process". Therefore they have to be implemented or substituted by two alternative solutions. First, the recovery and conservation in structure "on-land" of the goods at risk; second, the application of techniques of conservation *in situ*.

The first solution seems mainly feasible for small-medium size artifacts which may be easily recovered and treated in apposite structure for moderate costs. On the contrary this solution is less practicable, for example, for huge shipwreck sites mainly due to the difficulties related to their intrusive investigation and recovery, the risk of unexpected reactions, the need of appropriate spaces and technologies, and the high-lasting costs of their conservation. Nevertheless, as already shown, this method has been successfully implemented for the conservation of impressive shipwrecks like, for example, the Vasa (69 m), the Mary Rose (38 m) and the Bremer cog (23 m).

⁷⁵³ Underwater museums are not practical solutions for the sole conservation aim due to their high costs of implementation.

The second solution, on the contrary, aims to reconstruct the same conditions that have permitted the site's long-term preservation *in situ* recurring to tools such as, for example, sand bags, geotextile, debris nets, artificial sea grass, etc. Due to its relatively low costs this method is often more feasible than the recovery option. Moreover this solution respect the emerging trend, promoted by the 2001 UNESCO Convention and currently diffused in the maritime and underwater archaeological community, to preserve *in situ* the underwater cultural heritage as far as possible. Remarkably this method has been positively applied on ancient shipwreck sites of relevant dimension like, for example, the Stora Sofia (40 m) and the BurgZand Noord 10 (35 m). However four weak points have to be considered. First, cumulative costs may raise over time (monitoring, reparation of damages, substitution of tools, etc.); Second, this solution is generally incompatible with an accessibility policy (with few exception such as, for example, wrecks with metal structures). Third, the long-term effects of these techniques have not been perfectly studied yet. Fourth, the costs of future investigations are just postponed (the hope is that the future non-intrusive techniques of investigation will provide the same information achievable nowadays through an excavation).

	Recovery and Conservation "on-land"	Techniques of Conservation <i>in situ</i>
Costs ⁷⁵⁴	€Millions	€Thousands
Preservation of Context	X	V
Public Accessibility	V	X
Shallow Waters	V	V
Deep Waters	? ⁷⁵⁵	? ⁷⁵⁶
Group of artifacts	V	V
Isolated objects	V	V
Shipwrecks	X ⁷⁵⁷	V
Underwater Structures	X	V

35. Comparing the active conservation "on-land" and *in situ*

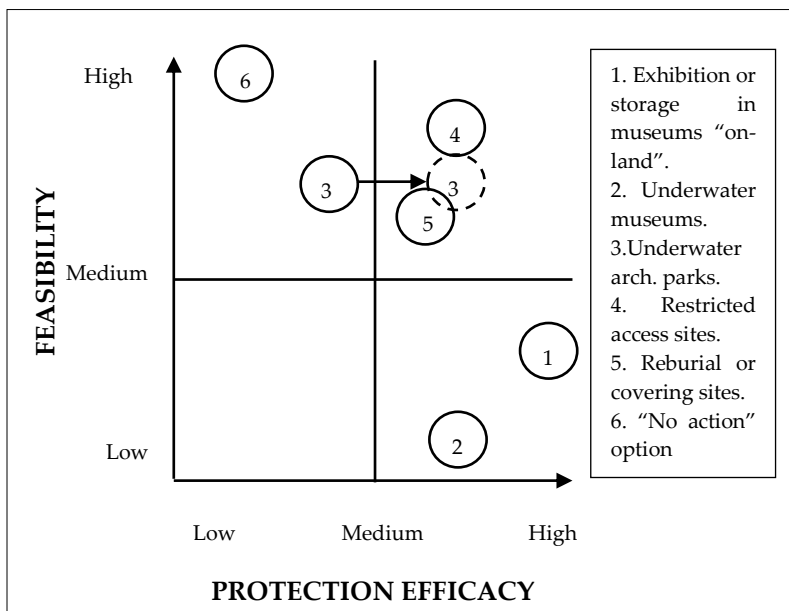
⁷⁵⁴ Estimation of costs for the conservation of a 20-30 m ancient shipwreck.

⁷⁵⁵ The recovery in safety of a shipwrecks located in deep waters may be complex (or even un-feasible).

⁷⁵⁶ The precise installation of sandbags, debris nets and geotextiles or the deposit of a sand layer may be difficult at higher depths.

⁷⁵⁷ The recovery of an entire shipwreck is possible, but definitively less feasible than its conservation *in situ*.

Protection, on the contrary, is aimed to face eventual direct or incidental human activities negatively affecting the underwater cultural heritage. Compared to conservation, more methods may provide positive outcomes in terms of protection.



36. Assessing protection efficiency⁷⁵⁸

Recovering the underwater cultural heritage for a museum exhibition or storage is a solution that virtually offers a 24h/day protection. Rarely episodes of damaging or stealing occur within maritime museums. However, in this case, protection and conservation are inevitably related (a waterlogged artifact cannot be protected without being previously conserved). As a result, the feasibility of this solution is intrinsically constrained by the already exposed challenges affecting the conservation process "on-land" (high overall costs, long-term processes, etc.).

⁷⁵⁸ In the figure 32 there are two "circle 3". The first circle (centered and drawn with a continuous line) expresses the protection level in the free accessible underwater archaeological parks, while the other (more on the right and drawn with a dotted line) refers to the protection of those parks undertaking a policy of access control.

Restricting the accessibility to a site may significantly reduce the risks of destruction, damaging and looting. However the efficacy of this method is strictly associated to the dissuasive power of the enforced law and the control ability of the competent authorities.

Some techniques of conservation *in situ* (such as, for example, sandbags and debris nets), creating a protective layer up on the site, may also result useful to prevent damages from fishing nets or anchoring. On the contrary they are usually less reliable against looters (despite their camouflaging effects).

The organization of a freely accessible underwater archaeological park may hardly be perceived as a measure aimed to increase the protection of a site. Actually this method implicitly assumes the acceptance of a certain level of risk due to the potential side effects of the divers' accessibility. Nevertheless the Florida's Underwater Archaeological Preserves' case shows that the level of protection offered by this method may significantly grow, actively working on the public promotion of this heritage and directly involving the local divers in the decision-making process. Moreover those underwater archaeological parks organized according to a controlled access policy most likely ensure a protection comparable to that of the restricted access sites.

The remaining two methods (unmanaged free access sites and underwater museums) are not totally convincing. The first because is too exposed to souvenir divers and unintentional damages caused by fishing activities or anchoring. The latter because its feasibility is strictly limited (high costs, realizable only for a specific typology of site, risks in the building phase, etc.).

	Museums "on-land"	Restricted access sites	Techniques of conservation <i>in situ</i>
Costs	X	V	V
Preserv. <i>in situ</i>	X	V	V
Public Access	V	X ⁷⁵⁹	X
Looting	V	V ⁷⁶⁰	X ⁷⁶¹
Damaging	V	V	V

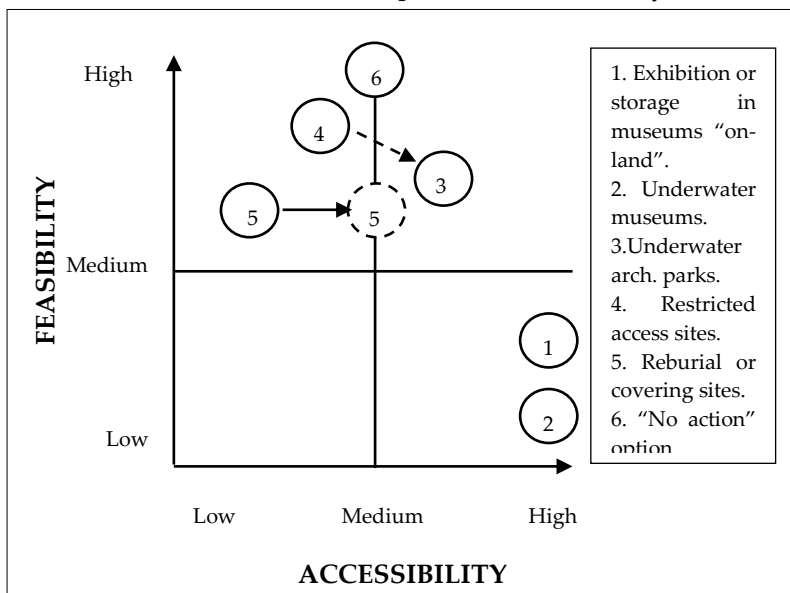
37. Comparing protection "on-land" and *in situ*

⁷⁵⁹ Most of the time the divers access is not totally banned, but significantly limited.

⁷⁶⁰ The risk of looting is not totally stopped, but it is significantly reduced.

⁷⁶¹ But some techniques, like the positioning of a layer of stones, may hinder eventual looters.

Different is the scenario that encompasses the accessibility issue.



38. Assessing the accessibility efficiency⁷⁶²

According to their accessibility, it is possible to organize the methods of management of the underwater cultural heritage in three groups.

The first group includes those methods, like reburial sites and the restricted access sites, that offer a limited direct access to this heritage.

The modern techniques used for the conservation *in situ* of ancient sites (like, for example, wooden shipwrecks) imply the use of different tools (sandbags, debris nets, geotextile, etc.) acting as barriers. Positively, they favor the conservation-protection processes. Negatively, they usually do not made possible the aesthetic appreciation of the treated sites⁷⁶³. Due to the constrictions affecting the direct access, physical or

⁷⁶² In the figure 34 there are two "circle 5". The first circle (on the left and drawn with a continuous line) expresses the accessibility related to ancient wooden shipwrecks conserved *in situ* through apposite techniques (reburial, geotextile, etc.), while the other (more centered and drawn with a dotted line) refers to the accessibility of metal wrecks and objects conserved *in situ* through anodes. The arrow that goes from "circle 4" to "circle 3" is aimed to underline the ease to move from one method to the other.

⁷⁶³ Less aesthetically obstructive is the impact produced by the preservation *in situ* of metal wrecks and objects through the use of sacrificial anodes.

virtual reconstructions of these sites should be considered as viable alternative solutions.

The restricted access sites are primarily organized for protective reasons. In some (limited) circumstances the accessibility to a site is totally banned. Most of the time, on the contrary, the accessibility is only restricted through a mechanism of licenses or authorizations. On the whole the number of divers who make request for visiting these sites is, usually, relatively low. However, as shown by the *Coronation*, *Hazardous* and *HMS Colossus* cases, a controlled access policy may be easily realized as soon as a site present satisfactory conditions of stability.

The second group concerns those methods which are mainly focused on the divers' accessibility. This group embraces unmanaged free access sites and underwater archaeological parks.

Positively, the first of these two methods is highly feasible and freely accessible. Negatively, its ease of access is strictly limited to the sole divers and, in addition, it is doubtful their full appreciation of certain sites without professional interpretative schemes.

Differently, the purpose of the underwater archaeological parks is to favor the public appreciation and comprehension of sites preserved *in situ*. Through the organization of guided snorkeling trails or visits through glass bottomed boats some of these parks are accessible not only to the divers, but also to the general public. Nevertheless, these mechanisms able to involve a large non-diving public have not been sufficiently enhanced yet. As a result most underwater archaeological parks are regularly visited by divers only. Moreover, it is still tricky to get a precise data about the effective number of people visiting the free accessible underwater archaeological parks.

In the third group there are the methods which are organized in spaces entirely accessible to the general public like underwater museums and museums "on-land".

An underwater museum is, at the moment, the only method which allows to a wide audience (more than 300.000 visited the Baiheliang Underwater Museum during its first year of opening) the pleasure to appreciate an underwater cultural site in its underwater context. Unfortunately the high implementation costs and a series of other hardly solvable constraints (water visibility, typology and localization

of a site, number of artifacts still *in situ*, visitors' safety condition, environmental impact, etc.) limit the feasibility of this method.

The museums dedicated to the exposition of underwater cultural goods offer to the general public the possibility to experience this heritage at low costs and without requiring specific skills or licenses. The current attendance to the Vasa museum (over 1.000.000 visitors each year) is an outstanding result, certainly beyond the most optimistic expectations of the average maritime museums. However, although with a lower number of guests (around 111.000 per year), the Roskilde museum shows how the recovery and exhibition "on-land" of underwater cultural goods may be proficient in terms of visitors. As main limit, this method does not permit the enjoyment of this heritage in its natural context. Moreover, the long-term and costly processes for the conservation (and display) of waterlogged materials make improbable (and, perhaps, even undesirable) its regular adoption on semi-movable sites (like, for example, shipwrecks of medium-wide dimensions).

	Unmanaged acc. sites	Underwater arch. parks	Underwater museums	Museums "on-land"
Costs ⁷⁶⁴	Low costs	€Thousands	€Millions	€Millions
Preserv. <i>in situ</i>	V	V	V	X
Protection	X	? ⁷⁶⁵	V	V
Public compreh.	X	V	V	V
Accessibility ⁷⁶⁶	Hundreds	Few Thousands	Hundred Thousand	Hundred Thousand
Isolated objects	X ⁷⁶⁷	X	X	V
Group of goods	X ⁷⁶⁸	V	X	V
Shipwrecks	X ⁷⁶⁹	V	?	V
Und. structures	V	V	V	X

39. Comparing accessibility "on-land" and *in situ*

⁷⁶⁴ Estimation of costs for the display (structures, buoys, etc.) and interpretation (brochure, panels, etc.) of a 20-30 m shipwreck.

⁷⁶⁵ As already explained, the level of protection may significantly vary according to factors such as, for example, the cooperative involvement of local divers, the implementation of protective structures like cages, etc..

⁷⁶⁶ Coarse estimation of the potential number of visitors per year (considering site of international relevance).

⁷⁶⁷ This method may possibly work for hardly movable artifacts (like, for example, anchors and cannons), while it is not suggestible for easily movable goods such as amphorae and dolia.

⁷⁶⁸ See previous note.

⁷⁶⁹ Possible use for metal wreck sites. Not advisable for fragile sites or whenever there are easily removable goods.

Concluding, the enhancement of *in situ* isolated goods, especially if located far from the coast and in deep water, is hard considering the overall costs-benefits. Consequently, in these cases their reburial or recovery (mainly where the object has particular expositive features or its preservation *in situ* may be unduly risky) are the most practical solutions. Those isolated sites which are hardly movable and barely damageable may be eventually let unmanaged as free accessible site.

If possible, aesthetically appreciable group of goods (like, for example, anchors of different type, origin and historical period) located in a confined underwater area should be managed organizing underwater archaeological parks or trails⁷⁷⁰. In this way the related benefits seem to far outweigh the expected costs. Alternatively, these goods may be recovered and exposed together "on-land". However this solution seems less appealing because, first of all, it removes these goods from their natural underwater context and, second, it inevitably involves a costly process of conservation.

From one hand, shipwreck sites may be valorized *in situ* through the organization of dedicated underwater archaeological parks. However, as already stated, there are a series of aspects (components' stability, accessibility, environmental conditions, biological context, intellectual and aesthetic appealing, etc.) that should be considered for evaluating if this method of management is a realistic option. According to Davidde, "*those [wrecks] with metal structures are without doubt the most suitable to be "exhibited" in situ*"⁷⁷¹. This is probably true. Nevertheless, at favorable conditions, ancient wooden wrecks may be also "displayed" *in situ* (like, for example, the Kronprins Gustav Adolf in Finland).

On the other hand, a shipwreck may be recovered and exhibited in a museum "on-land". This choice allows a public fruition much higher than that achievable through an underwater archaeological park. Adversely, its practical implementation is primarily constrained by the already mentioned conservation challenges and the high costs of implementation (besides the likely wish to keep in its underwater context the wreck). The development of an underwater museum has not been considered, till now, as a feasible option for the displaying of

⁷⁷⁰ Good examples are the Italians "Itinerario Archeologico delle Ancore" of Aci Trezza or "Itinerario of Punta Li Marsi" of Pantelleria.

⁷⁷¹ Davidde B. (2005), *op. cit.*, p. 148.

ancient shipwrecks. But in the Marine Museum of Karlskrona (Sweden) visitors have the possibility to pass through an underwater tunnel and to enjoy, looking through the disposed windows, the beauty of an actual wreck from the 18th century⁷⁷².

Underwater structures, due to their “immovable character”, have necessarily to be enhanced *in situ*. Therefore, several such sites are organized as underwater archaeological parks, some of them providing also tours through glass-bottomed boats (like, for example, in the underwater archaeological park of Baia). The here analyzed Baiheliang case has however demonstrated that the development of an underwater museum is not anymore a science fiction project. Positively, this solution may enhance an underwater archaeological site preserved *in situ* to unprecedented levels. Negatively, its high structural costs and the other already exposed constraints (water visibility, number and quality of the visible goods still *in situ*, safety conditions, etc.) make usually unrealizable or unnecessary the adoption of this method of management.

⁷⁷² See the museum official web-site: <http://www.marinmuseum.se/en/>.

CONCLUSION

These final pages review and highlight the main results achieved in this dissertation dividing them in theoretical reflections, juridical considerations and management analysis.

1. Theoretical reflections: the management of underwater cultural heritage as a complex system

“À force de réfléchir, il arrive qu’on tire certaines conclusions.
À force de tirer des conclusions, il arrive qu’on prenne une décision.
À force de décider quelque chose, il arrive qu’on le fasse.”

Daniel Pennac, Cabot-Caboche

The first part of my thesis is dedicated to the theoretical framework. It aims to identify, explain and organized in a structured model those variables that stand at the base of the underwater cultural heritage management.

Definition of underwater cultural heritage

Providing a precise definition of underwater cultural heritage is difficult for, at least, two reasons: first, not every underwater object should be considered within the scope of this concept (like, for example, natural rocks, underwater cable and pipelines, installations still in use, etc.) and second, the idea of culture is wide and dynamic through time and space. For the moment the best definition available is probably that offered by the 2001 UNESCO Convention. However, this is a legal definition specifically constructed for fulfilling the aims of this Convention and trying to balance, as far as possible, the divergent positions expressed by UNESCO state-members. According to the 2001 UNESCO Convention, in order to be classified within the underwater cultural heritage sphere, a site must satisfy three cumulative parameters: first, it has to be a “trace” created, used or in other ways connected to human begins; second, it has to express a “*cultural, historical or archaeological character*”; third, it has to spend at least 100 years partially or totally underwater. As a final result, this definition is still quite elastic because the mentioned “cultural character” allows for a fairly free interpretation. At the same time, it provides a parameter of reference (the time-limit) that, despite a debatable extension (are 100

years the best solution?), is useful for fixing an objective and possibly shared criterion.

Differently, a definition based primarily on a “significance assessment”, as proposed by some states, should be discarded. On one side, this approach is unreliable since the concept of “significance” may considerably change in the course of time, according to the place considered and depending on the available information; on the other side, it is undesirable because, from one side, it excludes *a priori* the protection of certain sites and, on the other, it is not a cost-effective solution.

Values

In general, the underwater cultural heritage is considered worthy of protection and enhancement given the several values it expresses (aesthetic, archaeological, artistic, economic, historical, research, symbolic and spiritual value) and its appeal for the public. Assessing the values of a site is an important practice. It provides a support for identifying the most suitable method of management and for justifying the public funds invested in the protection and enhancement of the concerned site. However, it is also a problematic issue because, being a “value” the expression of a social perception, it is not possible to provide an objective assessment of the values of a site. Nevertheless, the Dutch model, being based on guided and argumentative interpretations of empirical data, allows to generating a systematic framework that might be useful to compare the values associated to different sites and to plan their management.

Risk factors

The main risk factors affecting the underwater cultural heritage may be classified in two groups: the first includes those threats having a natural (physical, chemical and bacteriological) origin; the second embraces those human activities (treasure hunting, anchoring, fishing, etc.) which may, voluntarily or involuntarily, generate cases of looting, damaging or destruction. The entity of a threat can be evaluated estimating, on one side, the potential negative effects that it may generate and, on the other, the probability of its actual occurrence. This method has been successfully adopted by both English Heritage (UK) and Heritage Victoria Council (Australia) for organizing *ad hoc* preventive and curative measures.

Interests involved

The underwater cultural heritage management is structured upon a net of interacting interests (scientific research, conservation, protection, preservation *in situ*, promotion, access and socio-economic impact), which are also the expression of the main stakeholders operating in (or dealing with) this sector (general non-diving public, sport diving public, local population, commercial diving centers, other commercial operators, non-profit organizations, national government, UNESCO, underwater archaeologists, museums, universities and research institutes, agencies in charge to protect the underwater environment, commercial salvage companies). From a theoretical perspective, the interaction of these interests may generate positive outcomes, but also potential clashes (access vs. conservation, protection and preservation *in situ*). Therefore, on one side, it is necessary to assign them different priorities in order to regulate the decision-making process; on the other side, it is recognized that maximum efficiency can be achieved only creating a proper balance among the interests at stake.

A hierarchical pyramid of interests with a bottom-up impact is the figure that best symbolizes this complex and dynamic system of interrelations (see figure 4). Interpreting the 2001 UNESCO Convention as well as emerging international trends, protection occupies the top of this pyramid, followed (in order) by conservation, scientific research, preservation *in situ*, promotion, access and socio-economic impact. Focusing solely on the satisfaction of the requirements at the top of the pyramid (protection, conservation and scientific research), without considering the interests at its base (preservation *in situ*, promotion, access and socio-economic impact) make likely cause to the entire structure to collapse (it is likely, for example, that failing the goal to keep informed and aware the public, the funds dedicated to the management of this heritage will be gradually reduced, thus making unsustainable its protection and conservation). Rather, a sustainable management of underwater cultural heritage can be achieved only be keeping a proper equilibrium among all the different interests involved.

Stakeholders

The identification and classification of the groups of interest associated with the underwater cultural heritage is a difficult task because it runs the risk of an over simplification of real circumstances. Further studies

are required on this topic. Nevertheless, I may propose some general considerations.

First, the stakeholders have often divergent interests. Thus, the method chosen for the management of an underwater cultural site will be hardly able to satisfy all of them. In order to reduce the resulting discontent, it is essential to explain the decisions taken, adopting an approach of transparency and accountability.

Second, when a site is located close to the coast, the local population may play a key role in its protection and management. But the “local population” is an organic stakeholder enrolling different social groups (divers, fishermen, touristic operators, etc.). Therefore, assessing the local population as a whole is a complex task because different motivations (accessibility, protection of the local industries, enhancement of the touristic sector, etc.) must be considered.

Third, the protection of the underwater cultural heritage and the economic development of coastal zones are completely different activities. Nonetheless, they are inevitably linked by the necessity to operate on shared spaces. Moreover, fishing, oil and gas extraction, off-shore mining and coastal constructions are all activities that may incidentally cause damages to the underwater cultural heritage. Therefore, the negotiation and adoption of compromise solutions with these commercial operators (like, for example, the agreement signed by some Baltic states and the company Nord Stream AG) is a key aspect for the protection of the underwater cultural heritage.

Theoretical model

Moving from these considerations (definition, values, threats, interests and stakeholders), I designed a theoretical model (see figure 6) that aims to guide decision makers in the identification of the best method of management for each underwater cultural site through a structured set of simple passages (legal conditions, site identification, values assessment, risks assessment, preservation *in situ* feasibility). As an interpretative schematization of reality, this model suggests an ideal, but flexible sequence of steps: wherever required by the circumstances, it may be differently arranged in order to meet the specific conditions of each site. Nonetheless, sharing this model is important because it indicates which method of management seems most suitable considering the specific features of a site, and, it also may increase the

systematic harmonization of the decision-making process related to the underwater cultural heritage management.

2. Juridical considerations: how the 2001 UNESCO Convention has completely changed the international legal context

“It is a trait in the perversity of human nature to reject the obvious and the ready, for the far-distant and equivocal.”

Edgar Allan Poe, Loss of Breath

The second part of my thesis examines in details the international legal protection of the underwater cultural heritage and tries to identify the origins of the diverging current of interpretations.

The main international juridical tools dealing with the underwater cultural heritage are: the 1982 United Nations Convention on the Law of the Sea (UNCLOS), the Salvage Law and the Law of Finds, and the 2001 UNESCO Convention and its Annex.

The inadequacy of the UNCLOS

During the discussion of the UNCLOS the efforts were primarily focused on the development of an overall systems of legal duties and rights related to the use of sea. In this scenario the protection of the underwater cultural heritage was considered as a secondary goal. As a result, in the final text of the UNCLOS only two provisions (arts. 149 and 303) were dedicated to this topic.

Article 149 introduces a general obligation to protect “*all objects of an archaeological and historical nature found in the Area*”, but its vagueness hinders its efficacy. Article 303 is even more ambiguous. To begin with, it imposes a general obligation to “*protect objects of archaeological and historical nature found at sea*” and to cooperate for such purpose (par. 1). Moreover, it assumes, through a “legal fiction”, that the unauthorized removal of historical and archaeological objects from the contiguous zone of a coastal state constitutes a legal infringement (par. 2), but (paradoxically) it completely eludes any reference to their eventual damaging or destruction. Paragraph 3 further reduces the already low efficacy of these provisions disclaiming the law of salvage from the provisions of article 303 (“*nothing in this article affects the rights of*

identifiable owners, the law of salvage and other rules of admiralty, or laws and practices with respect to cultural exchanges"). Perhaps, revealing a consciousness of these limits and predicting the adoption of future (more advanced) dispositions on this topic, paragraph 4 was introduced. It establishes that *"this article is without prejudice to other international agreements and rules of international law regarding the protection of objects of an archaeological and historical nature"*.

Therefore, the principles adopted in the UNCLOS are too generic (art. 149 and art. 303, par. 1), outdated (art. 303, par. 3), ambiguous (art. 303, par. 2), incomplete (there are no specific dispositions about the protection of historical and archaeological objects in the Exclusive Economic Zone and on the continental shelf) and contradictory (art. 303 as a whole) to provide a valid international system for the protection of the underwater cultural heritage.

The inappropriateness of the Salvage Law and the Law of Finds

The Salvage Law system aims to favor the contractual or voluntary assistance of ships in impending danger with the aim to return the salvaged goods to the stream of commerce. In the first case the *salvor* obtains remuneration for his efforts whose amount is fixed in the contract. In the second, case he obtains a lien (but not title) on the property saved and he may claim to the competent Court a salvage reward for his successful efforts.

With the progressive development of deep-sea exploration technologies, a number of states have extended this system to the salvage of underwater cultural assets, considering them implicitly in peril due to the *"action of the elements"* and the subsequent *"risk of loss"* their monetary value⁷⁷³. This reinterpreted legal branch is called Historic Salvage Law.

⁷⁷³ The following sentences have been considered to assess the concept of peril in the historic salvage law: *Fort Myers Shell and Dredging Co., Inc. v. the Barge Nbc 512 and the Barge Nbc 540* (1968), *Treasure Salvors, Inc. and Armada Researchcorp v. the Unidentified Wrecked and Abandoned Sailing Vessel Believed to be the Nuestra Senora De Atocha* (1978) and *Bemis v. RMS Lusitania* (1996). Diverse interpretations of the concept of peril have been proposed in the cases: *Cobb Coin Co., Inc. v. Unidentified, Wrecked, Etc.* (1982), *Subaqueous Exploration v. Unidentified, Wrecked Vessel* (1983) and *Chance v. Certain Artifacts Found Salvaged* (1984). But, in general, the assumption that the underwater cultural heritage *in situ* is in implicit danger prevails in the admiralty law cases.

At international level, the salvage law regime is ultimately codified in the 1989 Salvage Law Convention of London. This convention implicitly recognizes the salvage of ancient shipwrecks in its scope. However, it grants to its states parties the possibility of reservation through article 30, paragraph 1 (d); it disclaims its application on *“warship or other non-commercial vessels owned or operated by a State and entitled, at the time of salvage operations, to sovereign immunity under general recognized principles of international law”* and it excludes the payment of reward for *“services rendered notwithstanding the express and reasonable prohibition of the owner or the master of the vessel”*.

In those circumstances in which the discovered shipwreck (and its cargo) has not an owner or it has been abandoned, some states apply the Law of Finds. According to this regime, the finder, who first takes actual or constructive possession of a shipwreck and expresses the will to own it in front of the competent Court, may directly acquire full title on it. Thus, in these cases a *“finders, keepers”* approach prevails.

A small number of states perceive the Salvage Law and the Law of Finds, and their application to the underwater cultural heritage, as principles of customary international law. Anyway, the majority of states maintain the view that they are simply expressions of domestic or conventional laws. In support of this last position there are several arguments. First, common law states and civil law states differently interpret the concept of salvage (as unique notion the firsts, while based on two-three distinct factors the others). Second, the Salvage Law regime has evolved assuming diverse national interpretations. Therefore, within the same group of common law states, one question of salvage law can receive different responses according to the state that judge it. Third, the application of the Salvage Law regime on the underwater cultural heritage is a relatively new practice and, in addition, it is performed only by few states. Thus, there are simply no data to claim that it is an affirmed custom at international level. Forth, at international level there is not a shared and affirmed practice to manage the abandonment issue and the private concepts of abandonment do not even exist in the domestic law of different states.

Most of the juridical cases concerning the application of Salvage Law and the Law of Finds on underwater cultural sites have been judged in the United States. The United States courts have not jurisdiction on wrecks located in international waters. However, when a *salvor* initiates

a suit bringing to a federal court an artifact recovered from a wreck site, such court acquires jurisdiction not only to dispose of that specific artifact, but also *in personam* jurisdiction to judge eventual disputes with other *salvors* and, constructive *in rem* jurisdiction, to dispose of all the other properties taken from that site (the *salvor's* possession and control over the salvaged object is view as a proof of constructive possession and control over the entire site). Therefore, a *salvor*, for example, might appeal to a U.S. court claiming salvage rights over a Spanish ancient wreck discovered in international waters, irrespective of the position of Spain about the application of the salvage regime on the underwater cultural heritage (this event occurred, for example, in the case law related to the *Nuestra Senora de las Mercedes*). For this reason, even if a state rejects the salvage law regime applied on the underwater cultural heritage, it may nevertheless be subject to its (undesired) effects.

Over the time, the adoption of the Salvage Law and the Law of Finds regimes have led to an invasive exploration of this heritage for private financial gain, producing, as side effects, the loss of valuable scientific information, the dispersion of archaeological finds and the complete destruction of some underwater cultural sites (like, for example, in the *Geldermalsen* case). The perception of an implicit status of peril in the submerged environments, the primacy of the private interest over the public one and the management of the recovered assets as mere commercial commodities are all factors that make this legal regime inappropriate for regulating the underwater cultural heritage.

However, the new trend emerging from the U.S. sentences passed in the last 20 years could anticipate a more encouraging scenario⁷⁷⁴. First, the states' title on sunken warships and other state non-commercial vessels (even ancient ones) may be overcome "only" in the presence of an express, clearly and convincing act of abandonment. Second, and valid also for sunken private vessels, when an owner comes before the court claiming his right, the long passage of time and the owner's

⁷⁷⁴ The following case laws have been analyzed in this section: *S.S. Central America* (1992, 1995), *Sea Hunt, Inc. v. Unidentified Vessels, Kingdom of Spain* (2000), *Marex Int'l, Inc. v. The Unidentified, Wrecked and Abandoned Vessel* (1997), *R.M.S. Titanic Inc. v. The Wrecked and Abandoned Vessel* (2010), *Joan M. Klein v. the Unidentified Wrecked and Abandoned Sailing Vessel, Etc.* (1985), *Odyssey Marine Exploration Inc. v. Unidentified, Shipwrecked Vessel* (2011). Moreover, the U.S. President Clinton W. J., *Statement on United States Policy for the Protection of Sunken Warship* (2001) has been also examined in order to evaluate the U.S. position on the sovereign immunity of sunken state vessels.

previous inaction may not be considered satisfactory proofs of implicit abandonment. Third, the owner of a vessel has the right to refuse an unwanted salvage. Therefore, a *salvor*, who proceeds against the owner's will, may be forced to return the recovered properties without being entitled to receive any salvage award. Fourth, in relation to ancient shipwrecks, the U.S. courts are starting to consider the adoption of scientific (archaeological) standards of investigation as an additional parameter for determining the salvage reward. These conditions are not enough (and neither aimed) to stop the commercial exploitation of the underwater cultural heritage. Nevertheless, they can significantly reduce the free-riders approach toward this heritage.

The system of protection introduced by the 2001 UNESCO Convention

The 2001 UNESCO Convention has been elaborated considering the disparity in the legal treatment of the underwater cultural heritage compared to the land based heritage and the necessity to face those emerging threats (such as, for example, the extensive commercial exploitation and the practice of souvenir-diving) affecting this heritage.

The 2001 UNESCO Convention aims to protect the underwater cultural heritage, wherever located, for the benefit of humanity. In order to accomplish this goal, this Convention imposes a series of strategic provisions.

First, it promotes cooperation among states parties (art. 2, par. 2) encouraging the negotiation of new bilateral, regional or multilateral agreements (art. 6), arranging a system of consultations, among the states with a verifiable cultural, historical or archaeological link, for the management of the relics located in the EEZ, on the continental shelf and in the Area (arts. 10 and 12), suggesting the organization of joint projects and development of information-sharing devices (art. 19), sustaining the collaboration in the provision of training and in the transfer of technology for activities related to the underwater cultural heritage (art. 21).

Second, it introduces a set of fundamental principles such as: the adoption of a first option preservation *in situ* policy (art. 2, par. 5); the request to embrace conservative and managerial methods able to ensure a long-term preservation to the underwater cultural heritage (art.2, par. 6); the prohibition to exploit this heritage for commercial purposes (art. 2, par. 7); the duty to respect any human remains (art. 2,

par. 9); and the responsibility to favor a non-intrusive public access to the underwater cultural heritage (art.2, par. 10).

Third, it establishes that any activity directed at the underwater cultural heritage, and based on the Salvage Law or the Law of Finds, must respect three cumulative conditions (they have to be authorized by competent authorities, performed in full conformity with this Convention and able to ensure maximum protection to any recovered artifacts), thus *de facto* excluding the application of these legal regimes.

Fourth, it provides a mechanism for the control and protection of the underwater cultural heritage in the different sea zones. In short, coastal states have the right to regulate and authorize activities on underwater cultural sites located in their internal waters, archipelagic waters and territorial sea (art. 7). Recurring to a “constructive ambiguity” this power is extended to their contiguous zone (art. 8). A reporting and notification system regulates the discovery and intended activities on the underwater cultural heritage located in the EEZ and on the continental shelf (art. 9), and in the Area (art. 11). Moreover, a “coordinating state” is appointed in order to harmonize the consultation, implement measures and issue authorizations related to the protection of the underwater cultural heritage in the EEZ, on the continental shelf and in the Area⁷⁷⁵. Finally, article 10, par. 4 adds that the coordinating state, acting on the behalf of all states parties, may take practicable measures to prevent an immediate danger affecting an underwater cultural site in the EEZ or on the continental shelf. These cases require rapid solutions that can hardly be achieved proceeding with the consultation process. Therefore, from a pragmatic viewpoint, this provision strengthens considerably the chance of successfully overcoming impending dangers.

Fifth, it imposes the adoption of administrative measures aimed to: prevent the entry into their territory and, dealing in, or the possession of illicitly exported and/or recovered underwater cultural assets (art. 14); prohibit the use of their territories to all those who intend to perform activities that are not in conformity with this Convention (art. 15); control that their nationals and vessel flying their flag do not

⁷⁷⁵ For the sites located in the EEZ and on the continental shelf the related coastal state is automatically elected as “coordinating state”. Differently, for the sites located in the Area, the “coordinating state” is appointed by the states that, on the base of a verifiable cultural, historical or archaeological link, have declared an interest in being consulted on how to protect the concerned site.

violate the principles of this Convention (art. 16); impose sanctions for violations (art. 17); and seize the underwater cultural heritage illegitimately recovered (art. 18).

Sixth, it creates *ad hoc* organizational bodies aimed to enhance (the Meeting of States Parties and the Scientific and Technical Advisory Body) and to supervise (the Secretariat for this Convention) the overall implementation of the 2001 UNESCO Convention.

Finally, it elaborates, in the Annex, a set of practical archaeological standards and ethical criteria aimed to regulate the activities directed at underwater cultural heritage and to guide archaeologists in the elaboration of a proper project design.

Main (unjustified) criticisms

Some states have enthusiastically embraced the 2001 UNESCO Convention, while others have raised criticisms. Three main unjustified critics have been moved to the 2001 UNESCO Convention.

First, some claim that it is excessively wide in its scope, being utopian to request to its states parties to protect all the underwater cultural sites. This criticism is logically comprehensible, if we consider the high number of underwater cultural sites in the world and the high costs to manage them. Nevertheless, it is based on an erroneous interpretation of the Convention. Article 2 paragraph 4 obliges the states parties to take “*all appropriate measures*” for the protection of the underwater cultural heritage, but “*using for this purpose the best practicable means at their disposal and in accordance with their capabilities*”. Therefore, first of all, among these measures there could be expensive practical actions (like, for example, the installation of underwater cameras), but also legislative and administrative solutions that may be implemented without costs (such as, for example, the imposition of sanctions for those who plunder, damage or destroy the underwater cultural heritage). Second, protecting all the underwater cultural sites does not mean to manage them in the same way. Considering the conditions of the sites under their jurisdiction, the related competent authorities will autonomously define how to best allocate the resources available for their protection and management. Third, the awareness of the limited resources available is the mover behind the 2001 UNESCO Convention encouragement of cooperation among states. Therefore, the Convention simply asks to its states parties to do their best in the protection of the

underwater cultural heritage. Miracles are appreciated, but not required.

According to the second criticism, the 2001 UNESCO Convention does not respect the sovereign immunity principle (assuming that the sovereign immunity is valid on ancient sunken state vessels). To be more precise, the “offending disposition” is article 7, paragraph 3 which states that, within their archipelagic waters and territorial sea, state parties *should inform* the relative flag state party about the eventual discovery of one of his sunken state vessels or aircrafts. The adoption of the verb “*should inform*” rather than “*shall inform*” has sparked an uproar. However, also this criticism results from a misunderstanding. Article 7 must be read in conformity with art. 2, par. 8 according to which the 2001 UNESCO Convention does not aim to modify the rules of international law and state practice related to the sovereign immunity issue. Therefore article 7 par. 3 does not prejudice already existing sovereign immunity rights (if any). On the contrary, it aims to encourage the cooperation and the spread of information among states.

Third, some states have criticized the 2001 UNESCO Convention claiming that it extends the coastal states’ sovereignty rights. The core of this dispute is article 10, paragraph 4, according to which in the Exclusive Economic Zone or on the Continental Shelf the coordinating state, in case of immediate danger to the underwater cultural heritage, may exceptionally act to prevent the damage without consulting the other states parties which have expressed an interest toward the management of such site. In their opinions, this provision changes the system of rights agreed with the 1982 Montego Bay Convention and it does not respect the (presumed) customary rights of the flag states to authorize or decline any operation directed to their own sunken state vessels and aircrafts. However, this criticism seems unfounded. First of all, these provisions must be read in accordance with article 3, which states that this Convention does not modify rights, jurisdiction and duties established in the international law, included the UNCLOS. Therefore, article 10, par. 4 neither introduce a new power for coastal states’ nor it amends any (eventual) flag states’ rights under general international law. Moreover, the same article 10 at par. 6 adds that the coordinating state has to act on the behalf of the states parties (flag states included) and that any such activity cannot constitute a basis for claiming new preferential or jurisdictional rights. Finally, the right of

the coordinating state to operate before consultations with other interested states parties is just a sporadic exception justified by circumstances of immediate danger. As disposed by article 10, paragraph 7, ordinarily *“no activity directed at State vessels and aircraft shall be conducted without the agreement of the flag State and the collaboration of the Coordinating State”*.

Strengths and weaknesses of the 2001 UNESCO Convention

Overall, the 2001 UNESCO Convention substantially increases the international protection and enhancement of the underwater cultural heritage and it adequately fills the previous legal void.

The basic principles, drawn up taking into account suggestions and concerns of underwater archaeologists, define a precise legal framework : the underwater cultural heritage must be protected in accordance with its context (first option preservation *in situ*), its archaeological and historical value (prohibition of commercial exploitation), its content (respect of human remains) and its audience (promoting a non-intrusive access). The principle of cooperation, rightly emphasized considering the often over-national feature of this heritage from a geographical (areas beyond the territorial sovereignty) and historical (ships that sailed from state to state) profile, encourages the collaboration among states with a verifiable cultural historical and archaeological link, the adoption of shared measures and the development of joint projects. The mechanisms of control and the administrative measures, on the whole, discourage activities performed contrary to the provision of this Convention and, at the same time, permit to intervene whereas situations of risk should occur.

But, the 2001 UNESCO Convention presents also some weaknesses.

First, the system elaborated in order to protect the underwater cultural heritage in the EEZ, on the continental shelf and in the Area is excessively articulated in some parts (reporting and notifications), while it is excessively vague in others (decisional mechanism within the consultations of the “interested states”). The risk is that these solutions may turn out to be excessively slow and, therefore, inefficient.

Second, the (excessive) use of ‘constructive ambiguities’ has generated a lack of transparency on some key-topics, without being able to guarantee, on the other side, a wide and rapid ratification of this Convention. Consequently, a good chance to clarify important issues

(such as, for example, the legal value of title and the sovereign immunity on sunken state vessels) has been probably lost.

Third, the effectiveness of the system built up through this Convention is directly proportional to the number of its states parties. As a result, the maximum efficacy is reached with a global adhesion to this Convention. Unfortunately, for the moment, a relevant, but still limited, number of states have ratified this Convention.

Differently, the Rules of the Annex, being clear, logic and well-balanced, have been internationally embraced as standard parameters for the underwater archaeological research even by those states which have not (yet) ratified the 2001 UNESCO Convention. Therefore, in virtue of its wide appreciation and practical efficacy, the Annex to the 2001 UNESCO Convention may surprisingly produce greater benefits for the effective protection of the underwater cultural heritage than the main text of the Convention itself.

As suggested by the Scientific and Technical Advisory Body, the next steps for improving the efficacy of this Convention are:

- to strengthen the effective implementation of the cooperation principle among States, experts, NGOs, etc.;
- to proceed with the harmonization, as far as possible, of certain strategic factors like, for example, the system for the diving licenses, the parameters considered in the national databases, the educational training of future underwater archaeologists and the variables used in the risks assessment models;
- to develop advanced studies on the sustainability of the underwater cultural heritage management (from the search of new funds for the archaeological investigation to the evaluation of the effective public utility generated by the underwater cultural heritage management).

Interpreting the will of the states

Comparing the level of ratifications of the three main systems dealing with the underwater cultural heritage (the 1982 UNCLOS Convention, the 1989 Salvage Law Convention and the 2001 UNESCO Convention) it is immediately evident that, to date, the UNCLOS is the sole convention that has reached an almost universal ratification (166 states). Differently, the Salvage Law Convention and the 2001 UNESCO Convention have been accessed respectively by 62 and 41 states.

Obviously, the fact that the UNCLOS was adopted several years before the other conventions and that it establishes a shared legal framework for regulating all the maritime issues as a whole, partially explain this result. Nonetheless, this data might also indicate that a “problem” has constrained the ratification of the 2001 UNESCO Convention.

Comparing the historical access to the UNCLOS and the 2001 UNESCO Convention (see figures 15 and 16) it emerges that, in the early years following its adoption, the 2001 UNESCO Convention experienced a period of stalemate (only 2 ratifications in the first three years), followed by a gradual increase of the ratifications in the successive years. The reasons that caused this “delay” in the entrance into force of the 2001 UNESCO Convention (achieved only in 2009) are not entirely clear, but it may be speculated that one or more of the following points have played a role:

- several States did not (and, probably, still do not) consider urgent the adoption of a convention specifically aimed to protect the underwater cultural heritage;
- the doubts expressed by some maritime powers (like, for example, France, Germany, Netherlands, Norway, Russian Federation, UK, USA, etc.) could also have conditioned other states, slowing down the overall ratification of this Convention;
- several states were probably waiting (or still are waiting) some clarifications about the “constructive ambiguities” adopted by the 2001 UNESCO Convention.

Presumably, it is the joint effects of these three factors that have delayed the entrance into force of the 2001 UNESCO Convention.

Moreover, analyzing the ratification of the 1989 Salvage Law Convention (see chart 17), it is clear that around half its states parties have also resorted to the reservation of art. 30. par. 1 (d) and/or they have successively ratified the 2001 UNESCO Convention. This data confirms that globally two different legal systems still regulate the activities directed to the underwater cultural heritage: the 2001 UNESCO Convention and the Salvage Law regime. While the first aims to protect the underwater cultural heritage for the public interest, the second protects the private interests considering the underwater cultural heritage as a commercial commodity.

The co-existence of these two conflicting international legal regimes linked to the underwater cultural heritage may be partially explained considering Merryman's distinction between "Market States" (the Netherlands, Scandinavian countries, UK, USA, etc.) and "Source States" (Egypt, Greece, Italy, Mexico etc.). "Market States" sustain the legal trade of cultural goods embracing a kind of "cultural internationalism", while "Source States" defend the preservation and management of these goods in the territory where they have been discovered, produced or with which they have the closer cultural link, thus supporting a sort of "cultural nationalism".

However, adapting this traditional distinction to the underwater cultural heritage scenario is tricky because most of these "Market States" are actually maritime powers and, consequently, they are (or are going to be) primarily 'Source States' for what concerns the underwater cultural heritage. As a result, the position of some "Market States" falters and becomes more equivocal once related to the underwater cultural heritage. Hence, their potential acceptance of the Historic Salvage Law is accompanied by an un-negotiable request that activities directed at sunken state vessels must be authorized by the respective flag states, but, despite a high appreciation towards its general principles and Rules, their ratification of the 2001 UNESCO Convention is obstructed by the (wrong) perception that it may limit the rights of the flag states extending, on the contrary, those of the coastal states.

Title and sovereign immunity of ancient sunken state vessels

The preservation of title and sovereign immunity on ancient sunken state vessels and aircrafts is a thorny and long-debated issue. Nonetheless, a clarification of this issue is important because it can impact both the application of the salvage law regime and the correct interpretation of certain provisions established by the 2001 UNESCO Convention.

Taking into consideration official national statements⁷⁷⁶, signed bilateral agreements⁷⁷⁷, and the relevant case laws judged in the last 20

⁷⁷⁶ The official statements of the following states have been considered: France, Germany, Japan, Russian Federation, Spain, UK, USA.

⁷⁷⁷ Among the agreements assessed: 1972 Agreement between the Netherlands and Australia concerning old Dutch Shipwrecks, 1989 Agreement between the Government of the United States of America and the Government of French Republic concerning the

years⁷⁷⁸, it is possible to affirm that: first, flag states' title over their sunken state vessels is maintained regardless of the passage of time or the place where they sank; second, this practice must be considered as a principle of customary international law. Instead, the absence of unequivocal data does not permit to affirm with certainty the existence of a customary international law concerning the endless sovereign immunity of sunken state vessels.

As principle of customary international law, the states' endless title over their sunken state vessels (unless abandoned) generates important consequences. First of all, historic salvage companies have to be authorized by the competent flag states for any activity directed to their sunken state vessels. Second, states have the legal duty (thus, not only a discretionary choice) to inform the relative flag state of the eventual discoveries of or intended activities on one of its sunken state vessels. Third, coastal states have exclusive rights to regulate and authorize activities directed at underwater cultural sites located in their territorial waters under the principle of territorial sovereignty. However, when those activities are characterized by an intrusive character and they are directed at foreign sunken state vessels, the consent of the flag state should be considered as a further binding requisite (with, presumably, few exceptions related to cases of imminent peril for the site itself or for the safety of the coastal state's territory). Nonetheless, in view of the ongoing debate on this issue, cooperation among states is still the best solution for preventing legal-political clashes on the management of sunken state vessels.

The clash between archaeologists and commercial salvage companies

The legitimacy of the commercial salvage companies operating on the underwater cultural heritage is still largely debated. Most of the archaeologists consider historic salvage simply as a more organized

wreck *CSS Alabama*, 1989 exchange of notes between South Africa and the United Kingdom concerning the *HMS Birkenhead*, 1997 Memorandum of Understanding between the Governments of Great Britain and Canada pertaining to the shipwrecks *HMS Erebus* and *HMS Terror*, Agreement between the Government of the United States of America and the Government of French Republic concerning the wreck *La Belle*, Agreement between Spain and United Kingdom concerning the *HMS Sussex* and the exchange of diplomatic notes between the Government of the United States of America and Japan about a Japanese two-man midget submarine discovered off Pearl Harbor.

⁷⁷⁸ The sentences examined are the following: *United States of America v. Richard Steinmetz* (1992), *Sea Hunt, Inc. v. Unidentified Vessels, Kingdom of Spain* (2000) and *Odyssey Marine Exploration Inc. v. Unidentified, Shipwrecked Vessel* (2011).

and costly form of treasure hunting. Nonetheless, in few states, the salvage of artifacts “lost” in the sea is still perceived as an activity that may provide both private and public socio-economic benefits.

Historic salvage companies and archaeologists have divergent views on a multitude of topics such as, for example, the concept of peril, the preservation *in situ*, how to provide a service for the public, the relevance of the archaeological context, etc. Anyway, the core of their contentions is primarily ethical.

The principal aim of the archaeologists is directed to scientific investigation and interpretation ancient sites. In their view, the trade of recovered goods is intolerable, being totally incompatible with their professional ethic. On the other side, this is exactly the main goal of historic salvage companies. These diverging aims, most of the time, produce also effects on the different methodological approaches undertaken by these two groups. Archaeologists, moved by relevant scientific questions, operate according to professional standards of investigation in order to preserve, as far as possible, the information that may be gathered from the analysis of a site. Differently, salvage operations are often performed without formulating, in advance, archaeological hypothesis. As a result of this approach, the structure of the explored sites is often compromised without achieving significant scientific results.

Therefore, despite the curious distinction between “trade goods” and “cultural artifacts” introduced by the Professional Shipwreck Explorers Association Code of Ethics, there are not (under these conditions) chances for negotiating a compromise between archaeologists and historic salvage companies.

The future of historic salvage companies

Considering the scarce financial results apparently achieved by historic salvage companies (analysis of the Odyssey Marine Exploration financial statements) and the progressive worldwide affirmation of the 2001 UNESCO Convention principles, three different scenarios can be imagined. First (breaking scenario), these companies could gradually turn their attention to other (potentially) more profitable activities (like, for example, deep-sea exploration for oil and gas companies, or salvage operations on modern shipwrecks). Second (continuative scenario), these companies will proceed in their (unprofitable) attempt to discover

and trade valuable wreck sites, perhaps being legally obliged to sale the recovered artifacts as unique collection (like in the case of the Titanic). Third (evolving scenario), these companies may completely renew their status, fully embracing in their activities the archaeological ethical and methodological approach.

3. Management analysis: the importance to assess the methods of management for compensating the lack of a “perfect solution”

“It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suite facts.”

Arthur Conan Doyle, Sherlock Holmes

The third part of my thesis explores and compares the main methods for the underwater cultural heritage management. Taking into account the absence of a “perfect method” able to guarantee the highest level of compliance for each interest (see figure 31), decision makers have the responsibility to identify, from time to time, the method that best suits the features of the considered site. Therefore, the decision to adopt one of the six methods here analyzed must be done with the knowledge of their potential benefits and structural limits.

Recovery and exhibition in “on-land” museum

The recovery and exhibition of underwater cultural sites in “on-land” museums should be mainly limited to those circumstances in which:

- the preservation *in situ* is not a practicable option due to conservative or protective reasons;
- an intrusive scientific investigation and recovery of the site may reveal essential information otherwise unachievable;
- the recovery and display in an “on-land” museum could considerably enhance the underwater cultural heritage.

To these days, the capacity of maritime museums to attract a wide audience is still much higher than that achievable by other methods of management that embrace a policy of preservation *in situ* (with the sole

possible exception of underwater museums)⁷⁷⁹. The case of the Vasa museum shows how a well-organized “on-land” museum that displays appealing underwater cultural heritage may achieve incredibly high levels of attendance (over 1.000.000 of visitors per year). Even if the outstanding success of the Vasa is probably due to a series of uncommon and hardly repeatable “fortunate circumstances” (outstanding level of preservation, a visitor-centered approach, local networks, careful national and international promotion, appealing story and excellent geographical dislocation), other international museums displaying recovered artifacts have also fascinated a more contained, but still high number of visitors (over 100.000 per year). Consequently, it is presumable that, for the near future, this method will continue to play a core role in the management of the underwater cultural heritage. Along with a wide accessibility, an “on-land” museum has the advantage of providing an advanced setting for scientific investigations, protection and active conservation of the underwater cultural heritage.

Nonetheless, the long process of conservation (50 years after her recovery and despite 17 years of treatment with PEG, the conservation of the Vasa is still an ongoing process) and the related high structural costs (for example, over €77 million have been invested for the recovery, conservation, display and management of the Mary Rose) significantly constrain the adoption of this method. As a result, the process of recovery, conservation and display of an entire wreck is not, in general, a cost-effective solution. Moreover, this method substantially sacrifices the preservation *in situ* of this heritage, breaking the link with its surrounding natural context. In my view, this does not imply that the fruition of the underwater cultural heritage exposed in a museum “on-land” is less authentic than the enjoyment of a site *in situ*. Anyway, certainly these are experiences that engage the viewers with different sensations and emotions.

Therefore, it is important to explore new techniques of conservation and display “on-land”. The recovery and exhibition in museum-aquarium (like, for example, that implemented for the Nanhai No. 1) could reduce the cost of conservation and provide the general public with an opportunity to observe underwater archaeologist directly

⁷⁷⁹ This result is also due to the fact that, despite the number of divers in the world is growing, they still represent a small percentage of the global population.

involved in an excavation process on a submerged relic. Therefore, even if there are still some problems to face (like, for example, long-term conservation of the shipwreck, water transparency, structural stability of the container used to recover and display the wreck, etc.), this solution should be further investigated. Moreover, considering the emerging international trend, the directors of maritime museums should reflect on how the traditional museum structures could also support the enhancement of sites still preserved *in situ* (for instance, exhibiting virtual reconstructions or ROVs live videos from these sites).

Underwater museums

Underwater museums are a fascinating idea because, as “on-land” museums, they are able to receive a huge number of visitors, but preserving, at the same time, the underwater cultural heritage *in situ*.

Unfortunately, this method is affected by too many constraints and risks for being regularly performed. First, sites should be close to the coast, relatively stable and solid enough to resist, for example, to the destructive force of waves, currents and tidal movements. Second, the construction of an underwater museum may represent a risk for the site and its surrounding natural environment, involving the use of heavy tools and dangerous materials close to (if not above) an underwater cultural site. Third, an underwater museum has to guarantee the absolute safety of the visitors both from internal and external fonts of perils (bombs, accidental collisions with ships, storms, water pressure, waves and currents, subsidence, earthquakes, etc.). Fourth, building an underwater museum inevitably implies extremely high operational costs (to date over \$30 million have been invested for the development of the Baiheliang Underwater Museum and \$140 million are the estimated costs for the construction of the Underwater Museum of Alexandria). Fifth, there might be problems of visualization (water visibility, artifacts and panoramic glasses cleaning, etc.), enjoyment (amount and quality of the artifacts still *in situ*) and authenticity (are the artifacts effectively exposed in their original place or in a recreated artificial context?). Finally, the integration of the underwater museum with the social, economic, environmental, architectonical and urban features of the city in which it will be built is an aspect that must be carefully assessed.

Despite these barriers, this solution should be, at least, taken into consideration for the management of those outstanding underwater

cultural sites whose enhancement may produce a significant contribution for the overall socio-economic development of an entire geographical area (apparently more than 300.000 people visited the Baiheliang Underwater Museum during its first year of opening).

For the moment this method has been exclusively associated to structural sites located close to the coast: an ancient hydrometric station for the Baiheliang Underwater Museum and the remains of a partially sunken ancient city for the Alexandria Underwater Museum's project. May a shipwreck be moved and exhibited within an underwater museum? Today it seems an unfeasible, unnecessary and unrealistic perspective. Tomorrow, perhaps, circumstances could change, making this solution more tempting and practically realizable. Finally, so far extremely high structural costs are one of the main reasons that make the adoption of this method rare. Therefore, the possibility of involving new donors should be evaluated and promoted. For instance, considering the recent construction of underwater restaurants and hotels around the world, the opportunity to sign transnational agreements with private companies in order to develop multifunctional structures (underwater museums with restaurants and hotels) could be a costs efficient solution in need of further investigation.

Underwater archaeological parks

Instituting an underwater archaeological park has the advantage of promoting a reasonable balance between the different interests at stake. The creation of an underwater archaeological park should be mainly considered for those sites that are:

- aesthetically enjoyable (from an architectonical, artistic or biological viewpoint);
- conceptually understandable and appreciable (from an historical and archaeological perspective);
- easily accessible (neither too far from the coast, isolated areas nor excessive depth);
- stable enough to tolerate a growing number of visitors;
- legally sustainable (there are not pending questions related to its ownership or jurisdiction);
- located (possibly) in an area with favorable environmental conditions (like, for example, clear, shallow and warm waters).

On the contrary the organization of underwater archaeological parks seems unsuitable for those sites that:

- are excessively fragile or cannot be left exposed for conservative reasons;
- are hardly aesthetically appreciable by visitors (because totally covered by sediments or excessively damaged);
- are highly relevant for scientific investigations, but whose features are not appealing the public;
- are still legally contended;
- are unsafe for divers.

Even if this method is not perfectly suitable to all circumstances, its ratio of benefits-costs is usually far greater than alternative options currently available. A further aspect in favor of this method relates to the possible solution of its main weaknesses (protection in the case of free accessible parks and problematic consumption for non-divers): these issues can be at least partially overcome with targeted investments. Promotion of public and specialized educational initiatives, adoption of effective and enforceable legal measures, and installation of protective physical tools (like, for example, cages, underwater cameras, anti-intruder sonar systems' devices, etc.) are all measures whose use may drastically reduce the risk of looting and damaging. In addition, the Florida's Underwater Archaeological Preserve shows that the involvement of local communities in the decision-making process may produce an automatism able to sustain the protection of the freely accessible underwater archaeological parks. Regarding non-divers accessibility, it is possible to strengthen those tools that are already available (such as, for example, glass-bottomed boats, snorkeling trails, remote users' underwater cameras, virtual reconstructions, etc.) and to think about new solutions for enabling the involvement of non-divers in sites managed *in situ*. The remaining challenge is the count of the number of divers visiting the freely accessible underwater archaeological parks. The easiest and more logical solution seems to sign cooperative agreements with local diving centers. Competent authorities may require them to provide, periodically (or, at least, annually), data about the number of visits (and, eventually, of visitors) who accessed an underwater archaeological park through their facilities. Obviously this solution does not provide a precise attendance to a site (missing all those

moving by their own boats), but at least it offers a good estimation of the overall scenario.

Restricted access sites

A restricted access site is a method that could result appropriate mainly in three circumstances:

- when there are evident and substantial risks of looting and damaging;
- when the preservation of the natural environment surrounding a site may be significantly menaced;
- when the safety of eventual sport divers could be in peril (due, for example, to explosive or other dangerous materials).

This method increases the level of protection of a site reducing the risk of looting, damaging and destruction. Moreover, whether required by environmental threats, this solution can be rapidly strengthened through the adoption of techniques of conservation *in situ*. On the other side, it significantly restricts the public access and, as a result, it considerably limits the potential socio-economic impact of a site. For this reason the implementation of this method should go along with three countermeasures: first, a communication campaign aimed to publicly explain the reasons that led to the adoption of this choice; second, the use of this method as a temporary solution (waiting, for instance, to collect the indispensable resources for excavating a site); third, the adoption of a policy aimed to encourage the accessibility of a restricted access site as soon as there are safety conditions for the divers, the natural environment and the site itself (like, for example, in the *Coronation*, *Hazardous* and *HMS Colossus* wrecks). The Protected Wreck Sites in the UK demonstrate that, when these measures are promptly implemented, this method of management may turn out to be highly reliable (in the UK the number of sites assessed at high-medium risk significantly decreased).

Reburial or covering sites

The reburial or covering is the only method specifically aimed to provide an active conservation *in situ* of the underwater cultural heritage. The (relatively) low costs of implementation (in the scale of thousands of dollars) and the excellent results achieved in terms of conservation have progressively made particularly popular this

method among underwater archaeologists. All the techniques of conservation *in situ* that are currently available (with the sole exception of the use of anodes for the metals) aim to completely cover (with sandbags, geotextile, etc.) the treated sites in order to reproduce a favorable anaerobic context. Positively, this condition favors the long-term preservation of the sites (especially those with organic materials) slowing down the degradation process, reducing the impact of natural threats (abrasion, woodborers activities, etc.) and, in some cases, protecting them from other perils like, for example, anchoring and fishing nets. Negatively, this method strongly reduces the public chances to aesthetically enjoy these sites. Therefore, the adoption of this practice for the management of the underwater cultural heritage should not be over-used. As for the restricted access sites, this method must be monitored on a regular basis or whenever there are justified suspects that the stability could be in peril (recurring, for example, to divers' direct observations and measurements, sampling, geophysical survey and data loggers). Moreover, in order to avoid misunderstandings or adverse reactions, it is very important to explain to the public the reasons that led to choose this method. The BZN 10 case shows that adopting an efficacious communication system it is possible to get the precious support of local communities. Nonetheless, some information (such as, for example, the precise location of the reburied sites) may be kept confidential in order to prevent undesirable episodes of looting or damaging. On the base of collected data, this method should be primarily considered as a pre-excavation solution for the conservation of those sites characterized by these three cumulative conditions:

- they are considered by underwater archaeologists of high potential for the historical and archaeological research, presenting a substantial grade of preservation and uniqueness;
- they are threatened by natural forces (physical, chemical or biological) or by human activities such as, for example, anchoring or trawling;
- their recovery, at present, is undesirable (preservation for the future generations) or unpractical (lack of sufficient resources).

In few circumstances, this method has also been used for the storage *in situ* of post-excavated site. Certainly, this practice should be also taken into account, although studies on its long-term reliability should be

further integrated. At the same time, this solution (and other related circumstances) forces a reinterpretation of the concept of preservation *in situ* once referred to the practical management of the underwater cultural heritage (is it still possible to speak about a preservation *in situ* approach when a site is intrusively excavated and then conserved underwater?).

Unmanaged free access sites

The unmanaged and freely accessible underwater cultural heritage (“no-action option”) is the simplest and cheapest solution currently available. Nevertheless, this choice presents several weak points. First of all, it is scarcely efficient from a protective viewpoint: the sites, being totally unmanaged, risk to be looted, damaged or destroyed. Second, divers have the opportunity to access these sites, but it remains to be considered the grade of appreciation and comprehension without any interpretative assistance. Finally, non-divers cannot access these sites and there are no substantial socio-economic benefits due to the lack of management. Therefore, on the base of these general considerations, this “method” should be mostly considered as a fallback choice, justified by the absence of adequate resources for the active management of these sites. In any case, its adoption on fragile, unstable or movable sites should be excluded.

Comparing the methods of management

This dissertation shows that each method of management has its own advantages and disadvantages. Being aware of these structural benefits and limits is a core condition for evaluating which is the most suitable and sustainable method considering the specific features of each site. As stated by Manders “*it is always a matter of balancing the costs, the effects of protective measures, and the importance of the site*”⁷⁸⁰.

Some specific limits can be overcome by an harmonization of different methods of management through “intermediate solutions” like, for example, restricted access sites adopting techniques of conservation *in situ*, underwater archaeological parks applying policies of access control or “on-land” museums exhibiting wrecks still conserved underwater. Anyway, unfortunately, also this solution does not seem able to introduce a “perfect method of management”.

⁷⁸⁰ Manders M., “In Situ preservation: ‘the preferred option’”, *Museum International*, Vol. 60, Issue 4, February 2009, p. 34.

Overall, under a national perspective, the most comprehensive and cost-effective way out could be to point to diversification. This approach allows a fair distribution of the available resources consistent with the significance-necessity of each site. However, this solution, in order to maximize its performances, presupposes a full awareness of the number and features of the underwater cultural sites that must be managed. Thus, it creates a need to direct an important amount of the annual resources to complete the mapping of underwater cultural heritage.

4. Final remarks

“The sea is only the embodiment of a supernatural and wonderful experience. It is nothing but love and emotion; it is the ‘Living Infinite’”.

Jules Verne, *Twenty Thousand Leagues Under the Sea*

As a final note, I would like to highlight my original contribution to research and point out some area of research that should be further explored in the future.

This dissertation explores the underwater cultural heritage from a theoretical, legal and managerial perspective. This multidisciplinary approach, quite uncommon in the published literature, draws a clearer picture and perception of the entire system as well as a more precise comprehension of related problems.

Second, the protection and management of the underwater cultural heritage is a complex issue. De-structuring the problem in its basic components (definitions, values, threats, interests, stakeholders), chapter one provides to scholars, archaeologists and resource managers a comprehensive method for its interpretation as well as an (original) theoretical model that may also serve as a guide for implementation.

Third, comparing the levels of ratification of the main international convention dealing with the underwater cultural heritage, this dissertation emphasized an “uncommon” delay in the ratification of the 2001 UNESCO Convention probably caused by three joint factors: an unperceived urgency to protect the underwater cultural heritage, a “cautious approach” conditioned by the doubts expressed by some

maritime powers and a diffused wish to get more clarifications about the “constructive ambiguities” adopted by the 2001 UNESCO Convention. Moreover, evaluating the ratification of the 1989 Salvage Law Convention, this thesis emphasized the coexistence of two divergent regimes dealing with the underwater cultural heritage. Merryman’s distinction between “Market States” and “Source States” partially explain this legal scenario. But most of the “Market States” are also maritime powers and this may explain their ambiguous approach when dealing with the underwater cultural heritage (acceptance of the salvage regime, but assertion of sovereign immunity over ancient sunken state vessels).

Fourth, the issue related to the title and sovereign immunity of sunken state vessels is here comprehensively analyzed. The author’s theory is that the title over sunken state vessel is conserved regardless the passage of time or its geographical location. On the contrary, up to now, there are not enough consistent data to state (but neither to deny) with certainty that, the customary international law endorses a principle of “infinite sovereign immunity” for the sunken state vessels. Nonetheless, as already explained, the preservation of title over the time produces significant effects on the application of both the Salvage Law and Law of Finds, as well as on the interpretation of the 2001 UNESCO Convention.

Fifth, the clash between archaeologists and historic salvage companies is a topic already widely debated. However, this dissertation further contributes to the analysis of this issue, examining in-depth their diverse interpretation of the concept of peril and emphasizing their ethical incompatibility. Moreover, on the base of the scarce financial results observed analyzing the financial statement of a modern salvage company and the progressive dissemination of the 2001 UNESCO Convention principles, my thesis suggests three alternative fates for the historic salvage companies. : a continuative scenario in which they will continue to operate on the underwater cultural heritage, but in a more and more restrictive context; a breaking scenario, in which these companies will decide to abandon the salvage of the underwater cultural heritage in order to embrace more profitable activities; and an evolving scenario, in which they will renounce to the commercial exploitation of the underwater cultural heritage and rather embrace the archaeological principles of investigation as private archaeological companies.

Finally, my attempt to compare the different methods used in the management of the underwater cultural heritage is without precedent. For a long time this topic was neglected, but in the last years the concern toward the management of the underwater cultural heritage has finally grown and some studies on this issue have started to be published. This chapter provides an exhaustive analysis of the benefits and limits of the main methods of management. Nonetheless, the (partial) lack of core data (overall costs, effective number of people, etc.) has constrained the in-depth analysis of certain aspects. Each method has been assessed focusing the study on one main case and making only specific references to others. Therefore, this thesis does not presume to put an end to this matter. It simply attempts to stimulate a more dynamic debate on this issue providing a foundation on which to develop a more detailed and precise analysis.

After the experience gained through my studies and the difficulties faced writing this dissertation, it seems evident to me that, in the next future, these topics should be further explored.

First, the different techniques adopted, at national level, for the assessment of the values and threats affecting the underwater cultural heritage should be examined more in detail and, possibly, compared in order to improve their efficacy and, possibly, harmonize them at international level.

Second, a deeper stakeholders analysis is required. In particular, it is important to assess how to realistically involve NGOs and the local population in the decision making process and how to convince the private sector to invest resources for archaeological activities directed at the underwater cultural heritage (without incurring into a commercial exploitation of this heritage).

Third, the heated debate about title and sovereign immunity of ancient sunken state vessel is doomed to last in time. Therefore, it should be constantly updated taking into account any new sentences applying the salvage law or the law of finds as well as the negotiation of relevant bilateral agreements or the exchanges of diplomatic notes among states.

Fourth, this dissertation evaluates the financial statement of one of the major historic salvage company in the world (Odyssey Marine Exploration). It could be interesting to extend this analysis comparing

these economic results with those achieved by other historic salvage companies.

Fifth, as suggested by Scott, in a period of economic crises *"it is incumbent on the museum sector to be able to express its worth from a position of strength and to defend that position"*⁷⁸¹. This consideration can actually be extended to all methods aimed to manage the underwater cultural heritage. To date, the socio-economic benefits related to the management of the underwater cultural heritage have been only superficially analyzed. This dissertation presents some considerations on this issue, but further cost-benefits analysis are required.

Concluding, this research was as difficult as fascinating. The protection and management of the underwater cultural heritage is a complex issue in all respects (theoretical, legal and managerial viewpoint). Several questions call for further studies. In the meanwhile, I hope my reflections may be helpful to all those who have the difficult task of managing the underwater cultural heritage.

⁷⁸¹ Scott C. A., "Exploring the evidence base for museum value", *Museum Management and Curatorship*, Vol. 24, Issue 3, 2009, p. 208.

SELECTED BIBLIOGRAPHY

International conventions, draft conventions and ICOMOS charter (ordered by year)⁷⁸²

United Nations, United Nations Convention on the Law of the Sea (UNCLOS), Montego Bay, 1982, ref. http://www.un.org/Depts/los/convention_agreements/texts/unclos/closindx.htm;

International Maritime Organization (IMO), International Convention on Salvage, London, 1989, ref. <http://www.jus.uio.no/lm/imo.salvage.convention.1989/doc.html>;

International Law Association (ILA), Draft Convention on the Protection of the Underwater Cultural Heritage, Buenos Aires, 1994. The official text is available in O'Keefe P. J., *Shipwrecked Heritage: A Commentary on the UNESCO Convention on Underwater Cultural Heritage*, Institute of Art and Law (IAL), 2002, pp. 192 - 197;

International Council on Monuments and Sites (ICOMOS), Charter on the Protection and Management of the Underwater Cultural Heritage, Sofia, 1996, ref. http://www.international.icomos.org/under_e.htm;

UNESCO, Convention on the Protection of the Underwater Cultural Heritage, Paris, 2001, ref. <http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/2001-convention/official-text/>;

UNESCO, Annex to the Convention on the Protection of the Underwater Cultural Heritage, Paris, 2001, ref. <http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/2001-convention/official-text/>;

UNESCO, Manual for activities directed at Underwater Cultural Heritage, Paris, 2011, ref. www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/unesco-manual-for-activities-directed-at-underwater-cultural-heritage/unesco-manual/;

⁷⁸² Last access to these documents: 09/11/2011.

Reports, Rules and Statutes of the Meeting of States Parties and The Scientific and Technical Advisory Body (ordered by year)⁷⁸³

UNESCO, First Session of the Meeting of States Parties – Final Report, Paris, 2009, ref.
<http://unesdoc.unesco.org/images/0018/001853/185392E.pdf>;

UNESCO, Rules of Procedure of the Meeting of States Parties to the Convention on the Protection of the Underwater Cultural Heritage, Paris, 2009, ref.
<http://unesdoc.unesco.org/images/0018/001821/182129E.pdf>;

UNESCO, Second Session of the Meeting of States Parties – Final Report, Paris, 2009, ref.
<http://unesdoc.unesco.org/images/0018/001869/186940E.pdf>;

UNESCO, Statutes of the Scientific and Technical Advisory Body to the Meeting of States Parties to the Convention on the Protection of the Underwater Cultural Heritage, Paris, 2009, ref.
<http://unesdoc.unesco.org/images/0018/001821/182130E.pdf>;

UNESCO, First Meeting of the Scientific and Technical Advisory Body – Resolutions and Recommendations, Cartagena, 2010, ref.
<http://unesdoc.unesco.org/images/0018/001882/188291e.pdf>;

UNESCO, Third Session of the Meeting of States Parties – Final Report, Paris, 2011, ref.
<http://unesdoc.unesco.org/images/0019/001926/192642E.pdf>;

UNESCO, Second Meeting of the Scientific and Technical Advisory Body – Final Report & Recommendations and Resolutions, Paris, 2011, ref. <http://unesdoc.unesco.org/images/0019/001923/192355E.pdf>;

UNESCO, Third Meeting of the Scientific and Technical Advisory Body – Report, Recommendations and Resolutions, Paris, 2012, ref. <http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CLT/pdf/Final%20Report%20and%20Recommendations%20EN.pdf>;

⁷⁸³ Last access to these documents: 25/06/2012.

Bilateral, regional and international agreements (ordered by year)⁷⁸⁴

Australia and The Netherlands, Agreement between The Netherlands and Australia Concerning Old Dutch Shipwrecks, N.D., 1972, ref. http://www.austlii.edu.au/au/legis/cth/consol_act/hsa1976235/sch1.html;

South Africa and United Kingdom, Exchange of notes between South Africa and the United Kingdom Concerning the Regulation of the Term of the Settlement of the Salvaging of the Wreck of *HMS Birkenhead*, Pretoria, 1989. The text of the notes are available in Garabello R. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Before and After the 2001 UNESCO Convention*, Publications on Ocean Development, Vol. 41, Martinus Nijhoff Publishers, Leiden, 2003, pp. 259-260;

United States of America and French Republic, Agreement between the Government of the United States of America and the Government of the French Republic concerning the wreck of the *CSS Alabama*, 1989. The text of the agreement is available in United Nations, Division for Ocean Affairs and the Law of the Sea Office of Legal Affairs, Law of the Sea Bulletin, No. 20, March 1992, ref. http://www.un.org/Depts/los/doalos_publications/LOSBulletins/bulletinpdf/bulE20.pdf;

Great Britain and Canada, Memorandum of Understanding between the Governments of Great Britain and Canada pertaining to the Shipwrecks *HMS Erebus* and *HMS Terror*, N.D., 1997. The text of the memorandum is available in Garabello R. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Before and After the 2001 UNESCO Convention*, Publications on Ocean Development, Vol. 41, Martinus Nijhoff Publishers, Leiden, 2003, pp. 263-264;

Canada, France, United Kingdom and United States of America, Agreement Concerning the Shipwrecked Vessel *RMS Titanic*, London, 2000, ref. <http://www.gc.noaa.gov/documents/titanic-agreement.pdf>;

United States of America and French Republic, Accord entre le Gouvernement de la République française et le Gouvernement des États-Unis d'Amérique concernant l'épave de *La Belle*, Washington, 2003. The official text of the agreement is available in *Journal Officiel de la*

⁷⁸⁴ Last access to these documents: 26/07/2012.

République Française, 24 Juln 2003, ref. http://legifrance.gouv.fr/jopdf/common/jo_pdf.jsp?numJO=0&dateJO=20030624&numTexte=5&pageDebut=10560&pageFin=10561;

Spain and United Kingdom, Acuerdo entre España y Reino Unido para realizar una prospección subacuática para la identificación del pecio del HMS *Sussex*, 2007, ref. http://shipwreck.net/official_mfa_release.pdf;

National legislations (ordered by state and year)⁷⁸⁵

China, Regulations of the People's Republic of China Concerning the Administration of the Work for the Protection of Underwater Cultural Relics, 20 October 1989, in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneo*, Vol. 4, Massa Editore, Sep. 2004;

China, Law of the People's Republic of China on Protection of Cultural Relics (order of the President No. 76, amended on 28 October 2002), 2002, ref. http://english.gov.cn/laws/2005-10/09/content_75322.htm;

Egypt, Law on the Protection of Antiquities (Law No. 117 of 1983), unofficial translation prepared by UNESCO, 1983, ref. <http://www.cemml.colostate.edu/cultural/09476/pdf/egyptian-law-117-of-1983.pdf>;

Egypt, Law on the Protection of Antiquities (Law No. 117 of 1983) as amended with the law No. 3 of 2010, 2010, ref. http://www.sca-egypt.org/eng/pdfs/RST_law.pdf;

Italy, Codice dei beni culturali e del paesaggio, 2008, ref. http://www.beniculturali.it/mibac/multimedia/MiBAC/documents/1240240310779_codice2008.pdf;

Italy, Legge n°157 - Ratifica ed esecuzione della Convenzione sulla protezione del patrimonio culturale subacqueo, con Allegato, adottata a Parigi il 2 Novembre 2001, e norme di adeguamento dell'ordinamento interno, Gazzetta Ufficiale n° 262 del 10 Novembre 2009, ref. <http://www.parlamento.it/parlam/leggi/091571.htm>;

⁷⁸⁵ Last access to these documents: 25/10/2012.

Netherlands, Monuments and Historic Building Act (Monumentenwet), unofficial English translation, 1988, ref. <http://www.eui.eu/Projects/InternationalArtHeritageLaw/Documents/NationalLegislation/Netherlands/monumentshistoricbuildingsact.pdf>;

Sweden, Heritage Conservation Act (1988:950) and SFS Amendments (2002:1090), 1988, UNESCO unofficial translation, ref. http://www.unesco.org/culture/natlaws/media/pdf/sweden/se_or_dincehertgeconservat1998_engtno.pdf;

United Kingdom, Protection of Wrecks Act, Chapter 3, 1973, ref. <http://www.english-heritage.org.uk/content/publications/publicationsNew/protection-of-wrecks-act-1973/protectionofwrecksact1973.pdf>;

United Kingdom, Ancient Monuments and Archaeological Areas Act, Chapter 46, 1979, ref. http://www.legislation.gov.uk/ukpga/1979/46/pdfs/ukpga_19790046_en.pdf;

United Kingdom, Protection of Military Remains Act, Chapter 35, 1986, ref. http://portal.unesco.org/pv_obj_cache/pv_obj_id_52647842ACF6181536900C1D6C0B4FE5C2870000/filename/Protection+of+Military+Remains+Act+1986.pdf;

United Kingdom, Merchant Shipping Act, 1995, ref. <http://www.legislation.gov.uk/ukpga/1995/21/contents>;

United Kingdom, Amendments National Heritage Act, 2002, ref. <http://www.legislation.gov.uk/ukpga/2002/14/section/2?view=plain>;

United States, Constitution, Philadelphia, 1787, ref. <http://www.usconstitution.net/conts.pdf>, last access 29/02/2012;

United States, Marine Protection, Research, and Sanctuaries Act (MPRSA), 1972, ref. <http://epw.senate.gov/mprsa72.pdf>;

United States, Abandoned Shipwreck Act (ASA), 1987, ref. <http://eca.state.gov/icpp/100-298.html>;

United States, Foreign Sovereign Immunities Act, (as amended) 1997, ref.
<http://www.uchastings.edu/faculty-administration/faculty/paul/class-website/docs/ForeignSovereignImmunitiesAct.pdf>;

United States, Federal Register, Vol. 69, No. 24, 5 February 2004, ref.
<http://www.gpo.gov/fdsys/pkg/FR-2004-02-05/pdf/FR-2004-02-05.pdf>;

United States, Florida Statutes, 2012, ref.
<http://www.leg.state.fl.us/Statutes/index.cfm?Mode=View%20Statutes&Submenu=1&Tab=statutes&CFID=270301322&CFTOKEN=42949134>;

Sentences of United States Courts on cases related to the salvage law and the law of finds (ordered by year)⁷⁸⁶

United States Court of Appeals for the Fifth Circuit, *Fort Myers Shell and Dredging Co., Inc. v. the Barge Nbc 512 and the Barge Nbc 540*, case No. 404 F.2d 137, 27 November 1968, ref.
<http://law.justia.com/cases/federal/appellate-courts/F2/404/137/225067/#fn2>;

United States Court of Appeals for the Fifth Circuit, *Treasure Salvors, Inc. and Armada Researchcorp. v. the Unidentified Wrecked and Abandoned Sailing Vessel Believed to be the Nuestra Senora De Atocha*, case No. 569 F.2d 330, 13 March 1978, ref.
<http://law.justia.com/cases/federal/appellate-courts/F2/569/330/35219/>;

United States District Court, S.D. New York, *Hener v. United States*, 525 F.Supp. 350, Case No. 81 Civ. 3857, 15 October 1981, ref.
http://www.leagle.com/xmlResult.aspx?xmlDoc=1981875525FSupp350_1822.xml&docbase=CSLWAR1-1950-1985;

United States District Court, S.D. Florida, *Cobb Coin Co., Inc. v. Unidentified, Wrecked, Etc.*, 549 F.Supp. 540, case No. 79-8266-Civ-JLK, 31 August 1982, ref.
http://174.123.24.242/leagle/xmlResult.aspx?page=1&xmlDoc=19821089549FSupp540_1996.xml&docbase=CSLWAR1-1950-1985&SizeDisp=7;

⁷⁸⁶ Last access to these documents: 08/08/2012.

United States District Court, S.D. Florida, *Klein v. Unident. Wrecked & Aban. Sailing Vessel*, case No. 79-4627-Civ-CA, 568 F.Supp. 1562, 17 August 1983, ref.

http://www.leagle.com/xmlResult.aspx?xmldoc=19832130568FSupp1562_11890.xml&docbase=CSLWAR1-1950-1985;

United States District Court, S.D. Maryland, *Subaqueous Exploration v. Unidentified, Wrecked Vessel*, Civ. A. Nos. 81-51, 81-52, 81-53, 579 F., 21 December 1983, ref.

http://www.leagle.com/xmlResult.aspx?xmldoc=19831174577FSupp597_11072.xml&docbase=CSLWAR1-1950-1985;

United States District Court, S.D. Georgia, *Chance v. Certain Artifacts Found and Salvaged*, 606 F.Supp. 801, case No. CV483-391, a6 August 1984, ref.

http://www.leagle.com/xmlResult.aspx?xmldoc=19841407606FSupp801_11262.xml&docbase=CSLWAR1-1950-1985;

United States Court of Appeals for the Eleventh Circuit, *Joan M. Klein v. the Unidentified Wrecked and Abandoned Sailing Vessel, Etc.*, case No. 758 F.2d 1511, 29 April 1985, ref.

<http://law.justia.com/cases/federal/appellate-courts/F2/758/1511/63777/>;

United States Court of Appeals for the Third Circuit, *United States of America v. Richard Steinmetz*, case No. 973 F.2d 212, 7 April 1992, ref.

<http://law.justia.com/cases/federal/appellate-courts/F2/973/212/386226/>;

United States Court of Appeals for the Fourth Circuit, case No. 974 F.2d 450, 12 November 1992, ref.

<http://law.justia.com/cases/federal/appellate-courts/F2/974/450/437811/>;

United States Court of Appeals for the Fourth Circuit, case No. 56 F.3d 556, 14 June 1995, ref. <http://law.justia.com/cases/federal/appellate-courts/F3/56/556/624430/>;

United States Court of Appeals for the Fourth Circuit, *Bemis v. RMS Lusitania*, case No. 95-2057, 17 September 1996, ref.

<http://pacer.ca4.uscourts.gov/opinion.pdf/952057.U.pdf>;

United States Court of Appeals for the Ninth Circuit, *Deep Sea Research, Inc. v. Brother Jonathan*, case No. 102 F.3d 379, 4 December 1996, ref. <http://law.justia.com/cases/federal/appellate-courts/F3/102/379/637532/>;

United States District Court, S.D. Georgia, *Marex Int'l, Inc. v. The Unidentified, Wrecked and Abandoned Vessel*, case No. CV 496-194, 952 F.Supp. 825, 13 January 1997, ref. [http://www.leagle.com/xmlResult.aspx?page=4&xmldoc=19971777952FSupp825_11645.xml&docbase=CSLWAR2-1986-2006&SizeDisp=7](http://www.leagle.com/xmlResult.aspx?page=4&xmldoc=19971777952FSupp825_11645.xml&docbase=CSLWAR2-1986-2006&SizeDisp=7;);

United States Court of Appeals for the Fourth Circuit, *R.M.S. Titanic, Inc. v. Haver*, case No. 98-1934 (CA-93-902-N), 28 April 1999, ref. <http://pacer.ca4.uscourts.gov/opinion.pdf/981934.P.pdf>;

United States Court of Appeals for the Ninth Circuit, *Yukon Recovery, L.L.C. v. Certain Abandoned Property*, case No. 205 F.3d 1189, 7 March 2000, ref. <http://law.justia.com/cases/federal/appellate-courts/F3/205/1189/559188/>;

United States Court of Appeals for the Fourth Circuit, *Sea Hunt, Inc. v. Unidentified Vessels, Kingdom of Spain*, case No. 99-2035 and 99-2036, 21 July 2000, ref. <http://pacer.ca4.uscourts.gov/opinion.pdf/992035.P.pdf>;

United States Court of Appeals for the Fourth Circuit, *R.M.S. Titanic, Inc. v. The Wrecked and Abandoned Vessel*, case No. 01-2227 (CA-93-902-N), 12 April 2002, ref. <http://pacer.ca4.uscourts.gov/opinion.pdf/012227.P.pdf>;

United States Court of Appeals for the Fourth Circuit, *R.M.S. Titanic, Inc. v. The Wrecked and Abandoned Vessel*, case No. 04-1933 (CA-93-902-N), 31 January 2006, ref. <http://pacer.ca4.uscourts.gov/opinion.pdf/041933.P.pdf>;

United States District Court, E.D. Virginia, *R.M.S. Titanic Inc. v. The Wrecked and Abandoned Vessel*, case No. 2:93cv902, 12 August 2010, ref. <http://www.prxi.com/pdf/081310B.pdf>;

United States District Court, E.D. Virginia, *R.M.S. Titanic Inc. v. The Wrecked and Abandoned Vessel, Exhibit A: Revised Covenants and Conditions*, 12 August 2010, ref. http://www.gc.noaa.gov/documents/gcil_covenants_ex_a.pdf;

United States Court of Appeals for the Eleventh Circuit, *Odyssey Marine Exploration, Inc. v. Unidentified Shipwrecked Vessel, Kingdom of Spain*, case No. 10-10269, 21 September 2011, ref. <http://www.ca11.uscourts.gov/opinions/ops/201010269.pdf>;

United States District Court, M.D. Florida Tampa Division, *Odyssey Marine Exploration Inc. v. Unidentified, Shipwrecked Vessel*, case No. 8:07-cv-614-T-23MAP, Document 270, N.D., ref. http://www.gc.noaa.gov/documents/2012/122209_Mercedes-black_swan.pdf;

Code of Ethics (alphabetically ordered)⁷⁸⁷

Advisory Council on Underwater Archaeology, *Underwater Archaeology Ethics* Press Kit, ref. <http://www.acuaonline.org/assets/2011/03/02/e313d3ce2e2ff7dc8f6c55b824ed4060.pdf>;

Archaeological Institute of America (AIA), *Code of Ethics*, ref. http://www.archaeological.org/pdfs/AIA_Code_of_EthicsA5S.pdf;

European Association of Archaeologists (EAA), *The EAA Code of Practice*, Ravenna, 1997, ref. http://e-a-a.org/EAA_Code_of_Practice.pdf;

ICOM, *Code of Ethics for Museums*, 2013, ref. http://icom.museum/fileadmin/user_upload/pdf/Codes/code_ethics2013_eng.pdf;

Monitoring Group on Cultural Heritage in the Baltic Sea States, *Code of good Practice for the management of the Underwater Cultural Heritage in the Baltic Sea Region* (COPUCH), ref. <http://www.nba.fi/tiedostot/e410ebee.pdf>;

Professional Shipwreck Explorers Association (ProSEA), *Code of Ethics*, ref. <http://www.prosea.org/about/codeethics.html>;

Register of Professional Archaeologists (RPA), *Code of Conduct*, ref. <http://www.rpanet.org/displaycommon.cfm?an=1&subarticlenbr=3>;

⁷⁸⁷ Last access to these documents: 10/08/2012.

Books, articles and reports (alphabetically ordered)

Advisory Committee on Historic Wreck Sites, *Annual Report 2009, 2010*, ref. <http://www.english-heritage.org.uk/publications/achws-annual-report-2009/>, last access 25/10/2012;

Albicocco R., *La musealizzazione dei relitti navali. Le scelte espositive ed il monitoraggio del microclima: linee guida*, PhD thesis in Technology and Management of Cultural Heritage at IMT Institute for Advanced Studies, Lucca, 2009;

Almkvist G., *The Chemistry of the Vasa – Iron, Acids and Degradation*, Doctoral Thesis, Faculty of Natural Resources and Agricultural Science, Department of Chemistry, Uppsala, 2008, ref. http://pub.epsilon.slu.se/1809/1/Acta_2008_57_till_epsilon.pdf, last access 01/09/2012;

Allotta G., “Le attività delle associazioni non governative”, in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002;

Alves F. J. S., “Underwater Archaeological Trails”, *Museum International*, Vol. 60, Issue 4, February 2009, ref. <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-0033.2008.00668.x/pdf>, last access 06/10/2011;

Alves F. J. S., “Underwater cultural heritage management and ship archaeology – the Portuguese experience”, in Satchell J. and Palma P. (Edited by), *Managing the Cultural Heritage: Defining, accessing and managing the resource*, Council for British Archaeology, 2007;

Amer C. F. and Steen C., “The South Caroline Hobby Diver Program”, in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998;

Amin N., “Underwater Archaeology Museum of Alexandria”, An Integrated Sustainable Development Role”, *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010;

Anderson R. K., Croteau T. A. (edited by), *Guidelines for Recording Historic Ships*, National Park Service, Washington, 2004, ref. <http://www.nps.gov/history/hdp/standards/HAER/GRHS%20FINAL%20PDF.pdf>, last access 03/09/2011;

Aznar-Gómez M. J., "Spain's position having ratified the UNESCO Convention", in Yorke R. A. (edited by), *Protection of underwater cultural heritage in international waters adjacent to UK*, proceedings of the JNAPC 21st anniversary seminar, Burlington House November 2011, The Nautical Archaeology Society, Portsmouth, 2011, ref. <http://www.jnapc.org.uk/UNESCO-Seminar-2010-final.pdf>, last access 26/03/2012;

Aznar-Gómez M. J., "Treasure hunters, sunken state vessels and the 2001 UNESCO Convention on the Protection of Underwater Cultural Heritage", *The International Journal of Marine and Coastal Law*, Vol. 25, No. 2, 2010, ref. <http://agc-wopac.agc.gov.my/e-docs/Journal/0000017404.pdf>, last access 03/09/2011;

Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998;

Badalamenti F., Ramos A. A., Voultziadou E., Sánchez J. L., D'Anna G., Pipitone C., Mas J., Ruiz Fernandez J. A., Whitmarsh D. and Riggio S., "Cultural and socio-economic impacts of Mediterranean marine protected areas", *Environmental Conservation*, Vol. 27, 2000, ref. http://journals.cambridge.org/download.php?file=%2FENC%2FENC27_02%2FS0376892900000163a.pdf&code=0d6128663d2640003d961c531b3262e2, last access 6/12/2011;

Barrowman E., "The Recovery of Shipwrecks in International Waters: A Multilateral Solution", *Michigan Yearbook of International Legal Studies*, 1987;

Barstad J. F., "Underwater Archaeology: Filling in the Gaps", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Bass G. F., "Archaeology in the 21st Century", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Bass G. F., *Beneath the Seven Seas: Adventures with the Institute of Nautical Archaeology*", Thames and Hudson, London, 2005;

Bederman D. J., "Rethinking the Legal Status of Sunken Warships", *Ocean Development & International Law*, Vol. 31, 2002, ref. <http://www.tandfonline.com/doi/pdf/10.1080/009083200276085>, last access 21/11/2011;

Bederman D. J., "The UNESCO Convention on the Protection of Underwater Cultural Heritage: Operational Guidelines & Implementation Challenges", *Odyssey Marine Exploration Papers* 13, 2010, ref. http://www.shipwreck.net/pdf/OMEPapers13-UNESCO_000.pdf, last access 08/11/2010;

Beltrame C., "Italy", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Benini S., "Il patrimonio archeologico subacqueo nella legislazione nazionale", in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo*, *Mediterraneum*, Vol. 4, Massa Editore, Sep. 2004;

Bernier M. A., "To Dig or not to Dig? The Example of the Shipwreck of the Elizabeth and Mary", in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006, ref. <http://www.international.icomos.org/risk/2006/fullldocan.pdf>, last access 03/05/2011;

Beurier J-P., "Commentaire de la Déclaration de Syracuse sur le patrimoine culturel sous-marin de la Mer Méditerranée", in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002;

Björdal C. G., Nilsson T. and Petterson R., "Preservation, storage and display of waterlogged wood and wrecks in an aquarium: "Project Aquarius"", *Journal of Archaeological Science*, Vol. 34, Issue 7, 2007, ref. http://www.sciencedirect.com/science?_ob=ArticleListURL&_method=list&_ArticleListID=1851322933&_sort=r&_st=13&_view=c&_acct=C000035258&_version=1&_urlVersion=0&_userid=651649&md5=834820f3ff8502769a34225b365ef332&searchtype=a, last access 22/11/2011;

Blockley M., "Archaeologists in the marketplace", in Cooper M. A., Firth A., Carman J. and Wheatley D. (edited by), *Managing Archaeology*, Routledge, London, 1995;

Boesten E., *Archaeological and/or Historic Valuable Shipwrecks in International Waters*, TMC Asser Press, The Hague, 2002;

Booth F., "The Collision of Property Rights and Cultural Heritage; the Salvors' and Insurers' Viewpoints", in Hoffman B. T. (Edited by), *Art and Cultural Heritage: Law, Policy and Practice*, Cambridge University Press, 2006;

Bower M., "Marketing Nostalgia: An exploration of heritage management and its relation to the human consciousness", in Cooper M. A., Firth A., Carman J. and Wheatley D. (edited by), *Managing Archaeology*, Routledge, London, 1995;

Bowman L. J., "Oceans apart over sunken ships: is the underwater cultural heritage convention really wrecking admiralty law?", *Osgoode Hall Law Journal*, Vol. 42, No. 1, 2004, ref. http://www.ohlj.ca/archive/articles/42_1_bowman.pdf, last access 15/03/2012;

Broadwater J. and Nutley D., "The Management of Marine Archaeological Sites In Situ and Site sustainability", *Conservation and Management of Archaeological Sites*, Vol. 18, No. 1, Mar 2009, ref. <http://docserver.ingentaconnect.com/deliver/connect/maney/13505033/v11n1/s10.pdf?expires=1306323719&id=62899478&titleid=75002139&accname=IMT+Advanced+Studies&checksum=F44DA6EAD5D27E12D50394A3F17CFEA6>, last access 25/05/2011;

Broadwater J. D., "Timelines of Underwater Archaeology", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Cafilish L., "Submarine Antiquities and the International Law of the Sea", *Netherlands Yearbook of International Law*, vol. 13, 1982;

Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002;

Carducci G., "New Developments in the Law of the Sea: The UNESCO Convention on the Protection of Underwater Cultural Heritage", *The American Journal of International Law*, Vol. 96, No. 2, 2002 a, ref. <http://www.jstor.org/stable/pdfplus/2693936.pdf?acceptTC=true>, last access 03/09/2011;

Carducci G., "The Expanding Protection of the Underwater Cultural Heritage: The New UNESCO Convention versus Existing International Law", in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002 b;

Carducci G., "The Crucial Compromise on Salvage Law and the Law of Finds", in Garabello R. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Before and After the 2001 UNESCO Convention*, Publications on Ocean Development, Vol. 41, Martinus Nijhoff Publishers, Leiden, 2003;

Carducci G., "Introduction to the UNESCO Convention on the Protection of the Underwater Cultural Heritage", in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006, ref. <http://www.international.icomos.org/risk/2006/fulldocan.pdf>, last access 03/05/2011;

Carman J., "The importance of things", in Cooper M. A., Firth A., Carman J. and Wheatley D. (edited by), *Managing Archaeology*, Routledge, London, 1995;

Casini L., "Italian Hours: The Globalization of Cultural Property Law", *Jean Monnet Working Paper*, No. 11, 2010, ref. <http://centers.law.nyu.edu/jeanmonnet/papers/10/101101.pdf>, last access 20/05/2012;

Castro F., "Archeologist, Treasures Hunters, and the UNESCO Convention on the Protection of the Underwater Cultural Heritage: a Personal Viewpoint", *Odyssey Marine Exploration Papers* 13, 2010, ref. http://www.shipwreck.net/pdf/OMEPapers13-UNESCO_000.pdf, last access 08/11/2010;

Cederlund C. O., "Archaeology in the Marine Environment in Sweden", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Cederlund C. O., "Visualisation through Participation", *Moss Newsletter*6, Genuary, 2004, ref. http://www.nba.fi/INTERNAT/MoSS/download/moss_newsletter6.pdf, last access 10/10/2011;

Chuanping W., "Preservation of Cultural Relicts in the Three Gorges and the Establishment of the Three Gorges Museum Complex", *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010;

Chapman P., Conte G., Drap P., Gambogi P., Gauch F., Hanke K., Long L., Loureiro V., Papini O., Pascoal A., Richards J., Roussel D., *VENUS, Virtual Exploration of Underwater Sites*, 7th International Symposium on Virtual Reality, Archeology and Cultural Heritage (VAST 2006), ref. http://sudek.esil.univmed.fr/publication/VENUS_VastCipa2006_light.pdf, last access 03/01/2011;

Claesson S., "The Value and Valuation of Maritime Cultural Heritage", *International Journal of Cultural Property*, Vol. 18, Issue 1, 2011, ref. <http://journals.cambridge.org/action/displayFulltext?type=1&fid=8319878&jid=JCP&volumeId=18&issueId=01&aid=8319876&bodyId=&membershipNumber=&societyETOCSession=>, last access 13/07/2011;

Cockrell W. A., "Why Dr. Bass Couldn't Convince Mr. Gumbel: The Trouble with Treasure Revisited, Again", in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998;

Conforti B., *Diritto Internazionale*, Editoriale Scientifica, Napoli, 2002;

Cooper M. A., Firth A., Carman J. and Wheatley D. (edited by), *Managing Archaeology*, Routledge, London, 1995;

Cottrell E. M., "Keeping the Barbarians outside the Gate: Toward Comprehensive International Agreement Protecting Cultural Property", *Chicago Journal of International Law*, Vol. 9, No. 2, Winter 2009;

Darvill T., "Value systems in archaeology", in Cooper M. A., Firth A., Carman J. and Wheatley D. (edited by), *Managing Archaeology*, Routledge, London, 1995;

Davidde B., "Underwater Archaeological Parks: A New Perspective and a Challenge for Conservation. The Italian Panorama", *International Journal of Nautical Archaeology*, Vol. 31, N. 1, 2002, ref. <http://onlinelibrary.wiley.com/doi/10.1111/j.1095-9270.2002.tb01402.x/pdf>, last access 07/11/2011;

Davidde B., "Methods and Strategies for the Conservation and Museum Display *in situ* of Underwater Cultural Heritage", *Archaeologia Maritima Mediterranea*, Vol. 1, Pisa-Roma, 2005;

De la Torre M. (edited by), *Assessing the Values of Cultural Heritage*, Research Report From the Getty Conservation Institute, Los Angeles, 2002, ref. http://www.getty.edu/conservation/publications/pdf_publications/assessing.pdf, last access 26/05/2011;

De Narvaez D., "The UNESCO Convention for Protecting Underwater Cultural Heritage: a Colombian Perspective", *Odyssey Marine Exploration Papers* 13, 2010, ref. http://www.shipwreck.net/pdf/OMEPapers13-UNESCO_000.pdf, last access 08/11/2010;

Deeben J., Hallewas D. P. and Maarleveld T. J., *Predictive modeling in Archaeological Heritage Management of the Netherlands: the Indicative Map of Archaeological Values (2nd Generation)*, Proceedings of the National Service for Archaeological Heritage in the Netherlands, Vol. 45, 2002, ref. http://southerndenmark.academia.edu/ThijsMaarleveld/Papers/960808/Predictive_modelling_in_Archaeological_Heritage_Management_of_the_Netherlands, last access 04/10/2011;

Delgado J. P. (Edited by), *Encyclopaedia of Underwater and Maritime Archaeology*, British Museum Press, 1997;

Dobbs C., "Visitors, funding, and museums – reflections on the Mary Rose experience", in Satchell J. and Palma P. (Edited by), *Managing the Cultural Heritage: Defining, accessing and managing the resource*, Council for British Archaeology, 2007;

Dromgoole S. and Gaskell N., "Who Has Rights to Historic Wrecks and Wreckage?", *International Journal of Cultural Property*, Vol. 2, 1993, ref. <http://journals.cambridge.org/action/displayFulltext?type=1&fid=1033932&jid=JCP&volumeId=2&issueId=02&aid=1033928>, last access 28/04/2011;

Dromgoole S., "Murky waters for government policy: the case of a 17th century British warship and 10 tonnes of gold coins", *Marine Policy*, Vol. 28, 2004, ref. http://pdn.sciencedirect.com/science?_ob=MiamiImageURL&_cid=271824&_user=3918756&_pii=S0308597X03001039&_check=y&_origin=article&_zone=toolbar&_coverDate=31-May-2004&_view=c&_originContentFamily=serial&_wchp=dGLbVIB-zSkzS&_md5=c46691bd3deeceb3e97818d386112e6e/1-s2.0-S0308597X03001039-main.pdf, last access 15/03/2012;

Dromgoole S., "The legal framework for the management of the underwater cultural heritage beyond traditional territorial limits: recent developments and future prospects", in Satchell J. and Palma P. (Edited by), *Managing the Cultural Heritage: Defining, accessing and managing the resource*, Council for British Archaeology, 2007;

Dromgoole S., "The UNESCO Convention on the Protection of the Underwater Cultural Heritage 2001: A particular common law perspective", in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneo*, Vol. 4, Massa Editore, Sep. 2004;

Dromgoole S., "Why the UK Should Reconsider the UNESCO Convention 2001", in Yorke R. A. (edited by), *Protection of underwater cultural heritage in international waters adjacent to UK*, proceedings of the JNAPC 21st anniversary seminar, Burlington House November 2011, The Nautical Archaeology Society, Portsmouth, 2011, ref. <http://www.jnapc.org.uk/UNESCO-Seminar-2010-final.pdf>, last access 26/03/2012;

Drury P. and McPherson A., *Conservation Principles, Policies and Guidance, for the Sustainable Management of the Historic Environment*, English Heritage, London, April 2008, ref. <http://www.english-heritage.org.uk/publications/conservation-principles-sustainable-management-historic-environment/conservationprinciplespoliciesguidanceapr08web.pdf>, last access 25/10/2011;

Dunkley M. (edited by), *Protected Wreck Sites at Risk: a Risk Management Handbook*, English Heritage, 2008, ref. <http://www.english-heritage.org.uk/publications/protected-wreck-sites-at-risk-handbook/>, last access 26/10/2011;

Dunkley M., "The value of historic shipwrecks", in Radić Rossi I., Gaspari A. and Pydyn A. (edited by), *Proceedings of the 13th Annual Meeting of the European Association of Archaeologists (Zadar, Croatia, 18-23 September 2007)*. Session: *Underwater Archaeology*, Croatian Archaeological Society, Zagreb, 2008;

Dunkley M. and Oxley I., "The management of protected historic warship wrecks in England's waters", in S. Gallagher (edited by), *Shared Heritage: Joint Responsibilities in the Management of British Warship Wrecks overseas*, seminar collected papers, 8th July 2008, at the University of Wolverhampton, English Heritage, Swindon, 2009, ref. <http://www.english-heritage.org.uk/publications/management-of-british-warship-wrecks-overseas/shared-heritage-management-of-british-warship-wrecks-overseas.pdf#page=36>, last access 26/07/2012;

Elkin D., "Case Study: HMS Swift – Argentina", in S. Gallagher (edited by), *Shared Heritage: Joint Responsibilities in the Management of British Warship Wrecks overseas*, seminar collected papers, 8th July 2008, at the University of Wolverhampton, English Heritage, Swindon, 2009, ref. <http://www.english-heritage.org.uk/publications/management-of-british-warship-wrecks-overseas/shared-heritage-management-of-british-warship-wrecks-overseas.pdf#page=36>, last access 26/07/2012;

English Heritage, *Accessing England's Protected Wreck Sites. Guidance Notes for Divers and Archaeologists*, English Heritage Publications, 2010, ref. <http://www.english-heritage.org.uk/publications/guidance-for-divers/accessing-englands-protected-wreck-sites.pdf>, last access 25/10/2012;

English Heritage, *Protected Wreck Sites. Moving toward a new way of managing England's historic environment*, English Heritage Publications, 2010b, ref. <http://www.english-heritage.org.uk/publications/protected-wreck-sites/>, last access 25/10/2012;

English Heritage, *Application for a license to visit, survey, recover surface artifacts from or excavate a Designated Site under the Protection of Wrecks Act 1973*, Appendix I, Terms and Conditions, (n.d.), ref. <http://www.english-heritage.org.uk/professional/advice/our-planning-role/consent/protected-wreck-sites/marine-app-site-visit>, last access 29/10/2012;

European Commission – EuropeAid Cooperation Office, *Study of the current status of ratification, implementation and compliance with maritime agreements and conventions applicable to the Mediterranean Sea Basin. With a specific focus on the ENPI South Partner Countries*, Regional Report Part 2, December 2009, ref. http://ec.europa.eu/maritimeaffairs/documentation/studies/documents/mediterranean_02_en.pdf, last access 03/05/2012;

Evans A. M., Firth A. and Staniforth M., “Old and New Threats to Submerged Cultural Landscape: Fishing, Farming and Energy Development”, *Conservation and Management of Archaeological Sites*, Vol. 11, No. 1, March, 2009;

Firth A., “Ghosts in the machine”, in Cooper M. A., Firth A., Carman J. and Wheatley D. (edited by), *Managing Archaeology*, Routledge, London, 1995;

Firth A., “Underwater Cultural Heritage off England: character and significance”, in Yorke R. A. (edited by), *Protection of underwater cultural heritage in international waters adjacent to UK*, proceedings of the JNAPC 21st anniversary seminar, Burlington House November 2011, The Nautical Archaeology Society, Portsmouth, 2011, ref. <http://www.jnapc.org.uk/UNESCO-Seminar-2010-final.pdf>, last access 26/03/2012;

Fletcher-Tomenius P. and Forrest C., “Historic wreck in international waters: conflict or consensus?”, *Marine Policy*, Vol. 24, Issue 1, Jan 2000, ref. http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VCD-3Y9MD37-1&user=3918756&coverDate=01%2F31%2F2000&rdoc=1&fmt=high&orig=gateway&origin=gateway&sort=d&docanchor=&view=c&searchStrId=1734023065&rerunOrigin=scholar.google&acct=C000061785&version=1&urlVersion=0&userid=3918756&md5=17f619479717aa415c7627c0aa3928d6&searchtype=a, last access 28/04/2011;

Florida Department of State, Division of Historical Resources, Bureau of Archaeological Research, *A Proposal to Establish the Shipwreck USS Narcissus as a State Underwater Archaeological Preserve*, December 2011, ref. http://dhr.dos.state.fl.us/archaeology/underwater/docs/USS_Narcissus_Proposal.pdf, last access 28/08/2012;

Flyg P., "Underwater Archaeology and Cultural Heritage Management in the Baltic Sea-Using Public Outreach as a Means of Protection", *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010;

Fors Y. and Richards V., "The effects of the Ammonia Neutralizing Treatment on Marine Archaeological Vasa Wood", *Studies in Conservation*, vol. 55, 2010;

Forrest C., "Defining 'underwater cultural heritage'", *International Journal of Nautical Archaeology*, Vol. 31, N. 1, 2002, ref. <http://onlinelibrary.wiley.com/doi/10.1111/j.1095-9270.2002.tb01396.x/pdf>, last access 07/11/2011;

Forrest C., "Has the Application of Salvage Law to Underwater Cultural Heritage Become a Thing of the Past?", *Journal of Maritime Law & Commerce*, Vol. 34, No. 2, Apr. 2003 a, ref. http://heinonline.org/HOL/Page?handle=hein.journals/jmlc34&div=23&g_sent=1&collection=journals, last access 29/04/2011;

Forrest C., "An International Perspective on Sunken State Vessels as Underwater Cultural Heritage", *Ocean Development & International Law*, Vol. 34, Issue 1, 2003 b, ref. <http://www.tandfonline.com/doi/pdf/10.1080/00908320390154583>, last access 04/10/2011;

Forrest C., "Culturally and Environmentally Sensitive Sunken Warship", *Australian & New Zealand Maritime Law Journal*, vol. 26, N°1, 2012, ref. <https://maritimejournal.murdoch.edu.au/index.php/maritimejournal/article/view/181/222>, last access 06/08/2012;

Francioni F., "The Role of International Law in the Protection of Cultural Heritage", in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002;

Frigerio A., "L'entrata in vigore in Italia della Convenzione UNESCO 2001 sulla protezione del patrimonio culturale subacqueo", *Aedon, Rivista di arti e diritto on line*, n°2, 2010, ref. <http://www.aedon.mulino.it/archivio/2010/2/frigerio.htm>, last access 20/06/2012;

Frigerio A., "From the Past to the Future: the Promotion of Underwater Cultural Heritage through Advanced Technologies", in Cappellini V. (edited by), *Electronic Imaging & the Visual Arts: EVA 2011 Florence (proceedings)*, Pitagora Editrice, Bologna, 2011;

Frigerio A., "Il quadro giuridico del Titanic a 100 anni dalla tragedia", *Aedon, Rivista di arti e diritto on-line*, n°1-2, 2012, ref. http://www.aedon.mulino.it/archivio/2012/1_2/frigerio.htm, last access 08/10/2012;

Frigo M., "Profili relative alla circolazione e alla restituzione dei beni culturali in ambito internazionale", in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002;

Frigo M., *La protezione dei beni culturali nel diritto internazionale*, Milano, 1986;

Fuchs A., "The Alexandria Museum of Underwater Archaeology Project - "Sunken Cities", *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010;

Garabello R. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Before and After the 2001 UNESCO Convention*, Publications on Ocean Development, Vol. 41, Martinus Nijhoff Publishers, Leiden, 2003;

Garabello R., "I negoziati UNESCO per una Convenzione sul patrimonio culturale subacqueo", in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002;

Garabello R., "The Negotiating History of the Provisions of the Convention on the Protection of the Underwater Cultural Heritage", in Garabello R. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Before and After the 2001 UNESCO Convention*, Publications on Ocean Development, Vol. 41, Martinus Nijhoff Publishers, Leiden, 2003;

Gibbins D. and Adams J., "Shipwrecks and Maritime Archaeology", *World Archaeology*, Vol. 32, Issue 3, 2001, ref. <http://www.tandfonline.com/doi/pdf/10.1080/00438240120048635>, last access 04/10/2011;

Gibbons T., *The Encyclopedia of Ships: over 1500 military and civilian ships from 5000 BC to the present day*, Silverdale Books, Leicester, 2001;

Giesecke A. G., "Wrecked and Abandoned", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Gioia A., "La Convenzione dell'UNESCO del 2 novembre 2001 sulla protezione del patrimonio culturale sottomarino", in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneo*, Vol. 4, Massa Editore, Sep. 2004;

Goddio F., Bernand A., Bernand E., Darwish I., Kiss Z. and Yoyotte J., *Alexandria. The Submerged Royal Quarters*, Periplus Ltd, London, 1998;

Godfrey I. M., Gregory D., Nystrom I. and Richards V., "In situ Preservation of Archaeological Materials and Sites Underwater", in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneo*, Vol. 4, Massa Editore, Sep. 2004;

Gonzalez A. W., "Negotiating the Convention on Underwater Cultural Heritage: Myths and Reality", in Garabello R. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Before and After the 2001 UNESCO Convention*, Publications on Ocean Development, Vol. 41, Martinus Nijhoff Publishers, Leiden, 2003;

Gordon P., Watts Jr. and Roderick Mather I., "Public Programs: An Overview", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Green J. N., "Maritime Archaeology in Australia, the Indian Ocean, and Asia", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Green J., *Maritime Archaeology: A Technical Handbook*, Elsevier Inc., San Diego, 2004;

Gregory D. J., "Monitoring the effect of sacrificial anodes on the large iron artefacts on the Duart Point wreck", *International Journal of Nautical Archaeology*, vol. 28.2, 1997;

Grenier R., "Introduction: Mankind, and at Times Nature, are the True Risk to Underwater Cultural Heritage", in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006, ref. <http://www.international.icomos.org/risk/2006/fulldocan.pdf>, last access 03/05/2011;

Grenier R., *Las Ventajas de la preservación in situ*, ref. http://www.unesco.org.cu/SitioSubacuatico/Espanol/01_robert_grenier.htm, last access 08/11/2010;

Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, 2006, ref. <http://www.international.icomos.org/risk/2006/fulldocan.pdf>, last access 03/05/2011;

Gribble J., "HMS Birkenhead and the British warship wrecks in South African waters", in S. Gallagher (edited by), *Shared Heritage: Joint Responsibilities in the Management of British Warship Wrecks overseas*, seminar collected papers, 8th July 2008, at the University of Wolverhampton, English Heritage, Swindon, 2009, ref. <http://www.english-heritage.org.uk/publications/management-of-british-warship-wrecks-overseas/shared-heritage-management-of-british-warship-wrecks-overseas.pdf#page=36>, last access 26/07/2012;

Guerin U., "Objectives, benefits to States Parties, and implementation of the UNESCO Convention on Underwater Cultural Heritage (2001)", in Yorke R. A. (edited by), *Protection of underwater cultural heritage in international waters adjacent to UK*, proceedings of the JNAPC 21st anniversary seminar, Burlington House November 2011, The Nautical Archaeology Society, Portsmouth, 2011, ref. <http://www.jnapc.org.uk/UNESCO-Seminar-2010-final.pdf>, last access 26/03/2012;

Guerin U., "The UNESCO Convention on the Protection of the Underwater Cultural Heritage and the development of underwater museums", *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010;

Håfors B., "The Climate of the *Vasa* Museum: problems in coordinating the museum object and the museum climate", *Maritime Park Association*, 1997, ref. <http://www.maritime.org/conf/conf-hafors.htm>, last access 01/09/2012;

Håfors B., *Conservation of the Swedish Warship Vasa from 1628*, Report, ref. http://diss-epsilon.slu.se:8080/archive/00001809/01/Acta_2008_57_till_epsilon.pdf, last access 08/06/2010;

Hall A. W., "Underwater Archaeology and the Internet: Navigating a Web of Challenges and Opportunities", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Hamer A. and Satchell J., "Engaging audiences with maritime archaeology: Delivering education, learning and training experiences from the classroom to the field", in Radić Rossi I., Gaspari A. and Pydyn A. (edited by), *Proceedings of the 13th Annual Meeting of the European Association of Archaeologists (Zadar, Croatia, 18-23 September 2007). Session: Underwater Archaeology*, Croatian Archaeological Society, Zagreb, 2008;

Hamilton D. L., *Methods of Conserving Archaeological Material from Underwater Sites*, 1999, ref. <http://www.alitahaomar.yolasite.com/resources/Methods%20of%20Conserving%20Archaeological%20Material%20from%20Underwater%20Sites.pdf>, last access 01/09/2012;

Hampshire & Wight Trust for Maritime Archaeology, "Solent Marine Heritage Assets: Defining, investigating, monitoring and reporting (2008-2011)", *Yarmouth Roads Report*, March 2010, ref. <http://www.hwtma.org.uk/uploads/documents/Archaeological%20Projects/SMHA/SMHA%20Yarmouth%20Roads%20Site%20Report%202010.pdf>, last access 20/11/2012;

Hampton M. P., "Heritage, Local Communities and Economic Development", *Annals of Tourism Research*, Vol. 32, No. 3, 2005.

Hannahs T., "Underwater Parks Versus Preserves: Data or Access", in Spirek J. D. and Scott-Ireton D. A. (Edited by), *Submerged Cultural Resource Management: Preserving and Interpreting Our Sunken Maritime Heritage*, Kluwer Academic/Plenum Publishers, 2003;

Harris J. R., "The Protection of Sunken Warships as gravesites at sea", *Ocean & Coastal Law Journal*, 2001-02, ref. http://heinonline.org/HOL/Page?handle=hein.journals/occoa7&div=15&g_sent=1&collection=journals, last access 29/04/2011;

Henderson G., "Significance assessment or blanket protection", *International Journal of Nautical Archaeology*, Vol. 30, Issue 1, 2001, ref. <http://onlinelibrary.wiley.com/doi/10.1111/j.1095-9270.2001.tb01351.x/pdf>, last access 07/11/2011;

Heritage Victoria Council, *Public Access to Historic Shipwrecks: Guidelines 2010*, ref. http://www.heritage.vic.gov.au/admin/file/content2/c7/Shipwreck_Access_1279490504019.pdf, last access 03/05/2011;

Herreman Y., "The Role of Museums Today: Tourism and Cultural Heritage", in Hoffman B. T. (Edited by), *Art and Cultural Heritage: Law, Policy and Practice*, Cambridge University Press, 2006;

Hess P. E., "The Trouble with treasure: Ethical Dilemmas for the Salvage Attorney", *Journal of Maritime Law and Commerce*, Vol. 30, No. 2, Apr. 1999, ref. http://heinonline.org/HOL/Page?handle=hein.journals/jmlc30&div=28&g_sent=1&collection=journals, last access 29/04/2011;

Hocker F., *Vasa: A Swedish Warship*, Medströms Bokförlag, Stockholm, 2011;

Hoffman B. T. (Edited by), *Art and Cultural Heritage: Law, Policy and Practice*, Cambridge University Press, 2006;

Houxi Z., "Phased Results and Follow-up. Archaeological Work at the Three Gorges", *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage, Chongqing (China)*, 2010;

Hutchinson G., "Threats to underwater cultural heritage. The problems of unprotected archaeological and historical sites, wrecks and objects found at sea", *Marine Policy*, Vol. 24, Issue 4, Jul 1996;

Jayne E., "Globalization in Art Law: Clash of Interests and International Tendencies", *Vanderbilt journal of Transnational Law*, Vol. 38, 2005;

Jeansoulin R. and Papini O., *Underwater Archeological Knowledge Analysis and Representation in the Venus Project: a Preliminary Draft*, XXI International CIPA Symposium, ref. <http://www.isprs.org/proceedings/XXXVI/5-C53/papers/FP077.pdf>, last access 20/11/2010;

Jixiang S., "From Underwater Archaeology to Underwater Cultural Heritage Protection: Speech for the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage", *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing, (China), 2010;

Johnson C., "The Agreement between Australia and the Netherlands Concerning Old Dutch Shipwrecks", in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002;

Jun W., "Innovative Thoughts on the Preservation of Underwater Cultural Heritage in China: No. 1 Nanhai as a Project Example, *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010;

Jöns H., "Techniques of Documentation and Visualization", *Moss Newsletter*6, January, 2004, ref. http://www.nba.fi/INTERNAT/MoSS/download/moss_newsletter6.pdf, last access 10/10/2011;

Khalil E. and Mustafa M., "Underwater Archaeology in Egypt", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Keers G., Van der Reijden H. and Van Rossum H., *Planning Archaeology. A Synthesis of the Thematic Sub-reports*, Dutch report, July 2011, ref. [http://www.cultureelerfgoed.nl/sites/default/files/u6/Vertaling%20Ruimte%20voor%20archeologie%20\(ENG\).def.pdf](http://www.cultureelerfgoed.nl/sites/default/files/u6/Vertaling%20Ruimte%20voor%20archeologie%20(ENG).def.pdf), last access 11/10/2012;

Keith D. H., "Preservation", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Kimball J., "Living with the Convention on the Protection of the Underwater Cultural Heritage", *Odyssey Marine Exploration Papers* 13, 2010, ref. http://www.shipwreck.net/pdf/OMEPapers13-UNESCO_000.pdf, last access 08/11/2010;

Kingsley S., "Underwater Cultural Heritage & UNESCO in New Orleans: An Introduction", *Odyssey Marine Exploration Papers* 13, 2010, ref. http://www.shipwreck.net/pdf/OMEPapers13-UNESCO_000.pdf, last access 08/11/2010;

Kingsley S., "UNESCO, Commerce & Fast-Food Maritime Archeology", *Odyssey Marine Exploration Papers* 13, 2010, ref. http://www.shipwreck.net/pdf/OMEPapers13-UNESCO_000.pdf, last access 08/11/2010;

Kist J. B., "Integrating Archaeological and Historical Records in Dutch East India Company Research", in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998;

Knoerl T. K. (edited by), *The Museum of Underwater Archaeology Guest Blogger Anthology*, 2009-2010, ref. http://www.uri.edu/artsci/his/mua/documents/MUA_Guest_Blogger_Anthology.pdf, last access 04/07/2011;

Koschtial U., "The 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage: advantages and challenges", *Museum International*, Vol. 60, Issue 4, February 2009, ref. <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-0033.2008.00665.x/pdf>, last access 06/10/2011;

Leanza U., "Il patrimonio culturale sottomarino del Mediterraneo", in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002;

Lenihan D. J. and Murphy L., "Considerations for Research Designs in Shipwreck Archaeology", in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998;

Leshikar-Denton M. E., "Cooperation is the Key: We Can Protect the Underwater Cultural Heritage", *Journal of Maritime Archaeology*, Vol. 5, No. 2, 2010, ref. <http://www.springerlink.com/content/rh614q50t7632572/>, last access 03/09/2011;

Leshikar-Denton M. E., "Foundations in Management of Maritime Cultural Heritage in the Cayman Island", in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006, ref. <http://www.international.icomos.org/risk/2006/fulldocan.pdf>, last access 03/05/2011;

L'Hour M., "An update on France's position regarding the UNESCO Underwater Cultural Heritage Convention", in Yorke R. A. (edited by), *Protection of underwater cultural heritage in international waters adjacent to UK*, proceedings of the JNAPC 21st anniversary seminar, Burlington House November 2011, The Nautical Archaeology Society, Portsmouth, 2011, ref. <http://www.jnapc.org.uk/UNESCO-Seminar-2010-final.pdf>, last access 26/03/2012;

Lin R. J., "Salvage Rights and Intellectual Property: are Copyright and Trademark Rights Included in the Salvage Rights to the R.M.S. Titanic?", *Tulane Maritime Law Journal*, 1998-99, ref. http://heinonline.org/HOL/Page?handle=hein.journals/tulmar23&div=28&g_sent=1&collection=journals, last access 29/04/2011;

Lorenzi R., *Roman statues found in Blue Grotto Cave*, September 2009, ref. <http://news.discovery.com/history/blue-grotto-statues.html>, last access 14/11/2011;

Lyell C., *Principles of Geology, being an attempt to explain the former changes of the earth surface, by reference to causes now in operation*, John Murray, Vol. 2, London, 1832, ref. http://darwin-online.org.uk/content/frameset?viewtype=text&itemID=A505.2&page_seq=1, last access 28/11/2011;

Maarleveld T. J., "A Perspective from Other Countries", in Yorke R. A. (edited by), *Protection of underwater cultural heritage in international waters adjacent to UK*, proceedings of the JNAPC 21st anniversary seminar, Burlington House November 2011, The Nautical Archaeology Society, Portsmouth, 2011, ref. <http://www.jnapc.org.uk/UNESCO-Seminar-2010-final.pdf>, last access 26/03/2012;

Maarleveld T. J., "Drama, Place and Verifiable Link: Underwater Cultural Heritage, Present Experience and Contention", in Turgeon L. (edited by), *Spirit of Place: Between Tangible and Intangible Heritage*, Les Presses de l'université Laval, Québec, 2009, ref. http://southerndenmark.academia.edu/ThijsMaarleveld/Papers/934619/Drama_Place_and_Verifiable_link_Underwater_Cultural_Heritage_Present_Experience_and_Contention, last access 04/10/2011;

Maarleveld T. J., "Ethics, Underwater Cultural Heritage, and International Law", in Catsambis A., Ford B. and Hamilton D. L., *The Oxford handbook of marine archaeology*, Oxford/New York, 2011, ref. http://southerndenmark.academia.edu/ThijsMaarleveld/Papers/945510/Ethics_Underwater_Cultural_Heritage_and_International_Law, last access 03/10/2011;

Maarleveld T. J., "Finding 'New' Boats: enhancing our chances in heritage management, a predictive approach", in Clark P., *The Dover Bronze Age Boat in Context. Society and water transport in prehistoric Europe*, Oxford, 2004, ref. http://southerndenmark.academia.edu/ThijsMaarleveld/Papers/956129/Finding_new_boats_enhancing_our_chances_in_heritage_management_a_predictive_approach, last access 04/10/2011;

Maarleveld T. J., "How and Why will Underwater Cultural Heritage Benefit from the 2001 UNESCO Convention?", *Museum International*, Vol. 60, Issue 4, February 2009, ref. <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-0033.2008.00666.x/pdf>, last access 06/10/2011;

Maarleveld T. J., "International good practice or a few comments upon them", in S. Gallagher (edited by), *Shared Heritage: Joint Responsibilities in the Management of British Warship Wrecks overseas*, seminar collected papers, 8th July 2008, at the University of Wolverhampton, English Heritage, Swindon, 2009, ref. http://southerndenmark.academia.edu/ThijsMaarleveld/Papers/934578/Shared_Heritage_Joint_Responsibilities_in_the_Management_of_British_Warship_Wrecks_overseas_International_Good_Practice_or_a_Few_Comments_Upon, last access 07/11/2011;

Maarleveld T. J., "Le Patrimoine maritime et sa protection selon le droit néerlandais", in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneum*, Vol. 4, Massa Editore, Sep. 2004;

Maarleveld T. J., "Maritime management matters", in Satchell J. and Palma P. (Edited by), *Managing the Cultural Heritage: Defining, accessing and managing the resource*, Council for British Archaeology, 2007;

Maarleveld T. J., "Teaching Maritime Archaeology: A practical approach?", in Radić Rossi I., Gaspari A. and Pydyn A. (edited by), *Proceedings of the 13th Annual Meeting of the European Association of Archaeologists (Zadar, Croatia, 18-23 September 2007). Session: Underwater Archaeology*, Croatian Archaeological Society, Zagreb, 2008;

Maarleveld T. J., "The Wadden Sea and heritage protection in the Netherland", *MoSS Newsletter* 5, December 2003, ref. http://www.maritiemprogramma.nl/documenten/MoSS/moss_newsletter5.pdf, last access 25/09/2012;

Maarleveld T. J., "The 2001 UNESCO-Convention on the Protection of the Underwater Cultural Heritage: Origin and Consequences", in Hahn-Pedersen M. (edited by), *Havets kulturarv, Fiskeri- og Søfartsmuseets Studierie*, nr. 24, Esbjerg, n.d., ref. http://southerndenmark.academia.edu/ThijsMaarleveld/Papers/956314/The_2001_UNESCO-Convention_on_the_Protection_of_the_Underwater_Cultural_Heritage-Origin_and_Consequences, last access 04/10/2011;

Maarleveld T. J., *History of diving*, course synopsis, Esbjerg, n.d., ref. http://southerndenmark.academia.edu/ThijsMaarleveld/Papers/995867/History_of_diving, last access 04/10/2011;

Maarleveld T. J., *Managing the Maritime Heritage under Water*, Proceedings of the National Service for Archaeological Heritage in the Netherlands, Vol. 46, 2006, ref. http://southerndenmark.academia.edu/ThijsMaarleveld/Papers/934624/Managing_the_Maritime_Heritage_under_Water.The_Choices_We_Face, last access 04/10/2011;

MacLeod I. D., "In Situ Corrosion Measurements and Management of Shipwreck", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Mainetti V., "Considerazioni in tema di esercizio della sovranità archeological da parte dello Stato costiero", in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002;

Manders M., "Safeguarding a site: the Master-Management Plan", *MoSS Newsletter*3, May 2004a, ref. http://www.nba.fi/internat/moss/download/moss_newsletter8.pdf, last access 25/11/2011;

Manders M., "The Safeguarding of BZN 10", *MoSS Newsletter*3, May 2004b, ref. http://www.nba.fi/internat/moss/download/moss_newsletter8.pdf, last access 25/11/2011;

Manders M., "Why do we safeguard shipwrecks?", *MoSS Newsletter*3, May 2004c, ref. http://www.nba.fi/internat/moss/download/moss_newsletter8.pdf, last access 25/11/2011;

Manders M. R., "Protecting Common Maritime Heritage. The Netherlands involved in two EU-projects: MoSS and BACPOLES", in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneum*, Vol. 4, Massa Editore, Sep. 2004;

Manders M., "The In Situ Protection of a Dutch Colonial Vessel in Sri Lankan Waters", in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006, ref. <http://www.international.icomos.org/risk/2006/fulldocan.pdf>, last access 03/05/2011;

Manders M., "In Situ Preservation: 'the preferred option'", *Museum International*, Vol. 60, Issue 4, February 2009, ref. <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-0033.2008.00663.x/pdf>, last access 06/10/2011;

Manders M. (editors), *Guidelines for predicting decay by shipworm in the Baltic Sea*, WreckProtect, 2011a, ref. http://wreckprotect.eu/fileadmin/site_upload/wreck_protect/pdf/Guidelines_Predicting_web_1.PDF, last access 06/10/2011;

Manders M. (editors), *Guidelines for Protection of Submerged Wooden Cultural Heritage, including cost-benefit analysis*, WreckProtect, 2011b, ref. http://wreckprotect.eu/fileadmin/site_upload/wreck_protect/pdf/Guidelines_Protection_web.pdf, last access 06/10/2011;

Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneo*, Vol. 4, Massa Editore, Sep. 2004;

Maniscalco F., “Il parco sommerso di Baia”, in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneo*, Vol. 4, Massa Editore, Sep. 2004;

Maniscalco F., “La tutela del patrimonio culturale nel Mediterraneo occidentale”, in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneo*, Vol. 4, Massa Editore, Sep. 2004;

Martos López L. A., “Underwater Archaeological Exploration of the Mayan Cenotes”, *Museum International*, Vol. 60, Issue 4, February 2009, ref. <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-0033.2008.00670.x/pdf>, last access 06/10/2011;

Masetti G., Orsini F., “I Relitti delle Navi da Guerra: status e tutela giuridica”, *Informazioni della Difesa* 5, 2011, ref. <http://www.difesa.it/Pubblicistica/info-difesa/Infodifesa140/2011/Documents/Rivista%205-2011/24-31.pdf>, last access 30/07/2012;

McCormack, *The Titanic Ventures: Who Owns the Ocean Deep?*, Sep. 1999, ref. <http://www.houstonmarineseminar.com/Titanic.pdf>, last access 28/04/2011;

McElvogue D., “Informing Marine Designation: The IFA Perspective”, *Institute of Field Archaeologists Maritime Affairs Group (IFA-MAG) Bulletin*, special edition: report on the MAG Seminar ‘Informing Marine Designation: Sourcing Field Evaluation of Marine Historic Asset Expertise’ (London, 8 February 2007), March 2007;

McLendon T., Klein J., Listokin D. and Lahr M. L., *Economic Impacts of Historic Preservation in Florida: Update 2010*, executive summary, 2010, ref. http://www.law.ufl.edu/pdf/academics/centers-clinics/centers/executive_summary_2010.pdf, last access 28/09/2012;

Memet J-B., "Conservation of Underwater Cultural Heritage: characteristics and new technologies", *Museum International*, Vol. 60, Issue 4, February 2009, ref. <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-0033.2008.00664.x/pdf>, last access 06/10/2011;

Merryman J. H., "Two ways of Thinking About Cultural Property", *The American Journal of International Law*, Vol. 80, 1986;

Mesić J., "A Resource for Sustainable Development: the case of Croatia", *Museum International*, Vol. 60, Issue 4, February 2009, ref. <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-0033.2008.00669.x/pdf>, last access 06/10/2011;

Mesić J., "Protezione del patrimonio culturale subacqueo in Croazia", in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo*, *Mediterraneum*, Vol. 4, Massa Editore, Sep. 2004;

Miller M. L., "Underwater Cultural Heritage: is the Titanic still in peril as courts battle over the future of the historical vessel?", *Emory International Law Review*, Vol. 20, n.d., ref. <http://www.law.emory.edu/fileadmin/journals/eilr/20/20.1/Miller.pdf>, last access 08/11/2010;

Mortensen M. N., Egsgaard H., Hvilsted S., Shashoua Y. and Glastrup J., "Characterisation of the polyethylene glycol impregnation of the Swedish warship Vasa and one of the Danish Skuldelev Viking ships", *Journal of Archaeological Science*, n. 34, 2007, ref. <http://202.114.89.60/resource/pdf/1306.pdf>, last access 01/09/2012;

Mostafa H.M., Grimal N. and Nakashima D., *Underwater Archaeology and Coastal Management. Focus on Alexandria*, UNESCO Publishing, Paris, 2000, ref. <http://www.unesco.org/csi/pub/source/alex1.htm>, last access 15/10/2012;

Muche J. F., "Site Location Factors", in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998;

Muckelroy K., "Introducing Maritime Archaeology", in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998;

Murphy, "Ownership of Sunken Spanish Warships", *The American Journal of International Law*, Vol. 94, No. 4, Oct 2000, ref. <http://www.jstor.org/stable/pdfplus/2589779.pdf?acceptTC=true>, last access 28/04/2011;

Nautical Archaeology Society, Bowens A. (editor), *Underwater Archaeology. The NAS Guide to Principles and Practice*, Second Edition, Nautical Archaeology Society, Portsmouth, 2009;

Neyland R. S., *Sovereign Immunity and the Management of the United States Naval Shipwrecks*, 2001, ref. <http://www.history.navy.mil/branches/org12-7h.htm>, last access 03/08/2012;

Nisa, *Management Plan of shipwreck site Burgzand Noord 10*, 2004, ref. http://moss.nba.fi/download/mp_bzn-10.pdf, last access 20/10/2012;

Nutley D., "Protected Zones and Partnerships: Their Application and Importance to Underwater Cultural Heritage Management", in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006, ref. <http://www.international.icomos.org/risk/2006/fulldocan.pdf>, last access 03/05/2011;

Nutley D., "Submerged Cultural Sites: opening a time capsule", *Museum International*, Vol. 60, Issue 4, February 2009, ref. <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-0033.2008.00661.x/pdf>, last access 06/10/2011;

Odyssey Marine Exploration, *Announces 2009 Financial Results*, ref. <http://shipwreck.net/pr198.php>, last access 20/08/2012;

Odyssey Marine Exploration, *Reports Fourth Quarter and Full Year 2010 Financial Results*, ref. <http://shipwreck.net/pr218.php>, last access 20/08/2012;

Odyssey Marine Exploration, *Reports Fourth Quarter and Full Year 2011 Financial Results*, ref. <http://shipwreck.net/pr241.php>, last access 20/08/2012;

O'Keef P. J., "Protecting the underwater cultural heritage: The International Law Association Draft Convention", *Marine Policy*, Vol. 20, No. 4, 1996, ref. <http://202.114.89.60/resource/pdf/2335.pdf>, last access 03/09/2011;

O'Keef P. J., *Shipwrecked Heritage: A Commentary on the UNESCO Convention on Underwater Cultural Heritage*, Institute of Art and Law (IAL), 2002;

O'Keef P., "The Buenos Aires Draft Convention on the Protection of the Underwater Cultural Heritage Prepared by the International Law Association: Its Relevance Seven Years on", in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002;

Ohlsson H. L., "Who needs ships replicas, and what for?", *Moss Newsletter*6, Genuary, 2004, ref. http://www.nba.fi/INTERNAT/MoSS/download/moss_newsletter6.pdf, last access 10/10/2011;

Olsson A., "The Presentation and Valorisation of Shipwrecks on the Example of the Vasa", *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010;

Oxley I. and Gregory D., "Site Management", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Oxley I., "The Investigation of the Factors that Affect the Preservation of Underwater Archaeological Sites", in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998;

Panayotopoulos J. M., "The 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage: Main Controversies", in Vrdoljak A. F. and Francioni F., *The Illicit Traffic of Cultural Property in the Mediterranean*, EUI Working Paper AEL, Sep. 2009, ref. http://cadmus.eui.eu/bitstream/handle/1814/12053/AEL_2009_09.pdf?sequence=1, last access 26/10/2010;

Panter I., "In situ preservation versus active conservation: are we prepared for the deluge?", in Satchell J. and Palma P. (Edited by), *Managing the Cultural Heritage: Defining, accessing and managing the resource*, Council for British Archaeology, 2007;

Parham D. and Williams M., "An outline of the nature of the threat to Underwater Cultural Heritage in International Waters", in Yorke R. A. (edited by), *Protection of underwater cultural heritage in international waters adjacent to UK*, proceedings of the JNAPC 21st anniversary seminar, Burlington House November 2011, The Nautical Archaeology Society, Portsmouth, 2011, ref. <http://www.jnapc.org.uk/UNESCO-Seminar-2010-final.pdf>, last access 26/03/2012;

Parker B. and Potter Jr., "An Envelop Full of Questions That Count in Underwater Archaeology", in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998;

Peacock D., "Making Ways for Change: Museums, Disruptive Technologies and Organisational Change", *Museum Management and Curatorship*, Vol. 23, Issue 4, 2008, ref. <http://www.tandfonline.com/doi/pdf/10.1080/09647770802517324>, last access 06/10/2011;

Pettifer E. and Smeardon L. (edited by), *Dive Straight In! A Dip-In Resource for Engaging Public in Marine Issues*, CoastNet, UK, 2006, ref. http://library.coastweb.info/956/1/CoastNet_Dive_Straight_In!.pdf, last access 10/10/2011;

Philippou C. and Staniforth M., "Maritime Heritage Trails in Australia: An Overview and Critique of the Interpretive Programs", in Spirek J. D. and Scott-Ireton D. A. (Edited by), *Submerged Cultural Resource Management: Preserving and Interpreting Our Sunken Maritime Heritage*, Kluwer Academic/Plenum Publishers, 2003;

Pixa R. R., "In Defense of Perpetual Title to Sovereign Wrecks", *Naval History & Heritage Command*, ref. <http://www.history.navy.mil/branches/org12-7m.htm>, last access 22/07/2012;

Plog F. T., "Archaeological Methods", in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998;

Professional Association of Diving Instructors (PADI), *World Corporate Statistics* 2011, February 2012, ref. http://www.padi.com/scuba/uploadedFiles/Scuba_--Do_not_use_this_folder_at_al/About PADI/PADI Statistics/2011%20WW%20Statistics.pdf, last access 28/09/2012;

Purpura G., "La protezione dei giacimenti archeologici in acque internazionali e la Lex Rhodia del mare", in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneo*, Vol. 4, Massa Editore, Sep. 2004;

Radić Rossi I., Gaspari A. and Pydyn A. (edited by), *Proceedings of the 13th Annual Meeting of the European Association of Archaeologists (Zadar, Croatia, 18-23 September 2007). Session: Underwater Archaeology*, Croatian Archaeological Society, Zagreb, 2008;

Rau M., "The UNESCO Convention on Underwater Cultural Heritage and the International Law of the Sea", in Frowein J. A. and Wolfrum R. (eds.), *Max Planck Yearbook of United Nations Law*, Vol. 6, 2002, ref. http://www.mpil.de/shared/data/pdf/pdfmpunyb/rau_6.pdf, last access 28/01/2012;

Regan R., "When Lost Liners Become Found: An Examination of the Effectiveness of Present Maritime Legal and Statutory Regimes for Protecting Historic Wrecks in International Waters with Some Proposals for Change", *Tulane Maritime Law Journal*, Vol. 29, ref. <http://www.reganlaw.ca/m292regan9.pdf>, last access 28/04/2011;

Reggiani A. M., "L'archeologia subacquea e navale. Le navi di Caligola a Nemi: quando i relitti riscrivono la storia", in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneo*, Vol. 4, Massa Editore, Sep. 2004;

Richards V., "In Situ Preservation - Application of a Process Based Approach to the Management of Underwater Cultural Heritage", *The Museum of Underwater Archaeology*, ref. <http://www.themua.org/collections/archive/files/8de7b2c59bbd77ea b07b3961b1c15b02.pdf>, last access 10/08/2012;

Riphagen W., "Some reflections on 'functional sovereignty'", *Netherlands Yearbook of International Law*, vol. 6, 1975;

Roach A. J., "Sunken Warships and Military Aircrafts", *Marine Policy*, Vol. 20, No. 4, Jul 1996, ref. <http://www.sciencedirect.com/science/article/pii/0308597X96000164>, last access 26/05/2011;

Roach A. J., "Shipwrecks: Reconciling Salvage and Underwater Archeology", *Panel VI: Ocean Policy Opportunities*, Jan 1998, ref. http://www.prosea.org/articles-news/exploration/SHIPWRECKS_RECONCILING_SALVAGE.html, last access 05/01/2011;

Roberts P. and Trow S., *Taking to the Water: English Heritage's Initial Policy for The Management of Maritime Archaeology in England*, English Heritage, London, 2002, ref. <http://www.english-heritage.org.uk/content/publications/publicationsNew/guidelines-standards/taking-to-the-water/maritimearchpolicy.pdf>, last access 22/10/2012;

Robertson P., "The Visitor Scheme on the Historic Shipwrecks of the Swan and HMS Dartmouth, Sound of Mull, Scotland (UK)", in Spirek J. D. and Scott-Ireton D. A. (Edited by), *Submerged Cultural Resource Management: Preserving and Interpreting Our Sunken Maritime Heritage*, Kluwer Academic/Plenum Publishers, 2003;

Roderick Mather I. and Gordon P. Watts Jr., "Ethics and Underwater Archaeology", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Roderick Mather I. and Gordon P. Watts Jr., "Geographic Information Systems", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Salaris V., Brodasca V. and De Santis H., *Archeologia Subacquea*, Ananke, 2009;

Satchell J. and Palma P. (Edited by), *Managing the Cultural Heritage: Defining, accessing and managing the resource*, Council for British Archaeology, 2007;

Satterfield T., "Numbness and sensitivity in the elicitation of environmental values", in De la Torre M. (edited by), *Assessing the Values of Cultural Heritage*, Research Report From the Getty Conservation Institute, Los Angeles, 2002, ref. http://www.getty.edu/conservation/publications/pdf_publications/assessing.pdf, last access 26/05/2011;

Scott C. A., "Exploring the evidence base for museum value", *Museum Management and Curatorship*, Vol. 24, Issue 3, 2009, ref. <http://www.tandfonline.com/doi/pdf/10.1080/09647770903072823>, last access 06/10/2011;

Scott-Ireton D. A., "Florida's Underwater Archaeological Preserves", in Spirek J. D. and Scott-Ireton D. A. (Edited by), *Submerged Cultural Resource Management: Preserving and Interpreting Our Sunken Maritime Heritage*, Kluwer Academic/Plenum Publishers, 2003;

Scott-Ireton D. A., *Preserves, Parks, and Trails: Strategies and Response in Maritime Cultural Resource Management*, Doctoral Thesis, Florida State University, Department of Anthropology, 2005, ref. <http://etd.lib.fsu.edu/theses/available/etd-11132005-215705/>, last access 20/09/2012;

Scott-Ireton D. A., "Florida's Underwater Archaeological Preserves: Preservation through Education", in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006, ref. <http://www.international.icomos.org/risk/2006/fulldocan.pdf>, last access 03/05/2011;

Scott-Ireton D. A., "Shared Heritage: British Shipwrecks in Florida", in S. Gallagher (edited by), *Shared Heritage: Joint Responsibilities in the Management of British Warship Wrecks overseas*, seminar collected papers, 8th July 2008, at the University of Wolverhampton, English Heritage, Swindon, 2009, ref. <http://www.english-heritage.org.uk/publications/management-of-british-warship-wrecks-overseas/shared-heritage-management-of-british-warship-wrecks-overseas.pdf#page=36>, last access 26/07/2012;

Scovazzi T., "La protezione del patrimonio culturale subacqueo, con particolare riguardo alle navi da guerra", in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002 a;

Scovazzi T., "The 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage", in Camarada G. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Legal Aspects*, Giuffrè Editore, Milano, 2002 b;

Scovazzi T., "A Contradictory and Counterproductive Regime", in Garabello R. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Before and After the 2001 UNESCO Convention*, Publications on Ocean Development, Vol. 41, Martinus Nijhoff Publishers, Leiden, 2003 a;

Scovazzi T., "The Application of "Salvage Law and Other Rules of Admiralty" to the Underwater Cultural Heritage: Some Relevant Cases", in Garabello R. and Scovazzi T. (edited by), *The Protection of the Underwater Cultural Heritage: Before and After the 2001 UNESCO Convention*, Publications on Ocean Development, Vol. 41, Martinus Nijhoff Publishers, Leiden, 2003 b;

Scovazzi T., "The 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage", in Hoffman B. T. (Edited by), *Art and Cultural Heritage: Law, Policy and Practice*, Cambridge University Press, 2006;

Scovazzi T., "The Protection of the Underwater Cultural Heritage: an Italian Perspective", in Vrdoljak A. F. and Francioni F., *The Illicit Traffic of Cultural Property in the Mediterranean*, EUI Working Paper AEL, Sep. 2009, ref.
http://cadmus.eui.eu/bitstream/handle/1814/12053/AEL_2009_09.pdf?sequence=1, last access 26/10/2010;

Shiner J. L., "Underwater Archaeology, European versus American", in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998;

Sinclair J., "Threats to Underwater Cultural Heritage - Real & Imagined", *Odyssey Marine Exploration Papers* 13, 2010, ref. http://www.shipwreck.net/pdf/OMEPapers13-UNESCO_000.pdf, last access 08/11/2010;

Smith H. D. and Couper A. D., "The Management of the Underwater Cultural Heritage", in *Journal of cultural Heritage* 4, 2003, ref. <http://202.114.89.60/resource/pdf/2328.pdf>, last access 20/11/2010;

Smith R. C., "Florida Frontiers: From Ice Age to New Age", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Smith S. O., "Education: The Power Tool of Underwater Archaeology", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Smith T., "Shipwreck Trails: Public Ownership of a Unique Resource?", in Spirek J. D. and Scott-Ireton D. A. (Edited by), *Submerged Cultural Resource Management: Preserving and Interpreting Our Sunken Maritime Heritage*, Kluwer Academic/Plenum Publishers, 2003;

Spirek J. and Harris L., "Maritime Heritage on Display: Underwater Examples from South Carolina", in Spirek J. D. and Scott-Ireton D. A. (Edited by), *Submerged Cultural Resource Management: Preserving and Interpreting Our Sunken Maritime Heritage*, Kluwer Academic/Plenum Publishers, 2003;

Spirek J. D. and Scott-Ireton D. A. (Edited by), *Submerged Cultural Resource Management: Preserving and Interpreting Our Sunken Maritime Heritage*, Kluwer Academic/Plenum Publishers, 2003;

Staniforth M., "Public access to maritime archaeology", *The Bulletin of the Australian Institute for Maritime Archaeology*, Vol. 18, no. 1, 1994, ref. <http://flinders.academia.edu/MarkStaniforth/Papers/325020/Public-Access-to-Maritime-Archaeology>, last access 25/05/2011;

Staniforth M., "Australian approaches to defining and quantifying underwater cultural heritage: learning from our mistakes", in Satchell J. and Palma P. (Edited by), *Managing the Cultural Heritage: Defining, accessing and managing the resource*, Council for British Archaeology, 2007;

Staniforth M., "Collaboration is the key: Developing field and work skills in collaboration with government, museum and commercial underwater cultural heritage organizations", in Radić Rossi I., Gaspari A. and Pydyn A. (edited by), *Proceedings of the 13th Annual Meeting of the European Association of Archaeologists (Zadar, Croatia, 18-23 September 2007). Session: Underwater Archaeology*, Croatian Archaeological Society, Zagreb, 2008;

Staniforth M., "Australian approaches to shared heritage: Royal Navy vessels in Australian waters", in S. Gallagher (edited by), *Shared Heritage: Joint Responsibilities in the Management of British Warship Wrecks overseas*, seminar collected papers, 8th July 2008, at the University of Wolverhampton, English Heritage, Swindon, 2009, ref. <http://www.english-heritage.org.uk/publications/management-of-british-warship-wrecks-overseas/shared-heritage-management-of-british-warship-wrecks-overseas.pdf#page=36>, last access 26/07/2012;

Staniforth M., "The Flinder University Intensive Program in Underwater Cultural Heritage Management", *Proceedings of the Inaugural Asia-Pacific Regional Conference on Underwater Cultural Heritage*, Asian Academy for Heritage Management, Manila, 2011, ref. http://monash.academia.edu/MarkStaniforth/Papers/1214977/The_Flinders_University_Intensive_Program_in_Underwater_Cultural_Heritage_Management, last access 22/06/2012;

Staniforth M., "Asia-Pacific Underwater Cultural Heritage", MUA, ref. <https://muablog.wordpress.com/2011/04/12/asia-pacific-underwater-cultural-heritage-by-dr-mark-staniforth/>, last access 15/07/2012;

Stemm G. and Bederman D. J., "Virtual Collections and Private Curators: A Model for the Museum of the Future", *Odyssey Marine Exploration Papers* 14, 2010, ref. <http://www.shipwreck.net/pdf/OMEPapers14-PrivateCurators.pdf>, last access 20/11/2010;

Stemm G., "Differentiation of Shipwreck Artifacts as a Resource Management Tool", *Association of Dive Contractors/Marine Technology Society UI2000 Conference*, Jan. 2000, ref. <http://shipwreck.net/gsarticle14.php>, last access 20/11/2010;

Stemm G., "Protecting the Past: UNESCO Versus the Private Collector", *Odyssey Marine Exploration Papers* 13, 2010, ref. http://www.shipwreck.net/pdf/OMEPapers13-UNESCO_000.pdf, last access 08/11/2010;

Stemm G., "The Artifact Debate - Part II", *UnderWater Magazine*, Jan./Feb. 2000, ref. <http://shipwreck.net/gsarticle05.php>, last access 20/11/2010;

Stemm G., "The New UNESCO Convention: Rules You Need To Know", *UnderWater Magazine*, Jan./Feb. 2002, ref. <http://shipwreck.net/gsarticle12.php>, last access 20/11/2010;

Stemm G., "UNESCO Gets Its Feet Wet", *Minerva: International Review of Ancient Art and Archeology*, Jan. 2002, ref. <http://shipwreck.net/gsarticle13.php>, last access 20/11/2010;

Stern J. S., "Smart Salvage: Extending Traditional Maritime Law to Include Intellectual Property Rights in Historic Shipwrecks", *Fordham Law Review*, Vol. 8, Issue 6, 2000;

Stockholm Visitors Board, *Facts about Stockholm's tourism industry*, 2011, ref. http://traveltrade.visitstockholm.com/Documents/Facts-statistics/Fakta_turism_ENG%20-11%20LR.pdf, last access 05/09/2012;

Strecker A., "Pirates of the Mediterranean? The Case of the 'Black Swan' and its Implications for the Protection of Underwater Cultural Heritage in Mediterranean Region", in Vrdoljak A. F. and Francioni F., *The Illicit Traffic of Cultural Property in the Mediterranean*, EUI Working Paper AEL, Sep. 2009, ref. http://cadmus.eui.eu/bitstream/handle/1814/12053/AEL_2009_09.pdf?sequence=1, last access 26/10/2010;

Swedish National Maritime Museums, *Årsedovisnig 2011*, Stockholm, 2011, ref. http://www.maritima.se/Global/Maritima/Om_oss/%c3%85rsredovisningar/%c3%85R2011Statensmaritimamuseer.pdf, last access 09/09/2012;

Taylor K., "Cultural heritage management: a possible role for charters and principles in Asia", *International Journals of Heritage Studies*, Vol. 10, Issue 5, 2004, ref. <http://www.tandfonline.com/doi/pdf/10.1080/1352725042000299045>, last access 04/10/2011;

Terrell B. G., "Florida Keys National Maritime Sanctuary Shipwreck Trail: A Model for Multiple-Use Resource Management", at Spirek J. D. and Scott-Ireton D. A. (Edited by), *Submerged Cultural Resource Management: Preserving and Interpreting Our Sunken Maritime Heritage*, Kluwer Academic/Plenum Publishers, 2003;

Terrell B. G., "The National Oceanic and Atmospheric Administration", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Throckmorton P., "The World's Worst Investment: The Economics of Treasure Hunting with Real-Life Comparisons", in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998;

Throsby D., "Determining the Value of Cultural Goods: How Much (or How Little) Does Contingent Valuation Tell Us?", *Journal of Cultural Economics*, Vol. 27, Netherlands, 2003, ref. <http://www.springerlink.com/content/w830487216772346/fulltext.pdf>, last access 26/05/2011;

Tolson H. and Gerth E., "The Myth of In Situ Preservation: New Evidence from the Deep", *Civil War*, Vol. 34, No. 1, 2009, ref. <http://www.shipwreck.net/pdf/CivilWarGerthTolsonHR.pdf>, last access 26/10/2010;

Tusa S., "Ricerca e tutela archeologica subacquea in Sicilia nel quadro delle problematiche mediterranee", in Maniscalco F. (a cura di), *Tutela, Conservazione e Valorizzazione del Patrimonio Culturale Subacqueo, Mediterraneum*, Vol. 4, Massa Editore, Sep. 2004;

Vadi V. S., "The Protection of Underwater Cultural Heritage in International Law: Challenges and Perspectives", at Vrdoljak A. F. and Francioni F., *The Illicit Traffic of Cultural Property in the Mediterranean*, EUI Working Paper AEL, Sep. 2009, ref. http://cadmus.eui.eu/bitstream/handle/1814/12053/AEL_2009_09.pdf?sequence=1, last access 26/10/2010;

Vadi V. S., *International Law and the Uncertain Fate of Military Sunken Vessels*, N.D., ref. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1945736, last access 26/07/2012;

Van Tilburg H., "Japanese Midget Sub at Pearl Harbor: Collaborative Maritime Heritage Preservation", in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006, ref. <http://www.international.icomos.org/risk/2006/fulldocan.pdf>, last access 03/05/2011;

Varmer O., "New International Law to Protect Underwater Cultural Heritage", *American Bar Association Section of International Law*, Fall 2008, Vol. 1, Issue No. IV, ref. <http://www.abanet.org/intlaw/committees/ARTLAWNEWSLETTERIV.pdf>, last access 26/10/2010;

Varmer O., "RMS Titanic", in Grenier R., Nutley D. and Cohran I. (edited by), *Underwater Cultural Heritage at Risk: Managing Natural and Human Impacts*, ICOMOS, 2006, ref. <http://www.international.icomos.org/risk/2006/fulldocan.pdf>, last access 03/05/2011;

Varmer O., Gray J. and Alberg D., "United States: Responses to the 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage", *Journal of Maritime Archaeology*, Vol. 5, Num. 2, Dec. 2010 (published on-line), ref. <http://www.springerlink.com/content/311g661401ru1177/>, last access 25/07/2011;

Villegas Zamora T., "Challenges faced by underwater archaeology in Latin America and the Caribbean: Learning from experience", in Radić Rossi I., Gaspari A. and Pydyn A. (edited by), *Proceedings of the 13th Annual Meeting of the European Association of Archaeologists (Zadar, Croatia, 18-23 September 2007). Session: Underwater Archaeology*, Croatian Archaeological Society, Zagreb, 2008;

Villegas Zamora T., "The Impact of Commercial Exploitation on the Preservation of Underwater Cultural Heritage", *Museum International*, Vol. 60, Issue 4, 2009, ref. <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-0033.2008.00662.x/pdf>, last access 07/11/2011;

Vos A., "The Burgzand-project and MoSS" *MoSS Newsletter* 5, December 2003, ref. http://www.maritiemprogramma.nl/documenten/MoSS/moss_newsletter5.pdf, last access 25/09/2012;

Vrana K. J. and Vander Stoep G. A., "The Maritime Cultural Landscape of the Thunder Bay National Maritime Sanctuary and Underwater Preserves", in Spirek J. D. and Scott-Ireton D. A. (Edited by), *Submerged Cultural Resource Management: Preserving and Interpreting Our Sunken Maritime Heritage*, Kluwer Academic/Plenum Publishers, 2003;

Vrdoljak A. F. and Francioni F., "Legal Protection of Cultural Objects in the Mediterranean Region: An Overview", in Vrdoljak A. F. and Francioni F., *The Illicit Traffic of Cultural Property in the Mediterranean*, EUI Working Paper AEL, Sep. 2009, ref. http://cadmus.eui.eu/bitstream/handle/1814/12053/AEL_2009_09.pdf?sequence=1, last access 26/10/2010;

Vrdoljak A. F. and Francioni F., *The Illicit Traffic of Cultural Property in the Mediterranean*, EUI Working Paper AEL, Sep. 2009, ref. http://cadmus.eui.eu/bitstream/handle/1814/12053/AEL_2009_09.pdf?sequence=1, last access 26/10/2010;

Wachsmann S. and Davis D., "Nautical Archaeology in Israel", in Ruppé C. V. and Barstad J. F. (edited by), *International Handbook of Underwater Archaeology*, Kluwer Academic/Plenum Publishers, New York, 2002;

Waddell P. J. A., "Electronic Mapping of Underwater Sites", in Babits L. E. and Van Tilburg H., *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*, Plenum Press, New York and London, 1998;

Waugh K. E., *Discovering the Archaeologists of Europe: The Netherlands*, Vestigia BV, Archeologie & cultuurexploratie, V595, Sept. 2008, ref. http://www.discovering-archaeologists.eu/national_reports/DISCO_national_Netherlands_English_final.pdf, last access 20/10/2012;

Weirich J., "Connecting with the past: using online tools, techniques, and partnerships to explore our maritime heritage", in Satchell J. and Palma P. (Edited by), *Managing the Cultural Heritage: Defining, accessing and managing the resource*, Council for British Archaeology, 2007;

Wheatley D., "The impact of information technology on the practice of archaeological management", in Cooper M. A., Firth A., Carman J. and Wheatley D. (edited by), *Managing Archaeology*, Routledge, London, 1995;

Whitehead J. C. and Finney S. S., "Willingness to Pay for Submerged Maritime Cultural Resources", *Journal of Cultural Economics*, Vol. 27, 2003, ref. <http://www.springerlink.com/content/qm1323214m171j4/>, last access 28/04/2011;

Wijkander K., "The role of the traditional museum", in Satchell J. and Palma P. (Edited by), *Managing the Cultural Heritage: Defining, accessing and managing the resource*, Council for British Archaeology, 2007;

Xiurun Ge, "Baiheliang Ancient Hydrologic Inscription – No.1 Ancient Hydrometric Station in the World and In-situ Underwater Protection Project", *Proceedings of the International Meeting on the Protection, Presentation and Valorization of Underwater Cultural Heritage*, Chongqing (China), 2010, ref. <http://www.unesco.org/culture/underwater/pdf/Baiheliang-GeXiurun-EN.pdf>, last access 12/10/2012;

Yorke R. A. (edited by), "Introduction: Protection of Underwater Cultural Heritage in International Waters adjacent to UK – a JNAPC perspective 21 years on", in Yorke R. A. (edited by), *Protection of underwater cultural heritage in international waters adjacent to UK*, proceedings of the JNAPC 21st anniversary seminar, Burlington House November 2011, The Nautical Archaeology Society, Portsmouth, 2011, ref. <http://www.jnapc.org.uk/UNESCO-Seminar-2010-final.pdf>, last access 26/03/2012;

Yorke R. A. (edited by), *Protection of underwater cultural heritage in international waters adjacent to UK*, proceedings of the JNAPC 21st anniversary seminar, Burlington House November 2011, The Nautical Archaeology Society, Portsmouth, 2011, ref. <http://www.jnapc.org.uk/UNESCO-Seminar-2010-final.pdf>, last access 26/03/2012;

Zhang Y., *Rethinking Cultural Heritage: Valuations and Dilemmas*, University of Cambridge Development Studies, May 2010, ref. <http://www.acei2010.com/upload/acei/zhang.pdf>, last access 26/05/2011;

Selected web sites (alphabetically ordered)⁷⁸⁸

Australian Institute of Maritime Archaeology (AIMA):
<http://www.aima-underwater.org.au/>;

Coronation Wreck Project:
<http://www.coronationwreck.co.uk/index.html>;

Deep Sea Productions: <http://www.deepsea.se/>;

English Heritage, Protected Wreck Sites (UK): <http://www.english-heritage.org.uk/discover/maritime/map/>;

Estonian Shipwher Project: <http://www.muinas.ee/shipwher-1>;

Florida Public Archaeology Network:
<http://www.flpublicarchaeology.org/>;

Friends of the Hunley: <http://www.hunley.org/>;

Hampshire and Wight Trust for Maritime Archaeology:
<http://www.hwtma.org.uk/>;

Hazardous Project: <http://www.hazardousproject.info/>;

IKUWA 4 Conference: <http://www.ikuwa4.com/>;

Institute of Nautical Archaeology (INA):
<http://inadiscover.com/about/introduction/>;

International Center for Underwater Archaeology in Zadar:
<http://icua.hr/en>;

Italian Archeomar Project: <http://www.archeomar.it/index.php>;

Machu Project: <http://www.machuproject.eu/>;

Marine Museum of Karlskrona: <http://www.marinmuseum.se/en/>

Maritime Archaeological Research Institute (MARIS):
https://webappl.web.sh.se/p3/ext/content.nsf/aget?openagent&key=archive_1321961868125

MMT Group: <http://www.mmt.se/>;

MoSS Project: <http://www.mossproject.com>;

Nord Stream: <http://www.nord-stream.com/>;

⁷⁸⁸ Last access to these web-sites: 25/08/2012.

Ocean Discovery: <http://www.ocean-discovery.org/>;

Odyssey Marine Exploration: <http://www.shipwreck.net/>;

The Asia-Pacific Regional Capacity-Building Program on Underwater Cultural Heritage: http://www.unescobkk.org/culture/uch/capacity-building/?utm_medium=twitter&utm_source=dlvr.it;

The Museum of Underwater Archaeology: <http://www.uri.edu/artsci/his/mua/MUA.htm>;

The Wreck of the Battleship Bismarck: <http://www.kbismarck.com/wreck.html>;

Underwater Park of Baia: <http://www.parcoarcheologicosommersodibaia.it/>;

UNESCO Web-Site on the Underwater Cultural Heritage: <http://www.unesco.org/new/en/unesco/themes/underwater-cultural-heritage/>;

Vasa Museum: <http://www.vasamuseet.se/>;

Venus Project: <http://sudek.esil.univmed.fr/venus/>;

Wreck Protect Project: <http://wreckprotect.eu/index.php?id=12679>;