

Heritage today, gone tomorrow: *in situ* preservation of underwater cultural heritage in law and practice

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For my father,
Ron M. Shefi

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Abstract

Reflecting current trends in practice and research toward a universally recognised best practice for underwater cultural heritage (UCH) management, international guidelines encourage the utilisation of *in situ* preservation as the ‘first option’ in securing these non-renewable resources. *In situ* UCH management is identified as the prime standard by both the 2001 United Nations Educational, Scientific and Cultural Organization’s (UNESCO) *Convention on the Protection of the Underwater Cultural Heritage* and the 1996 International Council on Monuments and Sites’ (ICOMOS) *Charter on the Protection and Management of Underwater Cultural Heritage*. At present, however, neither UNESCO nor ICOMOS explicitly define the suggested ‘first option’. As such, the scope and context of *in situ* preservation is open to interpretation, and can be construed to exclude a number of *in situ* management techniques currently employed by heritage practitioners – including relocation and underwater repositories. As many practitioners rely on the 2001 Convention and its Annex to support domestic legislation, or as the stand-alone reference in lieu of domestic law, it is imperative that the interpretation of the ‘first option’ is not at once inclusive and unequivocally defined. This study therefore examines whether an assessment of international conventions and guidelines, domestic laws inclusive of heritage materials and practitioners’ publications relating to UCH, with a specific focus on *in situ* preservation, can identify discordance between practitioners interpretation of the law and applied practice. The analysis occurs with the examination of three genres of literature forming the basis of UCH management (international and domestic laws enacted as of July 2012 and practitioner publications) and an assessment of five case studies applying various *in situ* preservation techniques within site management. The data and discussion of results will demonstrate if and how managerial terminology requires clarification within the assessed literature. More specifically, conclusions will aid in the development of a more robust and well-supported definition of *in situ* preservation, which can be applied as a global best practice for UCH management.

DECLARATION

I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Debra G. Shefi

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Abbreviations

AHSPP	Australian Historic Shipwreck Preservation Project
CAME	Conference of Allied Ministers of Education
CCS	Convention on the Continental Shelf
Ch	Chapter
CHS	Convention of the High Seas
CISMAS	Cornwall and Isle of Scilly Maritime Archaeology Society
CTSCZ	Convention on the Territorial Sea and the Contiguous Zone
DOALOS	United Nations Division for Ocean Affairs and the Law of the Sea
EEZ	Exclusive Economic Zone
EU	European Union
fHPL	former Hovell Pile Light
GPS	Global Positioning System
ICOMOS	International Council of Monuments and Sites
ICUCH	International Committee on Underwater Cultural Heritage
ILA	International Law Association
ISA	International Seabed Authority
MAAV	Maritime Archaeology Association of Victoria
MAU	Victorian Archaeological Survey, Maritime Archaeology Unit
MoSS	Monitoring, Safeguarding and Visualising North-European Shipwreck Sites
NOAA	National Oceanic and Atmospheric Administration
NSW	New South Wales
OLOS	A Historic Perspective' on Oceans and Law of the Sea
RAAR	The Reburial and Analyses of Archaeological Remains project
SCUBA	Self-Contained Underwater Breathing Apparatus
Sec	Section
SP	State Party
Sub-s	Sub-section
TBTO	Tri-butyl-tin oxide
UCH	Underwater cultural heritage

UK	United Kingdom
UN	United Nations Organisation
UNCLOS I	1958 United Nations Convention on the Law of the Sea
UNCLOS II	1960 United Nations Convention on the Law of the Sea
UNCLOS III	1982 United Nations Convention on the Law of the Sea
UNESCO	United Nations Educational, Scientific and Cultural Organization
US	United States of America
USOCS	United States Office of Coast Survey
VOC	Dutch Vereenigde Oost-Indische Compagnie
WAM	Western Australian Museum
WWI	First World War
WWII	Second World War
YILC	Yearbook of the International Law Commission

1

Dipping your toe in the water: an introduction to UCH management

The application of best practice in managing cultural heritage and the debate regarding its ownership are global issues. As an all-encompassing term, heritage is defined as both the tangible and intangible aspects of society that provide an ongoing discourse of a culture's history, inheritance and progression, an insight into the past and a means of examining influences on the present (Davison 1991; Forrest 2002b; Prott & O'Keefe 1992; Schofield 2008; Smith 2006). More specifically, heritage can be classified as individual components, such as cultural heritage (together with underwater cultural heritage [UCH]), natural heritage, intangible heritage, industrial heritage and ethnographic heritage among others (Rössler 2006; Smith 2006; UNESCO 2012c).

The notion of protecting heritage in Western society was introduced under Theoderic the Great in Rome during the 5th century, and was again highlighted in Italy during the Italian Renaissance by the Bull of Pius II in 1462 (Jokilehto 2005). However, it was not until the second half of the nineteenth century that a wave of legislation was established throughout Europe and the United States aimed at protecting buildings and places considered to have religious and/or historic value (e.g. the 1807 chancellery recommendations in Denmark; the establishment in the 1830s of the Comité Historique in France; England's *Ancient Monuments Protection Act* of 1882; 1906 *Antiquities Act* in the United States [US]). Amongst the derived legislation, none included heritage located

underwater. The varying texts did, however, pave the way for twentieth-century heritage legislation (Smith 2006).

It was later, amidst the start of the First World War (WWI), that State governments proactively discussed the idea of a global committee for an international organisation promoting cultural development, education and the intellectual work for humanity (Opocensky n.d.). This was greatly influenced by the severe damage caused during the War, despite the provisions in place to safeguard cultural property under the 1899 First Peace Conference of The Hague, 1907 *Convention (IV) respecting the Laws and Customs of War on Land* and 1907 *Convention (IX) Concerning Bombardment by Naval Forces in Time of War*. Members of the newly formed Geneva institution, the League of Nations, prepared a draft convention for the betterment of heritage protection – beyond buildings and places – for application amongst the international community. Subsequently, as the preliminary text was prepared, the Second World War (WWII) began and prevented the League of Nations convening over the matter (O’Keefe & Prott 2011).

As such, it was not until 1942, during the later stages of WWII, that governments across Europe attended the Conference of Allied Ministers of Education (CAME), which further highlighted the problem of cultural reconstruction after the War, and later led to the 1945 United Nations (UN) Conference for the Establishment of an Educational and Cultural Organization. This conference included representatives from 44 countries around the world with the intent of forming an international organisation focused on embodying a “genuine culture of peace” with the “intellectual and moral solidarity of [hu]mankind” (UNESCO Constitution 1945, ‘Preamble’). At the end of the Conference, 37 participating countries (referred to as State Parties) agreed to found the United Nations Educational, Scientific and Cultural Organization (UNESCO). As it stands, UNESCO “is the sole intergovernmental organization with near universal membership which has a mandate to help States protect their cultural heritage” (Engelhardt 2006, p. 7).

Since the establishment of the organization, the international and domestic concern for cultural heritage protection has become heightened, driving a period of continued legislative evolution. To date, State Party members have ratified four tangible cultural heritage conventions: the 1954 *Convention for the Protection of*

Cultural Property in the Event of Armed Conflict (commonly referred to as the Hague Convention), the 1970 *Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property*, the 1972 *Convention Concerning the Protection of the World Cultural and National Heritage* (commonly referred to as the World Heritage Convention), and the 2001 *Convention on the Protection of the Underwater Cultural Heritage*.

Despite the establishment of UNESCO, there were still concerns from member States and the general public regarding the state of global cultural heritage and its management. This focus was predominantly directed toward those tangible items readily accessible and visible on land (Feilden & Jokilehto 1998; Smith 2006). This prompted the development of 13 resolutions during the Second Congress of Architects and Specialists of Historic Buildings, including one that formulated the creation of the International Council of Monuments and Sites (ICOMOS). The resolution to establish ICOMOS was necessitated by the perceived need for a professionally derived organisation composed of specialists from fields congruent with heritage management (i.e. architects, conservators, historians, restorators, museologists, archaeologists), intending to work towards the conservation and protection of cultural heritage internationally (ICOMOS 2011). At this time, the 1964 *Charter on the Conservation and Restoration of Monuments and Sites* (also referred to as the Venice Charter) was adopted.

In response to a growing concern regarding the exponential destruction of tangible heritage, ICOMOS created the 1990 *Charter for the Protection and Management of the Archaeological Heritage*. This text was based on the principles from the Venice Charter and other UNESCO conventions and recommendations for cultural heritage materials, with the purpose to provide guidance for government authorities, academics, researchers, private or public enterprise, and the general public to protect and manage archaeological heritage. The 1990 Charter ('Introduction') provided basic principles and guidelines with "global validity" in order to account for a range of practices around the world. This was the first adopted international heritage guideline to include "subterranean and underwater sites" as an identified component within the definition of *heritage* (ICOMOS Charter 1990, Art. 1).

Shortly thereafter, due to the increased looting of shipwrecks internationally, ICOMOS Australia was asked to form the International

Committee on the Underwater Cultural Heritage (ICUCH) to “promote international cooperation in the protection and management of” UCH and to advise ICOMOS on UCH issues (Australia ICOMOS 2013, ‘ICUCH’). The Committee led to the drafting of the 1996 *Charter on the Protection and Management of Underwater Cultural Heritage*. A key component of the 1996 Charter is Article 1, which states that *in situ* preservation should be considered as a ‘first option’ when managing an underwater archaeological site, as opposed to automatically excavating the heritage materials.

Prior to the 1996 Charter, there were no internationally accepted guidelines or recommendations on the management of UCH. And despite a strong voice amongst practitioners regarding the cultural and social significance of submerged sites, the ‘ownership’ over these heritage items and places remained questionable within legislation. This omission is strongly tied to debates from the early-1900s regarding general coastal jurisdiction beyond the traditional ‘cannon shot’ rule – approximately three nautical miles from the coast. It was during this time that a number of countries began extending their coastal boundary beyond three nautical miles in order to obtain the rights to economically valuable commodities such as mineral resources and fishing grounds; in some cases, they also established regulations regarding pollution control, thus identifying which materials sea-going vessels could legally jettison (Walker 1945). In 1930, at a conference held by the League of Nations in The Hague, the issue of extending a country’s jurisdiction beyond the traditional ‘cannon shot’ was discussed, but the committee could not come to an agreed resolution (Treves 2008a). Although UCH was not a topic listed on the conference agenda, the discussions of coastal jurisdiction over natural resources directly impact potential legislative evolution and management of UCH.

Without a UN doctrine in place, US President Harry Truman in 1945 extended domestic jurisdiction over all natural resources out to the continental shelf, which set a precedent for States to follow (NOAA n.d.). Within the next five years, four other countries also extended their jurisdiction out to 200 nautical miles – to the continental shelf; other nations similarly followed suit and extended their maritime jurisdiction, but limited the expanse out to 12 nautical miles (OLOS 1998). At the time, however, UCH was still not an addressed topic during

the discussions regarding the control of domestic maritime boundaries, and thus was excluded from the majority of maritime domestic laws.

Prior to the twentieth century, shipwrecks were subject to Merchant Shipping Legislation and Admiralty Laws. More recently, however, as maritime technology developed, the Law of Salvage and the Law of Finds were also presented within admiralty courts in order to govern the recovery of UCH (Bowman 2004; DuClos 2007; Runyan 1990; Varmer 1999). Unfortunately, there were no laws pertaining to the protection of these cultural materials, nor were there any parameters set defining the historic and archaeological value of UCH in terms of present and future public interest (Panayotopoulos 2009; Strecker 2009; Vadi 2009). With the development of the Self-Contained Underwater Breathing Apparatus (SCUBA) and the subsequent growth of recreational diving in the 1940s (Cousteau & Dumas 1953), previously inaccessible and effectively ‘invisible’ underwater heritage was revealed to the public eye; it came to the attention of the European Council that like the conventions established to protect tangible cultural heritage accessible on land, actions were also required to protect UCH.

Concurrently, however, the topics of ownership, varying jurisdictions and management of resources in the sea, particularly as pertaining to economy and national security, were once again revisited. This culminated in the 1958 UN *Convention on the Law of the Sea* (UNCLOS I). Although UNCLOS I replaced the older ‘freedom of the seas’ perspective dating to the seventeenth century (Grotius 1633), many participants felt the document did not clarify the position relating to the breadth of territorial waters (Treves 2008a). Unfortunately, during the establishment of the Convention, “wrecked ships and their cargoes (including bullion) lying on the seabed or covered by the sand or the subsoil” were consciously excluded from the Convention (YILC 1957, p. 298).

In 1960, two years after the creation of UNCLOS I, the UN held the Second Conference on the Law of the Sea (UNCLOS II); however, this convention did not yield any new agreements, and jurisdiction over UCH remained excluded from the final text. Seven years later, State representatives again raised issues regarding the jurisdictional boundaries associated with the term ‘territorial waters’, and from 1973 until 1982, more than 160 State Parties participated in a third Law of the Sea Conference. Eventually, participating

member States reached an agreement and established the text of the *Third United Nations Conference on the Law of the Sea* (UNCLOS III). During the development of the 1982 Convention, the European Council recommended developing a European convention on the protection of UCH, but a formal recommendation was never actuated (Rau 2002).

During the early 1990s, as ICOMOS was drafting the guidelines for the safeguarding and management of UCH, the International Law Association (ILA), with later assistance from ICUCH, was drafting a convention to close the gaps left by UNCLOS III and provide specified protection for UCH (Bowens 2009). The ILA's proposed UCH convention identified *in situ* preservation as the 'first option' for UCH management, and included the 1996 Charter as an Annex to the draft (Dromgoole 2013; O'Keefe 1996). Shortly thereafter, 75 UNESCO State Parties met to discuss the text (Smith & Couper 2003), and by 2001 more than 100 States convened to help finalise the proposed convention. On November 2, 2001, the text of the 2001 UNESCO *Convention on the Protection for the Underwater Cultural Heritage* was adopted in Paris, France.

The problem and the research question

Since the advent of recreational SCUBA and the increase in accessibility of the underwater environment, practitioners (i.e. archaeologists, cultural heritage managers, conservators) have been pushing to include UCH within the protection of international heritage legislation. In recent years, the roles and responsibilities outlined by UNESCO and ICOMOS provided practitioners with a suggested set of guidelines, in which documents from both organisations encouraged the use of *in situ* preservation as the 'first option' for managing UCH. Prior to its inclusion in the 1996 and 2001 texts, *in situ* preservation was initially presented in conjunction with cultural heritage traditionally located on land (i.e. 1970 UNESCO Convention, 1990 ICOMOS Charter, 1999 UNESCO Convention).

Interestingly, as early as the 1980s, practitioners in Europe were already trialling *in situ* preservation techniques on UCH (Manders 2009). By the time international organisations broached the topic of UCH within law, the preventative and proactive *in situ* preservation methods were already in use, and

to date range from backfilling, sediment and gravel dumping, Hessian and polymeric sandbagging, deposition of ballast and stones, to the use of textiles, metal netting, artificial and natural seagrasses, sediment encapsulation, toxins, trenches, and iron and plastic fences to help rebury exposed UCH (Harvey 1996; Moran 1997a, 1997b; Oxley 1998a; Waddell 2007). A clearly stated definition of *in situ* preservation, however, is absent from assessed UNESCO and ICOMOS texts. Comparatively, although the abovementioned techniques are applied in association with the *in situ* terminology, practitioners have yet to reach a universal consensus regarding what constitutes the ‘first option’.

For many heritage managers, the ultimate goal in the application of *in situ* preservation is the ability to create and maintain a stable, protective environment for UCH (Manders et al. 2008; Ortmann et al. 2010; Van de Noort et al. 2001). This therefore affords future generations the ability to access and re-assess sites as technology and methods employed within the field become more advanced or as further research questions arise. Others, however, interpret *in situ* preservation to have a more static association, and equate the method with a ‘do nothing’ approach (Ortmann 2009; Ortmann et al. 2010). While some practitioners may not disagree with this statement, if UCH is located in an exposed or dynamic environment, a passive response will do nothing for the long-term preservation of the site or its heritage content. In order to more adeptly manage archaeological materials impacted by extreme tidal movement, sand movement, coastal erosion, looting, salvage, nearby construction or marine organisms, an appropriate, active *in situ* preservation technique suited to the specific environmental conditions should be applied.

It may therefore be more beneficial to introduce a clearer definition for UCH best practice that may include actively managing a site “in order to extend its longevity” despite maintaining original context and spatial position (Ortmann et al. 2010, p. 28). Unfortunately, although vague recommendations and guidelines presented in UNESCO and ICOMOS texts enable a wider range of heritage management, a universal best practice cannot effectively be established without providing a formalised definition for *in situ* preservation beyond the literal ‘preservation *in place*’. The discontinuity between an active position, a passive ‘do nothing’ approach and the methods ranging in between deters the establishment of an agreed upon ‘first option’.

Additionally, due to the non-renewable nature of UCH, protecting and preserving archaeological sites with the aid of *in situ* techniques is being presented among practitioners as an ethical issue. Without identifying what is included within the application of *in situ* preservation, many practitioners may knowingly or unknowingly act not in accordance with the evolving ethical perspective for UCH management. As will be demonstrated throughout this thesis, the inconsistencies between practitioners' interpretations of the range of definitions for *in situ* preservation, coupled with the lack of defined associations for the terminology within legislative texts, are of significant international concern.

Research in countries such as Australia, Denmark, Sweden, the Netherlands and Canada has demonstrated that the application of appropriate *in situ* preservation techniques may assist in decreasing the degradation rate of UCH sites and their associated artefacts (Bergstrand 2002; Bergstrand & Nyström Godfrey 2006; Björdal & Nilsson 2006, 2008; Curci 2006; Gregory 1998; Grenier 2007; Manders 2006b; Manders et al. 2008; Nyström Gregory 2002; Nyström Godfrey et al. 2006). Research further suggests that any method of *in situ* preservation, whether proactive or reactive, should reflect the importance of archaeological context as well as site formation processes, while mitigating exponential degradation of UCH after exposure. This is why the abovementioned techniques strategically focus on the reburial of UCH.

The broad range of scientific data regarding the effectiveness of varying preservation techniques from research projects in the aforementioned countries strengthen the argument for developing an internationally accepted definition for *in situ* preservation, inclusive of associated and acceptable *in situ* techniques. A 'do nothing' preservation approach can contradict the desired result for establishing site stability if environmental conditions or human access are unfavourable. Notably, in 2012, in response to inquiries directed at the 2001 UNESCO Convention and associated Annex, UNESCO, with assistance from cultural heritage managers internationally, developed the *Manual for Activities Directed at Underwater Cultural Heritage*. The document "is designed to help specialists and decision-makers understand" the rules presented within the Annex of the 2001 Convention (Bokova 2012, 'Forward'), including the 'first option'.

Across the scope of cultural heritage management, many of the practitioners employing *in situ* techniques for UCH preservation are doing so without specific legislative support. There are, however, a range of domestic laws – heritage laws, environmental laws, constitutions and maritime jurisdictional laws – inclusive of UCH. Unfortunately, there are inconsistencies within both heritage-focused and merely heritage-inclusive legislation, specifically, in regard to the jurisdictional boundaries and the prescribed managerial lexicon employed within these texts. Of the State Parties to include UCH within law, legislation refers to any number of heritage-identifying terms (for example: antiquities, archaeological sites, artefacts, cultural heritage, cultural patrimony, cultural property, monuments, objects, relics), with legal protection variously covering a range of jurisdictional waters, from internal waters out to the seaward limit of the continental shelf. Moreover, the management of sites ranges from establishing and enforcing legislation, cataloguing shipwreck material and sites through a National Register, undertaking site significance assessments, to implementing internationally accepted standards of best practice. Regrettably, there are a number of State Parties that are currently unable to enact or amend UCH inclusive legislation, which results in the omission of protection for heritage materials beyond the terrestrial limits or in some cases, allows treasure hunting and salvage activities directed at UCH in territorial waters (i.e. Haiti, US).

Given that a large number of State Parties lack domestic cultural heritage laws specifically inclusive of UCH, a stronger definition for identified terms of interest applied within international heritage legislation has the potential to aid in establishing more effective domestic UCH management. It is therefore imperative to address managerial terminology (i.e. *conservation*, *preservation*, *protection* and the *in situ* derivatives of each term) applied within international texts, in conjunction with State Party laws, to determine how the lexicon presented in law relates to techniques employed by practitioners.

This study therefore seeks to examine whether an assessment of international heritage laws and guidelines, domestic legislation inclusive of heritage materials, and practitioners' publications pertaining to UCH demonstrates discord between law and practice. In addressing the research question, this thesis aims to determine if there are inconsistencies within the scope of relevant legislation relating to UCH and its management (i.e. varying

terminology employed within international texts, inconsistent terminology applied within State Party laws throughout both a single UNESCO-delineated region and globally, and among practitioners' publications). The study further seeks to identify areas of the related vocabulary that would benefit from universal clarification to more effectively streamline the three genres of literature.

In order to provide perspective, this thesis first assesses the global legislative climate impacting UCH management. This includes practitioners' concerns with domestic legislation, the pragmatic practice of efficiently and successfully managing UCH and differing perspectives on *in situ* preservation. The analysis continues with an assessment and comparison of cultural-identifying terms employed and defined within the various international conventions and guidelines. This is necessary to better understand the evolution of terminology utilised in UN and UNESCO heritage-inclusive laws and ICOMOS guidelines, and assists in evaluating where these documents relate to cultural heritage today; international meetings held prior to the establishment of these texts are included in the examination process in order to track the progression of the international cultural-identifying lexicon over time.

The process of assessing the international laws and guidelines prompts an investigation of State Party domestic laws. The countries included in this study are based on the 195 State Parties listed in association with UNESCO. Key terms in identifying and defining cultural materials and jurisdictional boundaries, and the managerial lexicon employed within domestic laws are tabulated and correlated based on location (i.e. either landlocked or coastal) and region.

Not all of the 195 UNESCO affiliated State Parties have official English translations of their domestic laws available; therefore, either unofficial translations are included or excerpts referenced in professional publications are evaluated in the assessment. As a result, the focus of this analysis concentrates on regional trends based on these identifying terms. Each State Party is associated with one or more of the UNESCO regional groups – 'Africa', 'Arab States', 'Asia and the Pacific', 'Europe and North America', and 'Latin American and the Caribbean'. These groupings are based on the execution of UNESCO's regional activities, not necessarily by geographical location (Figure 1) (UNESCO 2012a). The trends in domestic legislation are compared to the terminology employed in the assessed international documents in order to demonstrate whether or not there

is continuity between heritage legislation, with a specific interest in UCH management.

The thesis also aims to identify weaknesses in regard to the definition and application of *in situ* preservation within law and practice independently. This includes assessing the practicalities of *in situ* preservation and practitioners' perspectives of the various *in situ* methods utilised within the field. As there are a number of techniques employed in association with *in situ* preservation internationally, it is important to delve further into the differing definitions and prescribed methodologies within the UCH lexicon in order to better understand the extent of the various interpretations. This is subsequently supported by the utilisation of five case studies, which are presented as a method of linking research data from the literature reviews to a practical context. The case study analyses further investigate the need to establish a more conclusive definition of *in situ* preservation and associated techniques for the specified managerial lexicon.

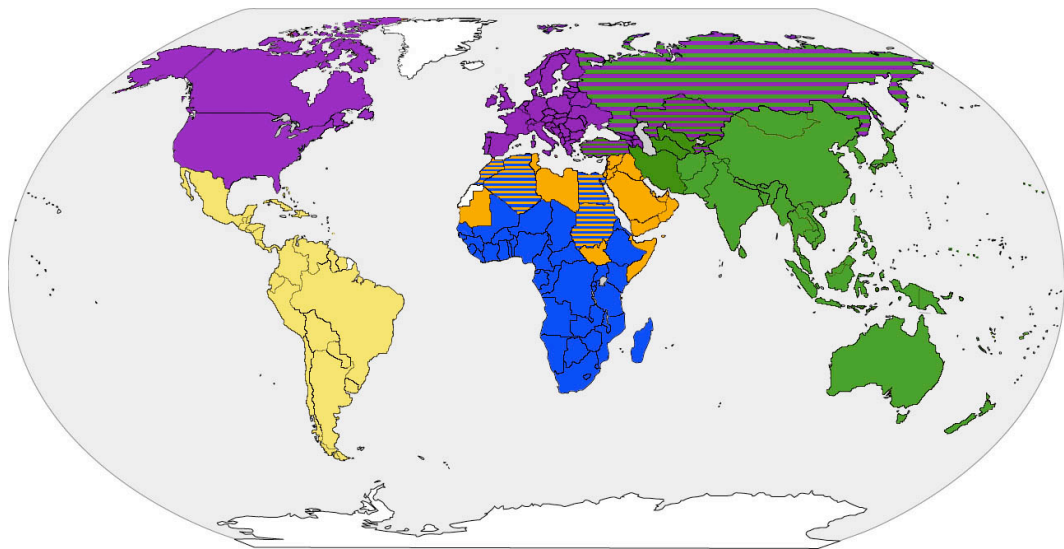


Figure 1 Map of UNESCO-delineated region: blue – Africa; orange – Arab States; green – Asia and the Pacific; purple – Europe and North America; yellow – Latin America and the Caribbean. The stripes refer to State Parties associated with two different UNESCO regions, which are coloured by the affiliated global area.

The assessment of each case study includes a review of the domestic legislation relevant to each site, the applied management techniques with specific reference to *in situ* preservation methods, and addresses how each project fits within international ‘first option’. These case studies include HMS *Colossus* in

the UK; *James Matthews* in Australia; the former Hovell Pile Light (fHPL) in Australia; *Clarence* in Australia; and the Reburial and Analyses of Archaeological Remains project (RAAR) in Sweden. Each site was chosen because practitioners involved in the project directly associated the methodologies applied on site with *in situ* preservation. Additionally, the projects discussed either influenced the establishment of legislation, applied legislatively controversial methods for the protection of UCH, or are examples of how *in situ* preservation can or cannot fit within pre-existing legislation. The case study literature examined, in conjunction with the previous data from this thesis, helps to distinguish whether or not more refined definitions or associations for *in situ* preservation and other managerial lexicon are necessary to clarify management methods within a legal context. This data can provide governments and practitioners with a stronger argument for more effective long-term preservation of UCH.

Methodology through discourse

The body of this thesis is an analysis of texts ranging from practitioner publications to international and domestic legal documents. The specific literature included in this study provides a comprehensive and diverse perspective on UCH and its management, and demonstrates the impact that terminology within law and practice has on the protection of heritage materials located underwater.

A literature review is defined as being “a systematic, explicit and reproducible method for identifying, evaluating and synthesizing the existing body of completed and recorded work produced by researchers, scholars and practitioners” (Dobinson & Johns 2007, pp. 22-23). The literature reviews produced in this thesis are independent of one another, but are analysed under a mixed-method design (Creswell & Plano Clark 2011; Flick 2009). Research methods scholars Abbas Tashakkori and Charles Teddlie (2003, p. xi) argue that a true mix-method design incorporates “multiple approaches in all stages of the study (i.e. problem identification, data collection, data analysis, and final inference) and... include[s] a transformation of the data and their analysis through another approach.” The application of a mixed-method design allows the

independent review of each category of text under discourse analysis, providing both quantitative and qualitative data, as well as enabling the correlation of data through triangulation. Triangulation allows qualitative and quantitative results to be pursued in parallel, analysed separately, and merged throughout the discussion (Creswell & Plano Clark 2011). In general, this linguistics approach utilises texts as the communication system between institutions and individuals.

The analysis of practitioners' publications identifies the professional issues concerning legislation and the practicality of effectively managing UCH. The research methodology also provides for a qualitative analysis of the definitions and employment of *in situ* preservation in order "to discover important categories, dimensions, and interrelationships" between the definitions and applications of the lexicon throughout the practitioners' community (Martella et al. 1999, p. 263). These documents are analysed for the application of the work outlined by heritage practitioners and the assessment of how the perspectives portrayed impact UCH management.

The legislative literature and international guidelines employ discourse analysis in order to determine how the choices of words within the texts construct social outcomes (Gill 2000; Holloway 1997). As this is a study of the language applied, both qualitative and quantitative data are collected during the same phase of research, which are then amalgamated to develop a more comprehensive understanding of international and domestic trends concerning UCH-related legislation (Creswell & Plano Clark 2011). This is an approach in which the data recorded not only consider the written definition within the lexicon, but also how each term is expressed within the context of the document (Bauer 2000). Qualitatively, this analysis provides a timeline and an outline of the conventions and guidelines related to or impacting UCH, as well as focusses on identifying terms that apply to management of such materials. Quantitatively, these terms are identified and tabulated in order to later compare across the various texts.

The review of the State Party laws collects qualitative data with the intent of later quantizing the data, to enable both a qualitative and quantitative analysis of the literature. This review focuses on identifying key phrases within State Party laws that are associated with cultural-identifiers, UCH and managerial lexicon. These data are placed in a table in a manner similar to the quantitative data collected from the review of international conventions and guidelines.

The analysis of the five case studies investigates the relationships between words and actions that are reproduced and recorded via text. The case studies are assessed from the point of examining the relationships between practitioners' actions and both domestic and international laws and guidelines. The management methodologies employed in association with each case study are compared to the varying descriptions of *in situ* preservation to determine whether or not the practical applications correlate with presented expressions of the UCH-related vocabulary. Personal communication with the cultural heritage managers, conservators and archaeologists associated with the specific sites is also integrated throughout the literature review.

Once the data from the practitioners' publications, international and domestic laws has been gathered and collated, and reviews within the case studies are completed, the material is comparatively analysed through triangulation. This method allows the results of each study to be analysed independently and then correlated with parallel texts with the intent of answering the thesis question and aims outlined earlier.

Significance of study

As will be demonstrated throughout this thesis, there is a vast body of literature relating to the development of international legislation and guidelines impacting UCH. There are a significant number of government records and publications referencing the development of State specific heritage laws, and there are numerous professional publication outlets for archaeological projects conducted internationally. What is lacking within the UCH discourse, however, are studies investigating the impact an omission of an internationally formalised definition of *in situ* preservation has on the management of UCH globally. Additionally, there are no studies addressing the effect that vague and differing interpretations of cultural-identifying terminology have on current UCH management strategies, and how this impacts site stability or the ability for practitioners to employ active managerial techniques domestically. This thesis will therefore add to the body of knowledge and practical applications relating to *in situ* preservation by attempting to bridge the gap between the international

conventions and guidelines, domestic laws and the practitioners' employment of UCH *in situ* preservation techniques.

As it is the responsibility of individual States to protect their domestic UCH by “the best practical means at their disposal and in accordance with their capabilities,” it is important that managerial methodologies available are transparently presented (UNESCO Convention 2001, Art. 2.4). While the capabilities of individual State Parties to protect domestic UCH may vary, further developing the definition of managerial terms found within the UN and UNESCO Conventions and ICOMOS Charters may also introduce a greater onus on governments to consider their duty of care by actively stabilising sites under internationally accepted rules and principles. This strategy can thus provide practitioners who employ these active techniques with stronger arguments in favour of UCH protection under a more comprehensively outlined global best practice. Broadly, this thesis attempts to address the topic of discourse between managerial language and applied practice.

Thesis structure

This dissertation is divided into eight chapters. The introduction (Chapter 1) presents the reader with an outline of the literature assessed, as well as the research question and aims, an introduction to research methods and details the significance of the study. Chapter 2 outlines and explains the methodology as applied throughout the research, specifically defining the mixed-method research design, discourse analysis, qualitative and quantitative analyses and triangulation. Chapter 3 addresses issues discussed by practitioners regarding the processes associated with managing UCH. This chapter also identifies many of the concerns regarding the differences with language and application, with a specific focus on the topic of *in situ* preservation. Chapter 4 follows with a discussion on the range of definitions and techniques associated with *in situ* preservation, from basic, economically viable options to more elaborate preservation techniques, as well as addressing environmental concerns relating to the various methods.

Chapter 5 analyses UN, UNESCO and ICOMOS heritage-related texts in order to understand what led to the final draft of each international document.

Specifically, the chapter assesses the employment of cultural-identifying terminology (i.e. *antiquities*, *cultural heritage*, *cultural patrimony*, *cultural property*, *monuments*, *objects*, *relics*, and *underwater cultural heritage*) and managerial lexicon utilised in international conventions and guidelines in order to convey the relationship of terms across the texts with UCH management. Chapter 6 references and assesses State Party legislation regionally, and specifically investigates the employment of both the cultural-identifying lexicon and managerial language analysed in Chapter 5. The analysis continues with an assessment of which State Parties are inclusive of UCH within domestic legislation, whether there are UCH-specific laws, and addresses the jurisdictional boundaries for UCH management.

After independent reviews of practitioners' methods, international conventions and guidelines, and domestic laws, the data are correlated and analysed in Chapter 7. This includes the presentation and assessment of five case studies in regards to how the different aspects of aforementioned texts relate to practical applications. Overall, the chapter further demonstrates where the concerns exist in regards to the relationship between law and practice and presents contextual examples for further discussion. The body of work concludes with Chapter 8, which considers the previous data from both independent and comparative viewpoints. The final chapter continues by revisiting the research question and study aims, and provides an overview of the material presented throughout the study. It also incorporates a conclusion addressing how this material is beneficial in strengthening a global best practice strategy for UCH management.

2

Taking the plunge: research methodology

Legislation regarding internationally accepted best practice for the management of UCH influences the practices of State Parties, practitioners and private enterprise. As set out in the previous chapter, the ambiguity and variation of terminology within international and domestic legislation regarding UCH management afford a wide range of interpretations for practitioners seeking to comply with current professional best practice. Cultural heritage managers have extended their professional language to include a range of additional terms and definitions affiliated with heritage management that enables more effective communication across national, cultural and legislative boundaries. Currently, practitioners and international organisations are working together to streamline international law and practice for the benefit of modernising the universal best practice for the management of UCH resources. To do so successfully requires consistency among stakeholders (heritage managers, museums, collectors, salvors, indigenous groups, international companies and not-for-profit organisations) with an overlapping or common interest in UCH management – particularly between State Parties linked by geographical proximity or by historical and economic affiliations – and international conventions and guidelines. Moreover, the framework for UCH management practices as set out within both State Party legislation and international texts needs to achieve a balanced scope: overly broad and vague legislation allows biased interpretation, while too narrow a focus may be detrimentally restrictive to the full utilisation of UCH management techniques. Ideally, the terminology within both international

and specific State Party laws should reflect the language and methodologies employed in the field.

This thesis aims to examine the lexicon of UCH management and the parameters of current international legislation and State Party law, and to compare them with the vocabulary and methodology of UCH management employed by practitioners, with a specific focus on *in situ* preservation and identifying the ambiguity and inconsistency between law and practice. As such, it is important to address the language used in defining UCH management practices in order to ensure that legal terminology correlates with applied methods of site management. This includes an assessment of current trends by practitioners towards the use of *in situ* preservation as the ‘first option’, as demonstrated in Article 2.5 of the 2001 UNESCO *Convention on the Protection of the Underwater Cultural Heritage*.

This study addresses the written word from both a practitioner’s and a legal perspective, resulting in a textual analysis utilising a mixed-method research design. The research design employs discourse analysis with both qualitative and quantitative components, which are then integrated and compared through triangulation. Discourse is a term associated with the communication of language. This study focuses on identifying ambiguity and/or consistency in language use between legislation and practice in the field of UCH management. In this way, discourse analysis is an important tool within the mixed-method research design that gives insight into current UCH management trends employed globally. The bodies of text included in this research range from practitioners’ publications regarding archaeological sites, heritage concerns and perspectives on the field of cultural heritage management to UN and UNESCO conventions, ICOMOS guidelines and domestic laws. Analysis of this literature explores how definitions of specific terms within international and domestic legislation can impact the accepted range of UCH management techniques.

Broadly, this thesis is a compilation and comparison of data obtained through multiple literature reviews in order to answer the proposed research question pertaining to dissonance between UCH inclusive legislation and practitioners’ methodologies. A literature review represents a collection of work that focuses on an identified question with the purpose of arriving at a conclusion through the evaluation and synthesis of text produced by researchers, practitioners

and scholars across a diverse range of disciplines (Dobinson & Johns 2007; Knopf 2006; Steward 2004). A literature review may be structured around one of a number of different methodologies for data collection and analysis. Specifically the texts examined in this body of work are analysed independently and then correlated through triangulation, which involves “the combinations and comparisons of multiple data sources, data collection and analysis procedures, research methods, and inferences that occur at the end of a study” (Teddle & Tashakkori 2009, pp. 32-33).

Shifting trends toward *in situ* management (including *in situ* conservation, *in situ* preservation and *in situ* protection) of UCH, along with recent publications from practitioners addressing concerns regarding at-risk cultural heritage, provide insight into the impact that legislative vocabulary has on the protection and preservation of UCH. The international conventions incorporated in this research include a range of documents that are inclusive, or purposely exclusive, of cultural heritage located underwater. Although not all of the examined conventions expressly include UCH, they demonstrate the evolution of cultural heritage-related terminology. The scope of this study comprises only those State Parties that have participated in UNESCO forums and have signed onto at least one of the international conventions addressed in this research. Furthermore, not all of the countries provide official English translations of domestic legislation and therefore secondary literary research is utilised where required to obtain the necessary information pertaining to significant legal texts. Throughout this process, key identified terms and their definitions within the documents are noted for subsequent correlation.

Following the review of practitioners’ publications, UN, UNESCO and ICOMOS documents and domestic legislation, analyses of these texts are integrated into a discussion pertaining to five significant case studies. The case studies examined include: HMS *Colossus* in the UK; *James Matthews*, the former Hovell Pile Light, and *Clarence* in Australia; and the Reburial and Analysis of Archaeological Remains project in Sweden. These specific sites and projects play a significant role in identifying weaknesses in respective domestic UCH legislation, and provide an opportunity to investigate these sites within the context of existing international guidelines and varying practitioners’ perspectives on *in situ* preservation.

Mixed-method research design

A recognised research methodology allows a specific research question to be asked and answered in a structured, systematic fashion, as well as enables an unbiased re-evaluation by another party. In order to efficiently answer the question posed, it is necessary to apply the best-fit research design to the given study. As this thesis examines a range of literature from practitioners' publications and archaeological field reports through to legal text, the analytical method of discourse analysis is employed. This method facilitates the collection of both qualitative and quantitative data. This also enables the two types of data sets to be correlated, compared and integrated through the analytical method of triangulation. It is well recognised that a mixed-method approach can be used to incorporate multiple methodologies and data from varied sources across different stages of a study in order to provide the necessary flexibility to reach an informed conclusion (Collins & O'Cathain 2009; Creswell & Plano Clark 2011; Flick 2009; Niglas 2009; Onwuegbuzie et al. 2007; Tashakkori & Teddlie 2003; Teddlie & Tashakkori 2009).

The challenge of analysing a diverse range of documents relates to the ability to collect and organise data, decipher explicit and implicit meanings of the content, correlate the material across texts, and to present reasonable conclusions based on the examined literature. In this study, the mixed-method design first utilises discourse analysis to derive stated and implied meanings from the texts. In this way, the analysis is applied beyond syntax and vocabulary; it extends to the social context of the language and the relationships between terms and actions that are reproduced and recorded via language in use. This method is utilised in a range of academic fields to investigate texts not only as discrete bodies, but also as interconnected sources of information within specific cultural contexts. Although discourse analysis is traditionally used in fields that focus on human interaction and communication, such as sociology, anthropology and psychology, it is also used extensively in areas of medicine, law, and public policy (Johnstone 2008).

In order to address the discourse presented in this thesis, specific terms of significance and reference are predetermined and identified throughout each text. These include such terms as: *antiquities*, *conservation*, *cultural heritage*, *cultural*

patrimony, cultural property, in situ, monuments, objects, preservation, protection, relics, shipwreck and underwater cultural heritage. Furthermore, the relationships and practical applications of the pre-identified terms are a focus of data formulation and analysis. The literature reviews thus include the extraction of qualitative and quantitative data by posing a series of questions regarding the definition and application of the identified terms and concepts of interest in relation to one another, and the location of the State Party in relation to the global context.

In this sense, the qualitative, or descriptive, data are compiled by structured reviews of texts and identification of key terminologies and concepts. These narrative data are then analysed using comparative and categorical techniques. The terms of interest are identified in relation to the State, categorised via associated terminology, and compared to other State Parties within the same UNESCO region. Subsequently, the data are cross-referenced with the remaining regions and compared to data from international texts. Categorical schemes “break down narrative data and rearrange [the] data to produce categories that facilitate comparisons, thus leading to a better understanding of the research questions” (Teddlie & Tashakkori 2009, p. 253). These techniques both involve searching for patterns within the data sets and interconnecting texts, and then drawing conclusions from the different documents. Throughout this process it is important to consider the definition of key terminology in regards to their application within each specific text – particularly as to both the explicit and implied parameters of the terms – and their relationship to one another across various State-specific and international documents.

After the compilation and interpretation of qualitative data, the narrative data are transformed into quantitative data. Quantitative data deal with information that can be counted or expressed numerically and subsequently presented in graphs and tables. This modification, called quantizing data, converts qualitative data into numerical codes and statistics, thus enabling quantitative analysis of non-numerical sources (Teddlie & Tashakkori 2009). In regards to this thesis, lexical-trends impacting UCH management within international and domestic texts and within the UNESCO-delineated regions are represented quantitatively, as percentages rather than absolute values. This is to provide comparative data across the varying literature reviews; the sample sizes

for each data set differ, and are thus, as raw data, not directly analogous. Domestic legislation is evaluated for the definition and/or employment of the pre-identified terms of interest per State, which is then referenced to others State Parties in the region, and then globally. The approach of collecting and integrating multiple data types enables comparisons and connections to be made across the different research sources through triangulation, thus “providing the mixed research field with a flexible organizational data analysis structure” (Onwuegbuzie et al. 2007, p. 5).

Many researchers consider triangulation essential when critically analysing data under a mixed-method research design because it allows a range of data from different datasets to be integrated and compared (Collins & O’Cathain 2009; Martella et al. 1999). In this way, triangulation is an important tool when used in partnership with various methods of compiling data, and is applied during analysis and interpretation rather than during the initial data collection phases. In the context of this study, triangulation enables the qualitative and quantitative data from the broad range of literature to be compared as trends, and thus facilitates the development of correlated datasets that can offer conclusions regarding the globalisation of UCH management.

Textual approaches

Pragmatism is the philosophical foundation of mixed-method research that enables the use of both narrative and numerical forms of data collection and analysis (Salehi & Golafshani 2010; Teddlie & Tashakkori 2009). This type of research presents an alternative to a traditional qualitative versus quantitative approach to data collection and assessment, enabling the data to simultaneously address both exploratory and confirmatory questions. The analysis of each data set prior to the integration of results is discussed below.

Analysing the practitioners’ narrative

The first two literature analysis chapters of this thesis, Chapters 3 and 4, focus on the discourse presented by practitioners regarding UCH management, and the methods applied to protect and preserve these resources. The source

documents include publications by archaeologists, anthropologists, historians, conservators and cultural heritage managers. Their concerns and comments regarding at-risk UCH and the discussions pertaining to the practice of *in situ* preservation are highlighted, organised and discussed. Professional journal articles and books published on UCH management are reviewed to provide an insight into the current perspective on the subject matter, with specific interest in looting/private enterprise, site destruction, at-risk UCH and concerns with international conventions and domestic legislation. Furthermore, this discussion provides insight into practitioners' working definitions of *in situ* preservation, including an assessment of the range of associated techniques and environmental considerations relating to the *in situ* methods.

Although the aim of the literature analyses is to present practitioners' perspectives on contemporary UCH management and *in situ* preservation, a number of limitations regarding the available literature must be considered. The greatest limitation of this study is around access to a comparable number of publications from practitioners within each UNESCO-defined region. Unfortunately, the majority of literature available for inclusion in this study is limited to English-language publications, which prevents a more comprehensive global assessment. Although publications are included and examined from each region, there are a far greater number of sources from areas where English is the primary language utilised for professional publications. Expanding the number of regional UCH management publications assessed could therefore strengthen the analysis of the practitioners' narrative.

Moreover, only qualitative analyses were conducted with UCH management publications, and as such, a quantitative analysis of practitioners' publications could better demonstrate statistical trends. This could be accomplished by means of a computer-based keyword search for pre-identified managerial concerns and terms – inclusive of *in situ* derivatives – in the major international maritime heritage and archaeology journals to demonstrate the frequency of use by practitioners (e.g. *International Journal of Maritime Archaeology*, *International Journal of Nautical Archaeology*, *Society for Historical Archaeology*, *Bulletin for the Australasian Institute for Maritime Archaeology*). This numerical data could then be compared to the legislative trends observed in Chapter 5 and Chapter 6 of this study.

Similarly, although the primary analysis regarding the practitioners' discourse focuses on UCH management concerns and *in situ* preservation, a qualitative analysis assessing other terminology relating to UCH management (for example: reference to *restoration* or *maintenance*), which are frequently found within international and domestic legislation, could assist in identifying broader trends among practitioners. This data could then be compared to the quantitative data obtained in the literature reviews to further consider if the language and techniques utilised by practitioners mirror that found in heritage legislation, or is more disparate.

Analysing the law

For the purposes of this research, the utilisation of NVivo 9 qualitative analytical software enables a systematic and efficient collection and analyses of both qualitative and quantitative datasets. This is an analytical software program that allows the organisation of large amounts of data by means of a coding and referencing system, and enables queries pertaining to the coded material. The pre-identified terms of interest are established as individual nodes and then the specific data source, whether text file, PDF, data table, spreadsheet or picture, is coded accordingly. This software primarily acts as a virtual filing system to help methodically correlate data from the range of literature assessed throughout this body of work and then assists in sorting the material through node-based queries or UNESCO-delineated regional queries.

Although the study identifies and compares lexicon, the legal vocabulary found in legislation “seldom requires recourse to factors in the outside world for its interpretation” (Woods 2006, p. 85). Practically, this means that the terms and their definitions within each document can be isolated and analysed uniquely, as they pertain specifically to the related law. In contrast, the language of the UCH practitioner involves profession-specific terminology, but stems from a more broadly defined and dynamic vernacular. For the purposes of establishing globally accepted best practices for UCH management, the terminologies of these two aspects of effective legislation and practice must relate.

The international legislative texts analysed within this research – UN and UNESCO conventions and ICOMOS charters – are initially analysed

quantitatively. Texts are uploaded into the NVivo 9 program and then coded by the following terms of interest: *antiquities*, *conservation*, *cultural heritage*, *cultural patrimony*, *cultural property*, *in situ*, *monuments*, *objects*, *preservation*, *protection*, *relics*, *shipwreck* and *underwater cultural heritage*. In this way, individual terms and their definitions are identified, along with the context they appear in and their relationship with other of-interest terms within the text.

There are two categories of terminology for discussion and comparative analysis: cultural-identifying lexicon (*antiquities*, *cultural heritage*, *cultural patrimony*, *cultural property*, *monuments*, *objects*, *relics*, *shipwreck* and *underwater cultural heritage*) and managerial lexicon (*in situ*, *conservation*, *preservation* and *protection*). Once coded, the non-numerical text is analysed qualitatively with the principle aim of describing terminologies within the various bodies of law and their applications and implications within the context of the research. Although social science methods slightly differ from legal research methods, it is recognised that “the identification of relevant legislation, cases and secondary materials in law can be seen as analogous to a social science literature review” (Dobinson & Johns 2007, p. 40); therefore, law can be analysed similarly to practitioners’ publications in this study. While the application of a social science methodology can be noted as a limitation for legal scholars, the aim of the research is to denote weakness between cultural heritage practitioner’s understanding of law and practice, not to derive or specifically amend legislation.

The international texts assessed comprise the following UN and UNESCO conventions: Hague Convention (1954 and 1999); Law of the Sea (1958, 1960 and 1982); Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property (1970); World Heritage Convention (1972); and Protection of the Underwater Cultural Heritage (2001). Additional relevant UN and UNESCO Recommendations, Resolutions, and General Assembly Meetings are included in the overall discussion in order to examine the framework and context for the definition of specific terminologies and to identify why items are included or consciously omitted from the final documents. The ICOMOS guidelines analysed include the Venice Charter (1964), Protection and Management of the Archaeological Heritage (1990) and Protection and Management of Underwater Cultural Heritage (1996).

Despite access to a number of bilateral and multilateral agreements, the international legislative examination is limited to globally applicable UN documents (i.e. conventions, resolutions and recommendations). The omission of region-specific and non-UN cultural heritage agreements from the dataset is a result of disproportion of cultural heritage agreements across the delineated global areas. Additional research into these texts could provide further insight into more specific uses of language within regional texts. Similarly, country-specific ICOMOS texts (e.g. Australia's 1999 ICOMOS Charter, Canada's 1982 ICOMOS Charter, Indonesia's 2003 ICOMOS Charter) are excluded within the data set due to a similar imbalance of state-specific ICOMOS charters across regions, but could offer additional definitions and applications of identified terms of interest within a more focused assessment.

Domestic State Party laws concerning UCH materials are similarly analysed. These texts are uploaded into NVivo 9, coded by pre-identified terms of interest and then qualitatively analysed. The State Parties included in this study are those listed on the UNESCO website, falling within one or more of the following global regions: 'Africa', 'Arab States', 'Asia and the Pacific', 'North America and Europe', and 'Latin America and the Caribbean'. These groupings are not defined by geographical location but rather refer to the execution of regional activities within UNESCO. As the State Party legislative analysis in this study is a sampling, and does not include all 195 UNESCO-associated States, the domestic analysis focuses on trends within and across the regions. The literature review qualitatively addresses a number of issues, including whether the State provides UCH specific legislation, underwater reference to identified terms of interest and established jurisdictional boundaries for UCH management. This information, which is coded according to employed terminology, is then quantitized and regionally represented as percentages for more effective global comparisons.

In instances where primary sources are written in a language other than English, legal texts found on the UNESCO Database of National Cultural Heritage Laws, the Global Legal Information Network, the World Legal Information Institute, the Law Library of Congress, the International Foundation for Art Research and within secondary professional maritime archaeology publications are utilised for data collection. It would have been more beneficial

for the project to have the primary sources translated, however funding for the research was limited. Consequently, there are a number of limitations associated with this component of the study, as the literature assessment of State Party texts relies heavily on unofficial translations and excerpts published in other heritage and legal texts. It must be recognised that the specific terminology identified in the translated documents may not be correctly associated with the State's official interpretation of the law, but rather relates more to the perspective of the individual who transposed the text. This can greatly impact data results from this literature review, as the misinterpretation of legal texts can provide false statistical results. As such, the study of State Party law must focus more heavily on the overall inclusion of UCH in law rather than relying on exact-value inclusions for the cultural-identifying lexicon employed and maritime jurisdictional boundaries referenced.

Additionally, language limitations impact access to an equal percentage of assessed States across each UNESCO-delineated region. The disproportion of analysed State Parties per regions constrains the use of complex statistical analyses, as the data would not provide a balanced representation of the current global UCH climate. Therefore, the comparative analyses are again limited to a sampling of general trends within and across regions rather than a completed analysis of each region; an assessment of all 195 UNESCO State Parties would provide more comprehensive data and afford clearer interpretations regarding international UCH management perspectives.

Moreover, the researcher does not attempt to analyse domestic law as a legal scholar, and rather focuses on the popular implications of the lexicon employed in order to answer the research question. Although there is a wide disciplinary spectrum for analysing legislative texts (i.e. doctrinal, non-doctrinal and interdisciplinary approaches) (Chynoweth 2008; Dobinson & Johns 2007), the social sciences mixed-method approach applied enables a more comparative data extraction throughout the study. This topic of research could, however, benefit from a more legal interpretation of the data in addition to the practical perspective applied throughout this study.

Analysing case studies

Case studies, which are “rooted in the practicalities and politics of real life situations,” are a commonly employed research method in fields such as sociology, anthropology, psychology and medicine as a means of better explaining outcomes both within the profession and to the public (Adelman et al. 1983, p. 7). The five case studies included in this research are specifically chosen because of their impact on the development of domestic legislation, the influence on the evolution of *in situ* preservation within the practice of UCH management, accessibility to the practitioners involved in the projects, approval by the managing agencies and practitioners to reference their research in this body of work, and the current practices each site demonstrates within the field.

Data assessed from the case studies include information pertaining to the managing methodologies employed on site, evaluation of domestic legislation, and how the integration of practice and law fit within the international framework discussed in Chapter 5. Using triangulation, data from literature analyses in previous chapters are amalgamated with the case study data to demonstrate discrepancies between law and practice in a real-world context. Additionally, personal communications via email and telephone with the sites’ cultural heritage managers, and with the archaeologists and conservators who participated on the projects are integrated into the analysis of these case studies for further clarification.

Although the case studies were chosen in part based on the varying management methods applied to each site, the five studies themselves represent only two UNESCO-delineated regions. The limited regional selections are not a commentary on contemporary management practices, but rather are determined by professional publications originally written in English, access to participating professionals associated with each project, and the range of techniques employed at each site. The study could benefit from an expanded case study analysis, including at least one archaeological site per region. Moreover, the analytical focus was on *in situ* management methods and law. A more in depth assessment of each case study could include: a review of the cost for each applied technique, whether the management responses were proactive or reactive, the type of interest group or individual to head the project (i.e. government, consultant, researcher,

museum or treasure hunter), and whether particular interest groups favour one managerial term over another in their publications. This information could provide lawmakers with greater insight into the applied practice of UCH management and the greater employment of *in situ* preservation.

Conclusion

This thesis employs a mixed-method research design in order to incorporate the qualitative and quantitative analysis of discourse provided through a range of literary texts. Data collections incorporated in this body of work are accomplished by utilising analytical software to enable the cataloguing of terms and to provide methods for correlating and visually demonstrating obtained information. Through the coupling of discourse analysis and triangulation, the diverse datasets are combined, correlated and integrated across the study. The result of employing a mixed-method research design culminates in a better understanding of the implications of UCH legislation and a more coherent glossary for the management of UCH, with specific focus on *in situ* preservation, from both a legislative and practical approach.

3

The high tide line: an assessment of at-risk heritage

‘Heritage’ as a legislative concept had limited inclusivity until UNESCO expanded the Western perspective of the term beyond familial or national heritage to include a broader global setting. Soon thereafter, the term ‘heritage’ was equated with a contemporary perspective on the value of the past “which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits” acquired by a person as a member of society (Jokilehto 2005, p. 4). In simpler terms, ‘heritage’ comprises the body of tangible materials and intangible society identifiers from a culture passed on from generation to generation.

Today, many practitioners involved in ‘heritage’ follow a philosophy that addresses cultural heritage as a concept “belong[ing] to the people, not to the owners” (Davison 1991, p. 6). What this statement implies is that societal cultural significance of a place or item outweighs the legal right of individual possession, and depending on the significance of the item, should be protected for the betterment of humankind. However, without legislative integrity to protect, preserve and promote heritage on behalf of the common public, items of cultural significance can be contextually removed and disseminated into private collections. The sale and exploitation of these materials has been identified as incongruent with internationally accepted standards for cultural heritage practitioners (Dromgoole 2004; Varmer 1999).

These practitioners employ “the theory and practice of managing, preserving, and interpreting cultural [heritage] within a social and legal context” – where cultural heritage includes buildings and structures, landscapes, intangible

heritage, archaeological sites, historical documents, and other objects “associated with and valued by people” (Hardesty 2008, p. 1067). Advancements in materials conservation theory and methodology, in conjunction with ethical standards for heritage management, provide practitioners with methods to more effectively *protect*, *preserve* and *conserve* archaeological sites and artefacts. However, it is important to identify that as technology continues to develop, the methods associated with these italicised managerial terms also evolves. Management practices will continue developing as new contexts and technologies within the global scale of interdisciplinary-related fields are drawn together.

As a specified-component of ‘heritage’, underwater cultural heritage refers to the remains of human activity located on the seabed, riverbed, at the bottom of a lake, in a sinkhole, or along the coast. This classification can include: shipwrecks and associated cargoes and artefacts, lost airplanes and other military craft, flotsam and jetsam from seagoing vessels, submerged cultural landscapes of former occupation (including prehistoric submerged sites, sunken towns and ancient ports), shrines or places of offerings and interments, and may also encompass coastal maritime activities such as fishing, commerce exploration and shore-based facilities associated with maritime activities (ICOMOS 1998; Prott & O’Keefe 1996). Cultural anthropologist John Goggin (1960, p. 350) simplifies the definition of UCH by stating that it is the archaeological study and “interpretation of human remains and cultural materials of the past from underwater.”

The study and management of UCH emerged after the development of the Aqua-lung by Jacque Cousteau and Emile Gagnan, following WWII, which resulted in a wider audience with direct access to the underwater world (UNESCO 2012c). During the 1940s and 1950s, with the rise in popularity of recreational fishing and SCUBA diving, coupled with the dissemination of popular publications demonstrating deep-sea divers discovering forgotten treasure troves, the “search for intrinsically valuable objects from archaeological sites for personal profit or private gain” increased (Staniforth et al. 2009, p. 2). Subsequently, art historical societies, museums, heritage practitioners and government agencies also gained interest in the underwater *objet d’art* (Claesson 2009).

In 1960, George Bass from the Institute of Nautical Archaeology and a team of divers with experience on archaeological sites began an excavation on the

late-thirteenth century Cape Gelidonya wreck in Bodrum, Turkey (Bass 1961). This was one of the first underwater excavations conducted by properly trained archaeologists, which helped establish early precedents for the discipline. As this period of exploration and exploitation of the sea and its resources progressed, State Parties began integrating UCH within domestic heritage laws. Although many nations identified the need to legally manage activities directed at UCH, to date there are still those that omit UCH within domestic legislation (e.g. Sudan, Cote d'Ivoire, United Arab Emirates, Japan, Myanmar).

Professionally, the globalisation of UCH management practices occurs as a result of internationally agreed-upon perspectives for best practice, including ethically approaching the study, survey, mitigation, preservation, protection, conservation and dissemination of knowledge pertaining to the underwater archaeological materials. For some practitioners, however, the legal setbacks overshadow the evolution of theory and methodology directed at underwater archaeology, and are thus associated with “static” management practices (Claesson 2009, p. 700).

For others, the limited expressions relating to UCH management or exclusion from within legislation afford jurisdictional limitations for protection of underwater archaeological sites. This can often result in incompatibilities between advocacy groups and conflicts between the management of UCH sites and that of nearby environmental, industrial or commercial interests. Additional restrictions include environmental factors and geographical locations influencing managerial decisions, inconsistent methodological standards amongst practitioners, and differences in the approach to assessing the cultural significance and economic value of UCH. Moreover, underwriting all of these things is the lack of available technological, financial and personnel resources which are greatly impacted by an unstable economy, thus affording treasure hunters and commercial salvors with ill-motive to argue in favour of their access to these professional limitations (Claesson 2009; Mahudi 2011; Naone 2011; Nutley 1996).

This chapter focuses on exploring these issues, as well as other concerns presented by practitioners regarding the management, protection, conservation and preservation of UCH, with the aim of providing preliminary insight into how managerial terminology relates within the topic of at-risk heritage. This will more

broadly include the threats to sites (both human and environmental), public interests and legal protection.

The Challenges

Underwater cultural heritage managers are tasked with implementing management strategies for archaeological sites affected by both the natural forces of the underwater environment and the many impacts of human interaction, while working within a framework of legal and ethical responsibility to protect and preserve the heritage (Grenier 2006; MACHU Project Team 2008; McNinch et al. 2006). Within such a framework, however, there are often disparate and competing views among practitioners, government and special interest groups, given that the ethical boundaries and acceptable methods of practice understood by the different parties are not always congruent. The special interest groups and lobbying parties include museums, researchers, the general public, commercial ventures and private treasure hunters – all with different motivations and levels of regard for the protection of these non-renewable resources.

For example, the recreational fishing and SCUBA diving tourism industries may want to have input in the potential amendment of heritage legislation in order to ensure each interested party maintains adequate access to sites and economic sustainability. However, there needs to be a balance between recreational access and legislative protection to mitigate damage and loss of UCH. Alternatively, more traditional public perception often equates UCH with romantic notions of finding treasure along with the excitement of the treasure hunt itself, which can foster a ‘finders-keepers’ attitude (Grenier 2006; Scott-Ireton 2006). It is therefore necessary to identify differences in stakeholders’ opinions of UCH, recognise the controversial human activities affecting sites and educate the parties involved on potential detrimental impact on UCH.

For more than a decade, practitioners’ publications have addressed the treasure hunting issue, in keeping with an increased public sense of the value and common ownership of cultural heritage. This has resulted in a more acute awareness of the need to identify and examine at-risk cultural heritage around the world (Babits & Van Tilburg 1998; Bowens 2009; Kuppuram & Kumudamani 1996). In the forefront of this discussion is the volume entitled *Heritage at Risk*,

which was first produced by ICOMOS in 2000. This publication examines issues threatening specific monuments and heritage sites, and reflects shifts in global attitudes toward cultural heritage management. The work also addresses the changing views on definitions relating to UCH, treasure hunting, legislation and relevant environmental factors that impact at-risk heritage.

The representation

Internationally, what constitutes UCH differs among countries and regions. These variations are based on the application of terminology and the definitions of UCH within law, the extent of protection available within the legislation, culturally perceived values regarding heritage, public interest and concerns regarding ownership. The lexicon categorising underwater-located heritage variously includes: antiquities, monuments, objects and relics to cultural heritage, cultural patrimony and cultural property. These identified vocabulary therefore constitute what can be protected under enacted laws, impacting not only what is legally regarded as cultural heritage, but potentially how a community relates to aspects of its own tangible heritage.

Legislatively, it is important to clearly delineate classifications for terms without being overly exclusive of significant cultural materials. In regions where there is a higher concentration of maritime activity extending over a broader period of time (i.e. within the Mediterranean), heritage managers may find it challenging to actively protect thousands of years of UCH. As such, the extent of underwater heritage volume should not be a basis for excluding protection of more recent archaeological sites. For example, Israel's *Antiquities Law 1978* (Sec. 1.1.1) applies to antiquities made “before the year 1700 of the general era,” including those objects located in both internal waters and in “any part of any sea.” Similarly, Hungary establishes “archaeological heritage” as including “all detectable signs of human life originating before 1711” located on the ground or under the water (*Act LXIV of 2001*, Art. 7.18). Therefore, archaeological sites from the early-eighteenth century to a more modern era are excluded from legislative protection. Other countries, however, employ a blanket age-range for domestically located UCH (i.e. 100 years underwater – Ireland, *National Monuments Act*; 75 years underwater – Pakistan, *Antiquities Act 1975*). Although

the non-specific era criterion minimises concern for exclusion of potential UCH in the future, there are archaeological sites of significance far younger than 75 years that remain excluded and thus vulnerable to anthropogenic interference (i.e. cultural material from twentieth-century wars). Largely, as it is improbable that all countries with limiting age-factors will update their domestic legislation to incorporate more modern UCH, a detailed range of internationally accepted management options for ‘younger’ UCH sites should be available for reference by heritage practitioners.

Moreover, dissemination of information, whether government sanctioned or propaganda perpetuated by treasure hunters, can affect public perspectives towards UCH. In this regard, Parks Canada’s Chief of the Underwater Archaeology Service Robert Grenier (2006, p. x) sets out that practitioners often have to work with and around the “profound ignorance of what constitutes underwater cultural heritage,” as a result of misrepresented UCH information. Unfortunately, high-profile and large-scale treasure hunting endeavours, such as those publicised by Jacques Cousteau, Mel Fisher and Odyssey Marine Exploration, encourage the privatisation and exploitation of UCH, thus identifying UCH as a commodity. This is furthered by romantic clichés fostered by Hollywood films and other cinematic sources, children’s programs, literature and comic strips which influence public perception regarding ownership of UCH and what constitutes acceptable behaviour towards its management. Consequently, these privatised perspectives impact the support for academic research and legal protection.

Unfortunately, treasure hunters frequently argue that archaeologists do not have the appropriate resources to sufficiently manage the UCH, and thus the resources available to the commercial endeavours continue to convince many politicians worldwide of the value in treasure hunting (Grenier 2006). In order to demonstrate the ‘legitimacy’ of the rescue and recovery of artefacts, treasure hunters and salvors argue that they are adhering to Admiralty Laws – the Law of Salvage and the Law of Finds (Hall 2007). In general, the Admiralty laws awarded “property rights in shipwrecks to the finder of the wreck,” but they were not established with the intent of salvaging historic vessels (Hallwood & Miceli 2006, p. 288). The Law of Salvage was introduced as a voluntary service that legally entitled salvors to monetary compensation for the recovery of

contemporary vessels and property, whose owner still lays claim to the shipwreck and cargo. Various, under the Law of Finds, salvors could claim ownership over materials extracted from an abandoned shipwreck (Hallwood & Miceli 2006; Norris 1991, as cited in Wilder 2000; Vadi 2008). To date, however, the application of the Admiralty Laws has evolved laterally for application to more illicit activities.

Moreover, many countries continue to award state-sanctioned permits to private enterprises, allowing searches for and access to UCH (e.g. Indonesia, the US, the UK). It can be argued that this furthers the misrepresentation that the practices of treasure hunters and salvors are congruent with heritage managers. While public/private partnerships may, in some instances, afford a greater utilisation to find and access UCH resources (e.g. *Queen Anne's Revenge* in North Carolina), it is in the common interest for the public to be properly educated on the detrimental impact treasure hunting and salvage has on cultural heritage. Indeed, as history has demonstrated, although a slow process, “eventually, public opinion shifts and, in due course, laws change” (Hall 2007, p. 5).

The impact

Broadly, there are two types of destructive forces that impact underwater sites: human interaction and the environment. Grenier (2006, p. x) argues that the “real” enemy to UCH sites is apathetic and unaware people, “with our diving, dredging and powerful construction equipment, motivated by financial gain” – this is not to speak of the multitude of indirect human impacts on the physical conditions of underwater sites. From the perspective of direct engagement with UCH, four main attitudes can be identified: those who remove artefacts in order to remember their experience on a site (referred to as souvenir hunters), those who find it acceptable to remove artefacts and damage sites with the intent to sell the material for personal gain (referred to as treasure hunters), those who believe the artefacts should remain *in situ*, and those who believe artefacts should be documented and archaeologically removed and conserved for museum display. The latter two categories often overlap, depending on specific site significance.

For sites within close proximity to shore, their location makes them a target for souvenir hunters. These hunters often have an interest in the history, but

generally do not associate the removal of visible or shallow buried artefacts with destruction to the site (Carter & Dodd 2011; King 2008; Luna E. 2006). Unfortunately, souvenir hunting can have a detrimental impact on site stability and integrity. The site of the SS *Maori* wreck in South Africa, for example, has been the victim of years of souvenir hunting. Although the shipwreck has never been commercially salvaged, it is now “a shadow of her former self” (Gribble 2006, p. 42); lamentably, this is a common tale.

During the 1980s, two local divers found the exposed hull and cargo of *William Salthouse* partially buried in Port Phillip Bay, Victoria, Australia (Hosty 1988). Once the wreck was reported, government archaeologists noted the well-preserved state of the wooden barrels, miscellaneous cargo and ship’s timbers, as well as minimal marine growth, which suggested that the site had only recently been exposed (Harvey 1996). Word quickly spread, and without regard for the historic significance of the vessel, the local diving community extensively looted the remains (Elliget & Breidahl 1991; Staniforth 2006). Even after *William Salthouse* was declared a historic shipwreck under the provision of the Victorian *Historic Shipwrecks Act 1981*, looting continued for the next two years forcing the establishment of a 250 m radius protection zone surrounding the site (Staniforth 2006). Later, a permit system was established to allow limited and controlled public access to the shipwreck. Despite this, it became evident that accidental damage was still occurring as a result of poor buoyancy, active hand fanning and environmental changes in the bay (Staniforth 2006). As demonstrated, restricting access to the site did not prevent the degradation of the site, nor increase divers’ understanding of the significance of preserving artefact context.

Treasure hunting, with its often more aggressive looting and vandalism to shipwreck sites, intentionally occurs with the use of implements such as crowbars, hammers, dredge hoses, knives and propwash deflection. The objective to find ‘treasure’ often results in the destruction of the ship’s hull, deemed by some treasure hunters to be less monetarily valuable than the artefacts. Once these items are broken-up and loose they can easily wash into the sea and become disassociated from the archaeological context. Regrettably, a number of countries still legally allow, and under some circumstances encourage, treasure hunting within territorial waters (i.e. the US, Bahamas, Haiti). Moreover, for those State

Parties in which treasure hunting is in fact illegal, sites are often remote or located a significant distance from shore, therefore making them difficult to constantly supervise.

Propwash deflection, otherwise referred to as a mailbox, duster, or blower, is a common and very destructive technique used by treasure hunters, most often in shallow waters. This method was first largely reported in use in Florida, US, on the sites of the 1715 and 1733 Spanish Flotillas (Delgado 1997). The system generally comprises a custom-made box, or tube, that sits over the propeller and angles towards the seabed. In order to make the system work, the vessel is moored and the engines revved, allowing water to be forced through the box or tube and directed onto the seafloor, pushing sand, sediment and any other lighter cultural materials away to expose objects of interest. This technique has been known to move 500 tons of sand in 15 minutes and create craters in the seabed up to 7.5 m deep (Hutt et al. 2004; Kirby 1992; Throckmorton 1998). The capacity for damage to a site by this method is significant – not only does it expose vulnerable materials, leading to more rapid decomposition, but it also means that the physical context of UCH materials and artefacts within the site as a whole cannot be considered. In Florida, since the 1960s, lore and “local fables of Spanish gold and pirate booty resulted in shipwrecks becoming targets for looting and treasure hunting,” with the seabed as the hunting ground (Scott-Ireton 2006, p. 5). If similar techniques were used on historic terrestrial sites attention would be drawn to the site, however underwater, “almost anything can happen unnoticed” (Grenier 2006, p. x).

In South Africa, the tradition of treasure hunting and looting shipwrecks along the coasts was common as early as the eighteenth century – in keeping with the “perception that the contents of shipwrecks are there for the taking” (Gribble 2006, p. 42). In the mid-1980s, discoveries in Southeast Asia of shipwrecks with cargoes of Chinese ceramics and other valuable commodities “opened a new floodgate of treasure hunting and looting of archaeological sites in Asia” (Green 2008, p. 1603). Moreover, within the twenty-first century, salvage interests in historic shipwrecks have not ceased, as coastal nations such as Indonesia, Singapore, Spain, the US, the UK and countries throughout the Caribbean continue to legislatively sanction treasure hunting or are affected by the associated activities within territorial waters.

One reason for the conflicts of practice and ideology between archaeologists and salvors is that during the hunt for treasure, often the “scientific and historical interests are ignored” by the latter (Delgado 1997, p. 327). On many private salvage enterprises, there is a great pressure from the commercial interest that takes precedence, influencing the methods and practices employed on site. This, in turn, can result in misrepresentation of site evaluation and an increased focus of public interest in the individual items with commercial value, ignoring the intrinsic cultural heritage value of the site as a whole. Unfortunately, economically driven treasure hunters continue to “enjoy a broad degree of public popularity, technological capabilities, investment-capital funding, and a misapplied historical tradition of maritime salvage support[ed] by legal authority and sanction” (Delgado 1997, p. 327).

Indeed, there are many common-held public misconceptions regarding treasure hunting. For example, there is a perception that the financial rewards, as a result of the material finds, outweigh the costs of the enterprise. When considering the expenses associated with researching and locating potentially ‘salvageable’ sites, through to accessing the site and the equipment, personnel and technical resources necessary, the cost of a salvage enterprise can be significant. This in itself places a large emphasis on the importance of extracting maximal value in terms of recovered commodities – as has been demonstrated, often at the expense of the overall integrity of the site. Research on the relationship between net and gross profits from treasure hunting endeavours reveals that the capital investors themselves rarely reap a significant financial reward for their outlay (Hall 2007; Throckmorton 1998).

In 1985, Chinese Nanking porcelain and gold bars recovered from Dutch East Indiaman *Geldermalsen* located in the South China Sea were sold at auction for £10 million (Bowens 2009; Hutchinson 1996; Sudaryadi 2011). Shortly after the sale of artefacts it was rumored that the site was destroyed in order to hide its location. Film footage during the salvage showed “divers ripping lids off tea chests and letting them float away” (Hutchinson 1996, p. 288). This type of destructive engagement with the site, with the purpose of extracting only very specific and commercially valuable items, meant that any opportunity to study the entire cultural context and both gain and preserve knowledge from the shipwreck

was lost. The scale of loss resulting from the pillaging of the site has been likened to “the destruction of 3000 Etruscan tombs” (Throckmorton 1998, p. 80).

Many countries that facilitate treasure hunting do so by the legislated sanctioning of salvage for the potential economic gain of a significant archaeological find. As agreed upon within the permit, artefacts – or more commonly, a share in the profits from the sale of recovered cultural materials – may be distributed (often unequally) among the finder and relevant government parties. This type of legislated arrangement further undermines the ability of heritage managers and public institutions to obtain objects with a significant cultural value, or more importantly prohibits the acquisition of a complete collection. For small countries with limited resources, the ability to gain financially from private salvage enterprises, while at the expense of loss of public custodianship of cultural heritage, may be too enticing to ignore.

For example, after the successful sale of the *Geldermalsen* cargo, the Indonesian government realised the potential for economic gain within the treasure hunting industry and changed domestic legislation to require any salvage within territorial waters to be split between the finder and the managing agencies (Indonesia, *Presidential Decree No. 43 of 1989*). Although the legislation was presented as aiming to mitigate the loss of UCH within their territory, the invitation for active treasure hunting suggests a motivation toward immediate economic gain rather than the protection of UCH. In May 2010, Cirebon artefacts discovered in Indonesian waters were slated for an auction that was expected to bring in millions of dollars. Negative international public reaction regarding the auction impacted the sale, which resulted in a failed auction (Widiati & Wahjudin 2012; Jakarta Post 2010; Rukmana & Suherdjoko 2010). To date, the Indonesian government has not publically commented on the auction.

Unfortunately, the cost of heritage management, including accessing, actively protecting, conserving, preserving and monitoring a site, impacts governmental decisions regarding legislation and the application of management strategies. Such constraints, for example, impacted the management outcomes for the steam collier *Lady Darling*, located in shallow waters off Australia’s New South Wales (NSW) south coast. The managing heritage officers established a 150 m radius protection zone around the archaeological site due to the significance of the shipwreck and its remote location (Nutley 2006). The

expectations were that *Lady Darling* would be a popular recreational and wreck diving site, which given the isolated location, would make monitoring and policing difficult. Site managers chose to leave the shipwreck and associated artefacts *in situ* due to the high costs of archaeologically removing, conserving, storing and displaying the vessel's remains, and further expressed concern that the removal of artefacts would "deplete the significance of the site" (Nutley 2006, p. 34).

As such, a permit system was established to afford some degree of control over recreational interaction with *Lady Darling*. Due to the economics of *ex situ* management, the NSW Heritage Branch enlisted the support of the community to aid in the safeguarding of the local UCH, and thus heritage managers rely on the honesty and ethics of visiting divers. This example demonstrates that community association with underwater archaeological sites can play an integral role in the protection of UCH; without local support, souvenir hunting and an increase in site degradation would be more likely to occur.

In less economically stable environments, scrap metal and cultural materials from shipwrecks or other UCH sites provide instant financial benefits to individuals – without any regard for the heritage value of the items. This broader and less discriminate salvaging of UCH is, in terms of the outcome to a body of cultural heritage, similar to treasure hunting. Although the materials sourced from sites in this capacity are not considered treasure in a traditional sense, they are dismantled, destroyed and sold for the isolated value as material resources. The economic value to individuals selling UCH simply as a source of income can make it difficult for cultural heritage managers to convince the public that there is a long-term economic benefit associated with heritage value and *in situ* archaeological sites.

For example, sport divers during the 1970s in South Africa were searching for non-ferrous metals when they came across the hull of SS *Maori*; in order to extract the metals, divers used dynamite to blast open and break-apart the wreckage. Not only was the potential for cultural analysis and learning lost, but, as discussed previously, so too the opportunity for sustainable and profitable recreational access to the site. This type of action is common where the UCH does not have an established connection or relevance to the local community (Luna E. 2006). Similar activities occur commonly in communities in Indonesia, where

socioeconomic disadvantage is considerable. For much of the population, the concept of preservation of cultural heritage is relegated by the reality of poverty, and as a result, the common attitude towards UCH is that it is “nothing more than a pile of junk expected to be sold as treasures” (Gunawan 2011, p. 460). From this perspective, the cultural importance, or lack thereof, placed on historical sites belonging to or left by foreign, colonising nations by the local indigenous population must be considered. This may be yet another factor that places UCH resources at risk.

Indeed, for many individuals and communities around the world, the intrinsic value of cultural heritage does not outweigh the benefit of short-term economic opportunity provided by salvaging UCH sites. It is suggested, however, that by establishing economic benefits for a community directly associated with local UCH, “the public will voluntarily enact community conservation of underwater heritage” (Gunawan 2011, p. 462). For governments and heritage managers, one strategy for encouraging the preservation of UCH is to aid local communities in recognising and developing sustainable, long-term economic potential provided by UCH-associated tourism.

During the 1980s, with the increase of tourism in Bali, Indonesia, the local community within Tulamben discovered that there was a lucrative economic potential in protecting the US Army transport vessel *Liberty* for diving tourism and the other services accompanying diving (e.g. accommodation, restaurants, souvenirs, car hire, local stores, dive resorts, porter services) (Ridwan 2011). In other words, the economic benefit to the community of the site’s preservation outweighed the short-term potential gain of salvaging. In response to the exponential growth of underwater tourism in the area, the Tulamben community established local customary laws, which are not recognised as official Indonesian laws, to combat local citizens’ actions that would damage the shipwreck and its environment. These customary laws restrict fishing within 100 m of the shipwreck, removal of artefacts or materials from the site, damage to coral, taking stones from around the shipwreck, cutting of plants around the nearby beach – and states that anyone found in violation of these rules “will receive moral sanction, be ostracized from society and not allowed to follow religious rituals” (Ridwan 2011, p. 631). To date, the region’s tourism industry continues to thrive around an actively protected heritage site.

As mentioned previously, the cultural context of a historical site can also have an impact on its perceived importance, or value, to a local community and regional or national government. For many countries around the world, contact with other nations through trade, colonisation, invasion or war has influenced the history and development of the country and its culture – influences that may be observed and analysed through the investigation of historical sites. Such sites, however, may have no cultural significance or value to local populations, and indeed, may even represent unwelcome or negative periods of history. It is worth noting that historical cultural remains located within a nation's territorial waters, but stemming from a foreign nation's presence, may not be considered culturally valuable, and as such, may be afforded little or no protection under domestic legislation (Jeffery 2011; Mahudi 2011; Naone 2011; Parthesius 2011).

For the indigenous population of Chuuk, local heritage focuses more on the intangible cultural practices within their own communities than on tangible foreign cultural heritage. This means that there is little interest in legislatively protecting foreign WWII-era historical remains, which are of far more significance to more geographically distant nations (Jeffery 2011). In other words, there exists a clear disassociation between the local community and the foreign UCH. Maritime archaeologist Bill Jeffery (2011, p. 534) asserts that, in this example, the underwater sites are culturally meaningless and have “no sense of belonging” to the Chuukese population. As such, there is often far less motivation to preserve or protect foreign UCH. This is demonstrated by the continued selling of salvaged metals and artefacts and dynamite fishing on these artificial reefs (Jeffery 2011). Although the diving tourism industry plays a large role in the economics of the region, “the management focuses on the tangible aspects according to a dominant Euro-American perspective” and further disconnects the Chuukese from the submerged WWII sites (Jeffery 2011, p. 534).

Laurajane Smith (1993, p. 56) argues that current cultural heritage management practices are derived from a sociologically “Western” point of view, and can be defined as:

- a) A process which fulfils part of a Western cultural, political and ethical concern with the conservation and curation of material items;
- b) A process which institutionalises archaeological knowledge and ideology with State institutions and discourses; [and]
- c) A process which is implicitly concerned with the definition of, and debates about cultural, historical, social and national identities.

When considering many aspects of UCH management principles, Smith makes valid assertions. More recently, however, examples of smaller, non-Western populations demonstrating an integration of local culture, with an understanding and application of the process of globalisation and the movement towards a universal best practice for heritage management beyond a strictly Western bias, can be identified. For example, many communities and regional governments in the Pacific Islands have modified their perspective on foreign heritage, not only in regards to how the local communities embrace the value of the ‘other’ heritage, but also the empowerment of “constructing local identities using foreign material” and the insight into managing these resources without “a marginalized voice” (Jeffery 2011, p. 534).

The process of acknowledging and making use of the value in cultural heritage, beyond the market value for artefacts or scrapmetal, is still developing across the world. In the Caribbean Basin, Institute of Nautical Archaeology affiliated scholar Jerome Hall (2007, p. 1) notes that many of the historic shipwrecks are used by locals to provide an additional income – either by taking tourists around to “‘secret’ [fishing] spots and snorkeling [sic] ‘unknown’ shipwrecks” or by supplementing a traditional income with the illegal salvaging and selling of artefacts. In Tanzania, many communities are not aware of, or not concerned with, the cultural heritage in their area, nor is there recognition of its global heritage value – conditions that result in the destruction of the site for scrap metal (Mahudi 2011).

In contrast, South Africa, a socially diverse nation comprising significantly disparate cultural backgrounds, acknowledges the colonial history but struggles with the protection of Western heritage in legislation (Parthesius 2011). This is an example of how the historical context of cultural heritage impacts the way heritage value is perceived by different peoples within a broader community, and as such, the means in which the value will be attached. For some, the preservation and protection of historical materials will be paramount – for others, it may simply be seen as an opportunity to salvage resources and obtain an income.

Many heritage managers argue that contemporarily, economic interests and cultural heritage cannot be separated. However, albeit slowly, individuals in controversial regions are utilising capacity building programs and education and

outreach programs to alter the association of a short-term economic gain from UCH to understanding and applying more sustainable industries. In Indonesia, for example, capacity building programs and training programs in wreck diving, underwater photography and artefact management, as well as workshops on marine tourism for UCH management agencies are being executed by both local and foreign heritage managers (Ridwan 2011). In time, these actions, in conjunction with amendments to heritage legislation and foreign pressures, should prove effective in facilitating change not just in Indonesia, but across the region.

The unknown

As discussed previously, the practice of souvenir hunting, or artefact removal from heritage sites by members of the public, is often done without awareness or regard for the detrimental impact on the integrity and stability of the site as a whole. The accessing and removal of artefacts or materials from underwater archaeological sites not only disturbs the context, but can also result in physical damage to the remaining UCH. After a site has been interfered with, cultural heritage may be exposed to new or increased environmental factors that promote decomposition or degradation. At the site of the shipwreck SS *Yongala*, located off Cape Bowling Green, Queensland, Australia, a significant threat to the shipwreck was the removal of fixtures and fittings by souvenir-seeking divers. The physical disruption to the hull caused accelerated corrosion around the disturbed area, resulting in increased degradation (Viduka 2006). Although the long-term detrimental effect on the wreck may have been unintentional, the impact on the site is, unfortunately, irreversible.

In recent years, as diving tourism has increased in popularity, dive shop operators internationally are looking for novel and unique attractions to market to recreational divers. For many operators, the preservation of historic shipwreck sites directly relates to a sustainable, long-term economic gain. This has independently promoted the establishment of a ‘don’t touch’ policy on-board many dive charters, with a locally imposed penalty for those SCUBA divers caught removing artefacts from a shipwreck or the seabed. These businesses understand the commercial value associated with protecting and maintaining UCH sites – indeed, that if archaeological sites “retain complexity, including

cannon, anchors, and various other smaller relics, [they] have considerable tourism appeal” (Nutley 1996, p. 102). The increasing prevalence of this attitude demonstrates that looting and salvaging detracts from the integrity of UCH sites, and reduces the potential for long-term financial benefit. While not drawing on the inherent value of the materials or artefacts individually, there is a sustainable economic value that becomes tangible for this particular interest group by the practice of UCH preservation.

Despite the recognition of value and shifts in attitude toward protection of UCH, some practices persist within the recreational diving and tourism industries that negatively impact site integrity. Whether inadvertently, through lack of awareness or ‘laziness’, even the process of accessing locations with UCH can cause significant damage: dropping anchors directly onto a site, tying off moorings on hull structure, or the dragging of an anchor into or around structural components unfortunately remain observable factors contributing to site degradation. Indirectly, this can result in a significant loss of stabilised concretions and coral growth protecting UCH. The shipwreck *Yongala*, for example, experienced significant physical damage to the remnant hull from dropped and dragged anchors (Viduka 2006). In response to this damage, the Museum of Tropical Queensland placed a mooring infrastructure on site and established a 500 m anchoring protection zone around the site to minimize damage. These management strategies indicate an awareness of the value in protecting UCH, recognising both the economic impact that the loss of *Yongala* could have for the local tourism industry, as well as the loss of cultural heritage itself.

Recreational fishing, along with the commercial fishing industry, can be similarly destructive; fishing lines and nets get caught in shipwreck structure and can pull artefacts and material remains from their resting places. Commercial trawling along the seabed is widely regarded as devastating to underwater topography – by its nature it has a great propensity to disrupt artefact assemblages and UCH site context, which damages site formation assessment and prevents a more complete understanding of the historical context. This impact is well demonstrated in the extensive fishing ground in the Wadden Sea, off the coast of the Netherlands. In this area “wreck parts that are sticking out of the seabed are caught in nets and break off” (Manders 2006b, p. 70). Reports by the International

Council for the Exploration of the Seas reported that 60% of the European continental shelf is impacted by seabed trawls, disturbing sediments to a depth of 50 – 80 mm each pass (Flemming 2004). This presents a threat not only to more recent shipwrecks but also prehistoric submerged cultural landscapes, which are often identified by subtle lithic surface scatter, may be lost to scientific study by the practice of trawling.

Exploitation of the resource

A common argument put forward by treasure hunters is that governments and heritage managers do not have the financial or technological resources to access and utilise the value of shipwreck sites and, therefore, those with appropriate means should obtain the rights. This is an argument that is based on the premise that UCH is a commodity that can be privatised; or from another viewpoint, that there is no inherent public ownership or custodianship over cultural heritage materials. There are, however, a few treasure hunters-turned-advocates for UCH preservation who have assisted universities and government organisations to ethically and systematically relocate and survey archaeological sites (examples include *Queen Anne's Revenge* in North Carolina, US; *Maple Leaf*, in Florida, US) (Miller 1993; Piazza 2011).

In many of its approaches and principles, the ideology of UCH salvaging enterprises is at odds with the concept of protection and preservation employed by UCH managers. Essentially a private, commercial venture, 'hunting' and salvaging UCH is primarily aimed at promoting private interest – be it financial or enthusiasm for the collection of artefacts – and as such, the ethics, methodologies and outcomes are significantly different to those of practitioners with an academic background. Broadly, the rationalist business model that underpins many treasure hunting endeavours does not facilitate the approaches of UCH management employed by practitioners, which are often considered too costly and time consuming.

Deep-sea diving equipment and marine survey equipment including powered and hand-pumped dredges, trawlers, home-made propwash systems, remote sensing equipment (i.e. magnetometers, sub-bottom profiles, sonar systems and Global Positioning Systems [GPS]), underwater cameras, remote

operated vehicles, submersibles and other mechanical equipment make locating and accessing archaeological sites much easier. As a result of the technology, UCH is both more accessible and at greater risk. Indeed, as technology continues to develop – often driven and utilised by the private sector – and as exploration reaches deeper into the sea and coastal development continues to steadily increase, there is a risk that access to significant areas containing UCH may be effectively monopolised by the private sector. Moreover, without robust concern for UCH and the legislation protecting the heritage materials as a valuable public resource, prehistoric archaeological sites, shipwrecks, and historic waterfronts that lie along shorelines and within shallow waters are at danger of being lost with expanding development (Claesson 2009).

Interestingly, in many countries around the world, much of the funded archaeology relating to UCH has “developed in the context of spatial planning” extending into maritime zones (Maarleveld & Auer 2008, p. 72). Activities along coastlines such as beach replenishments, harbour works, dredging channels, building bridges, installation of coastal and offshore wind farms and the reclamation of land through coastal expansion greatly impact the stability of archaeological sites. In many jurisdictions, there is limited or no legislation requiring an archaeological assessment prior to commencing work. Perhaps more unfortunately, even with heritage legislation that necessitates a site assessment prior to significant development works, there are many instances whereby local or domestic governments may lack the financial capacity or political will to implement extensive practical management beyond the initial assessment.

Dredging in channels and along coastlines in preparation for coastal development is often considered a necessary activity but can result in a significant amount of damage to UCH sites. Cooperation by stakeholders with an awareness for the vulnerability of UCH has the potential to minimise damage from occurring. The Princess Channel Wreck, originally located in the Thames Estuary, UK, is an example of marine development planning in conjunction with an archaeological focus. This site is regarded as the “first time that a wreck has been discovered, investigated and recovered directly as a result of dredging” in the UK (Firth 2006b, p. 37). In contrast, during the dredging of the Orío estuary in 1991 in the Basque region of Spain, the remains of a wooden boat were found on the riverbed. Emergency excavations were carried out concurrently as dredging

continued because the contracted company refused to stop work to allow a full assessment of the site, claiming economic hardships. As the dredging continued work from the surface, archaeologists attempted to investigate the shipwreck below “without maintaining any safety buffer zone between the two activities” (Izaguirre 2006, p. 73). Sadly, the estuary and its UCH did not benefit from legislated protection in matters of archaeological management. Despite five shipwrecks having been located in the estuary system since 1992, demonstrating that the waterway “constitutes a historically important navigable route,” the lack of protective legislation persists (Izaguirre 2006, p. 73).

The utilisation and pattern of human interaction with the maritime environment has traditionally been focused on areas along the coastline and around navigable bodies of water. More recently, driven by demand and appropriate technologies, development and utilisation of the ocean is increasing. This includes the exploration and mining of natural resources on and under the seabed. In order for heritage laws to be effective at protecting UCH in regards to seabed development, a heritage assessment needs to be included as a component of initial planning to help “regulate and monitor the effects of proposed developments” (Coroneos 2006a, p. 47). In some instances, developers may not want to disclose the presence of significant UCH on a development site because of the implications for cost and time delays in assessing and adequately managing the heritage materials. Although many State and local governments have legislation in relation to the approval of development projects requiring contractors to inform government authorities if UCH is identified during the project, “a developer can claim that the significance or antiquity of the site was not apparent as it was being destroyed,” which is a common argument when “the impacts can be relatively ‘invisible’” (Coroneos 2006a, p. 46).

Since the Environmental Impact Assessment (EIA) Directive embraced the *European Convention on the Protection of the Archaeological Heritage*, UCH management practitioners within the UK are required to reassess and re-establish managing guidelines for archaeological sites. According to lecturers from the University of Southern Denmark, Maritime Archaeology Program, Thijs Maarleveld and Jens Auer (2008, p. 70), “traditional archaeological institutions were no longer equal to the vastly expanding tasks, hence new systems of management and execution had to be developed for the modes of preliminary

assessment and intrusive archaeological intervention needed.” As discussed previously, the expansion of resource utilisation farther away from the coastline and deeper into the oceans makes the issue of legislative jurisdiction particularly pertinent. Along with sovereignty over ocean resources is the issue of custodianship and responsibility for UCH – and the need to re-examine the extent of maritime boundaries, which should extend to waters and cultural heritage located out to the Area.

As resource development continues to expand into the oceans and along coastlines, there is a need for archaeologists and heritage managers to work with both government and non-government stakeholders to help establish a “more comprehensive and consistent approach” to surveying and protecting UCH (Flemming 2004, p. 117). England’s EIA Directive, for example, provides an initial framework “for addressing the implications of marine aggregate for the historic environment in the course of applications for dredging licences” (Firth 2006a, p. 8). Dredging, along with other practices causing physical alterations to the environment along coasts and waterways, has the potential to cause both direct and indirect risks to UCH site stability. Such work may not only physically damage heritage material, but can result in changes to water flow and tidal patterns, water quality, coastal erosion and sediment relocation.

Such environmental changes, for example, can be observed affecting sites in the northern Netherlands. Between 1927 and 1932, a 30-metre dyke called the ‘Afsluitdijk’ was put in place to close off the former connection between the Zuyder Sea and the North Sea. The dyke prevented the natural flow of water, which resulted in net erosion of the seabed. According to the head of the Cultural Heritage Agency of the Netherlands, Maritime Programme, Martijn Manders (2006b), the impact of the change in water flow has the potential to cause approximately a two-metre drop in the seabed level over the following decennia, which will result exposure and degradation of many shipwrecks in the area.

Comparatively, in Melbourne’s Port Phillip Bay, in Southern Australia, “human-influenced changes in the environmental conditions caused by factors such as nearby channel dredging [and] the scallop fishery” impact water quality within the Bay (Staniforth 2006, p. 52). These changes affect the chemical, biological and physical stability of significant shipwreck sites such as *William Salthouse* and *Clarence*. Similar impacts are noted by UNESCO’s UCH Advisory

Body Chairperson Dolores Elkin (2006, p. 77), where the constant development and growth of the nearby harbour in Patagonia, Argentina, “either directly or indirectly has a negative impact” on the shipwreck site HMS *Swift*. This is mainly due to the increase of construction work, environmental contamination and heavy traffic in the area, “all of which alter the delicate equilibrium of the *Swift* and its surrounding environment,” promoting conditions for more rapid degradation (Elkin 2006, p. 77).

Chemical, physical and biological

Archaeological material, whether organic or inorganic, are subject to a variety of impacting factors: pelagic and benthic marine biota, chemical and physical changes to the environment, and as previously discussed, human interference. When left *in situ*, all UCH is exposed to a degree of environmental degradation, and “it remains the task of the archaeological resource manager to attempt to arrest, or at least slow down” these processes as much as possible (Oxley 1998a, p. 161). In order to effectively manage UCH, however, it is important to understand the environment impacting the archaeological materials.

A multitude of factors influence the chemical, physical and biological conditions within a site and, consequently, the balance of preservation and decay that affects the archaeological resource. Depending on the overall conditions of the site, the relationship between these factors may oscillate, and UCH can be immaculately preserved in one sediment matrix while rapidly degraded in another. More specifically, these factors include, but are not limited to: chemical factors such as salinity, pH, dissolved oxygen content and sulphide content; physical factors such as water and tidal movement, water depth, sedimentation, depth of burial and temperature; and biological factors such as marine flora and fauna – both macro and micro (Björðdal & Nilsson 2008; Curci 2006; Davis 1996; Keith 2002; Memet 2009; Na et al. 2008; Oxley 1998a; Oxley & Gregory 2002; Rabalais 2005; Richards 1996).

These environmental matrices, and their specific effects on heritage material, can be further categorised with respect to their location – i.e. the atmosphere-water interface, within the water column, the sediment-water interface and within the sediment. The first three zones listed are commonly

oxygen-containing, or aerobic environments. On the surface of the water and, indeed, below the surface in shallower coastal waters, perhaps the most significant natural factor affecting site stability is weather, including seasonal water movement (currents, tides and seasonal winds) and storm-related water movement (i.e. gale force winds and waves). According to a report on the British fishing industry and its impact on UCH, a surface wave of 10 m, which is not considered a large wave during winter storms in the UK, “can induce a particle velocity of 40 cm/second at a depth of 100 m under the surface,” which means two metres under a wave with a height of one metre will have an approximate velocity of nearly half a metre per second (MacMullen 2011, p. 2). The constant action of waves on the water surface, along with sub-surface tidal movement, generates significant forces that destabilise and shift sediment on the seabed, potentially resulting in exposure of a site and an increased rate of material degradation. Similar effects occur in lakes and rivers, as strong water movement and winter storms are “washing away large quantities of peat, clay, and sand from submerged archaeological sites, scattering artefacts and bones, while destroying the stratigraphic context” (Flemming 2004, p. 113).

Beneath the surface of the sediment are two sub-zones which link the often aerobic sediment layer at the interface with the water to the anaerobic sediment. There are also environments in which sediment at the surface of the sediment-water interface is already anaerobic due to minimal oxygen content within the water column (Daumas 1990; Pers. Comm. Christian Lott 2009; Pers. Comm. Vicki Richards 2013). However, bioturbation and other physical factors can affect dissolved oxygen levels at varying depths within the sediment column. The level of dissolved oxygen, which in seawater originates from the atmosphere, directly impacts biological activity and the decomposition rate of organic matter, both within the water column and the sediment (Glud 2008; Memet 2009; Richards 1996). The level of oxygen available essentially correlates directly to the range and volume of marine flora and fauna that can survive in that particular environment, and therefore, impacts the relationship between the UCH and the natural environment. Broadly, the more aerobic an environment and the more marine-life it supports, the greater the rate of decay for many organic materials.

Biological factors rely on the chemical make-up of the environment in conjunction with surrounding physical factors. Macro-fauna fouling assemblages

commonly impacting underwater archaeological sites include sponges, barnacles, flatworms, snails, diatoms, blue/green/red/brown algae, starfish, corals, crustaceans, molluscs and tunicates (Cragg et al. 1999; Gregory 1998; Heldtberg et al. 2004; Murphy 1987; Oxley & Gregory 2002; Palma 2004; Thomson 1997). Marine wood-boring molluscs, such as shipworms (*Teredinidae*) and piddocks (*Pholodaceae*), along with certain crustaceans, such as gribbles (*Limnoridae*), are some of the acutely destructive macro-fauna to impact UCH as they consume wood. These organisms require aerobic conditions for survival and therefore will not be found at great depths below the sediment-surface interface.

On a micro-level, marine bacteria are ubiquitous with underwater environments, and represent one of the most significant factors influencing the development of the microenvironment within a body of water (Lawson 1978; Oxley 1998b). The largest populations of bacteria are located at the water-sediment interface due to the high concentrations of organic matter and dissolved oxygen that tend to collect on the sediment surface (Richards 1996). Typically, however, as the sediment depth increases, the dissolved oxygen concentration decreases, meaning that at greater depths in the sediment column, bacterial species are reduced, which diminishes the micro-consumption of UCH. For more information on the relationship between biological factors and UCH see: Brown et al. 1988; Curci 2006; Florian et al. 1977; Gregory 1998; Pournou 1999; and, Thomson 1997.

Physically, temperature and sediment movement also impact the balance of preservation and decay of UCH. Temperature varies in latitude and depth, and helps determine the range and distribution of marine species in a particular area (Conte et al. 1994; Cragg et al. 1999; Gregory 2004). Sedimentation is the process of sediment deposition on and around UCH, which occurs as a result of the force of water movement. In some geographic locations, this can be a cyclical process, due to seasonal water or weather patterns, currents, waves and affected by geology (Manders 2006a; McNinch et al. 2006). In the acute context, sediment movement can have a detrimental impact on the integrity of UCH through the effect of abrasion. In the longer term, however, sediment accretion can alter the micro-environment of an archaeological site through reburial. More static sediment build-up prevents direct access to UCH for aerobic macro-fauna and

other impacting physical factors, which can be integral to the longevity and stability of the site.

For inorganic UCH, such as iron shipwrecks, anchors, cannon and engine blocks, physical and chemical factors play a significant role in degradation rates and site formation processes. Dynamic weather and corrosion are especially relevant factors when considering the stability of larger metal archaeological sites. Steel or iron hull components, for example, require management methods that reduce the rate of oxidation corrosion through the use of sacrificial anodes. This is a process of introducing strategically located and specifically more reactive metals, or anodes, to the site. Having a more negative electrochemical potential than the heritage material, the anode corrodes in favour of the metal UCH.

Interestingly, macro-fauna can also impact the stability of metal UCH protruding from the seabed. Corrosive evidence on shipwreck sites in Florida shows that sea turtles scratch against iron fixtures as a way of cleaning the shell (Pers. Comm. Roger Smith 2008). This interaction results in the turtles scratching away the stabilised outer layer of iron concretions, causing increased corrosion and thus degradation rates (Figure 2). For more information regarding the chemical, physical and biological factors impacting the stability of an underwater archaeological site please see: Bergstrand & Nyström Godfrey 2006; Björdal & Nilsson 2006; Dix et al. 2009; Oxley 1991; Peacock & Turner-Walker 2007; and Richards & MacLeod 2006.

Education and outreach

As presented, a vast range of factors impact the protection, preservation and conservation of UCH. Beyond environmental factors and anthropogenic interference, cultural heritage managers must consider accessibility to sites, available resources and third-party interest when developing management schemes. Although these factors are often site-specific, the amenable component relates to the way shared histories and cultural heritage are perceived within the community. Public perception and community engagement regarding ownership and heritage value are central to developing support for effective management strategies.

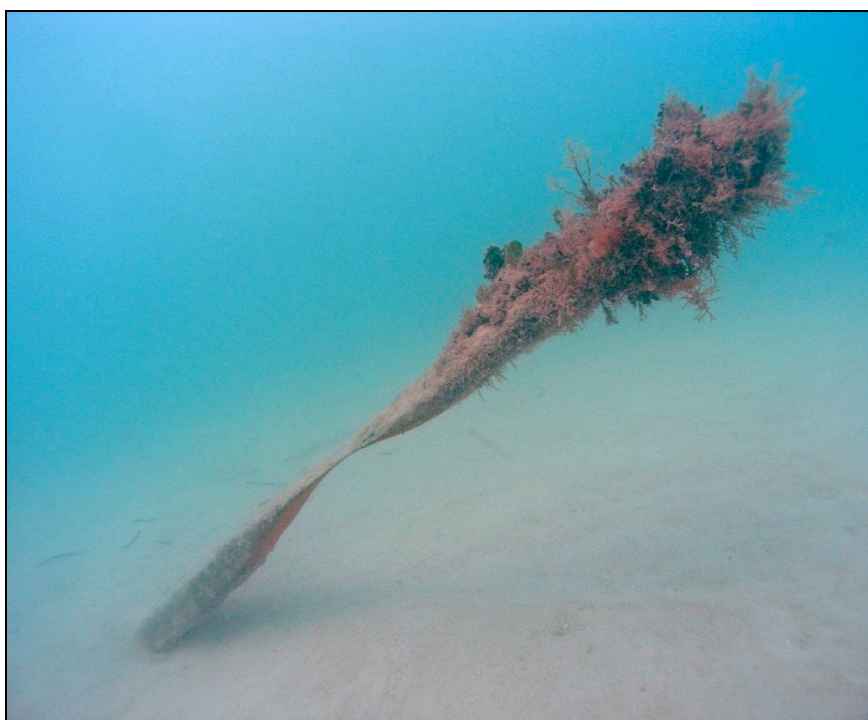


Figure 2 Turtle scratching station at the Rib Wreck, Florida Keys. Courtesy of Florida Bureau of Archaeological Research.

Education and outreach programs generated within different social organisations (i.e. avocational heritage and environmental organisations, secondary and tertiary education, regional and State government) can aid in shifting peoples' opinions on the significance of UCH and its protection. For example, subsequent to the gain in popularity of SCUBA diving, practitioners have successfully engaged sections of the diving community with education and outreach programs directed at integrating safe practices for recreational activities on UCH sites. Indeed, heritage managers must balance this increased public interest in and access to UCH sites against the increased risk of site degradation through over-use – here, legislation plays a critical role in enforcing protection and preservation measures.

This process of engagement has been important in the altering of perceptions and in the development of legislation regarding the management of UCH. For example, SS *Yongala* is a protected zone under the Australian *Historic Shipwrecks Act 1976*, which sets out legislated guidelines for “certain action in relation to historic shipwrecks and relics” (*Historic Shipwrecks Act 1976*, Sec. 13). A permit is required to dive at the site under the supervision of prescribed dive operators, and thus, the operators have a responsibility to inform visiting

divers of the legislated restrictions. In the case of *Yongala*, divers are not allowed to penetrate the hull in order to minimise the impact of divers on the integrity of the wreck and out of respect for the lives lost at the time of wrecking. In 2003, a dive operator contacted police and supplied evidence against a SCUBA diver caught disregarding the rules. The diver was subsequently prosecuted and fined by the Townsville Magistrates Court – and became the first person to be prosecuted under the *Historic Shipwrecks Act* as it pertains to recreational diving (Viduka 2006). While the Act is “framed for protection not prosecution,” this incident supported the no-penetration law for divers and demonstrated that the laws are, in fact, enforceable (Ryan 1977, p. 26).

Shipwreck preserve systems are another example of a successful community education and outreach program. In the US, these programs involve local communities taking ownership of an archaeological site. Preserve systems are employed in Michigan, Vermont and Florida, with the idea that if the community sees value in their site-specific history, over time this sense of public ownership and pride can expand to incorporate additional UCH in their area. Many US States have seen success in communities nominating local shipwreck sites to be included as a Preserve, with many being nominated for the US National Register of Historic Places. Similar systems are established in Saipan, the Cayman Islands, Portugal, Italy and Australia (Alves 2006; Heritage Victoria 2010; Leshikar-Denton 2006; McKinnon 2011). These systems provide information regarding access, history, site etiquette and legislation pertaining to the local UCH.

Additional education and outreach programs within legislative bodies, aimed at altering perspectives, are essential in order to better protect UCH sites. Cultural heritage managers in countries such as the US, Australia and South Africa have initiated programs aimed at engaging law enforcement agencies in UCH protection. These programs provide insight into what is equated with suspicious behaviour and additional signs of looting, significance of materials, and the penalties for removing UCH from within their territorial waters (Pers. Comm. Roger Smith 2008; SAHRA Online n.d.; Sullivan 1994; Walker 1994).

Conclusion

While the age of archaeological evidence can be measured in hundreds and even thousands of years, the progression of time ultimately marks the degradation for all physical cultural heritage. Over time, tangible UCH is exposed to different anthropogenic influences and natural forces, which directly impact the rate of deterioration of artefacts and archaeological sites. The most effective management of UCH involves a pragmatic assessment of the context and various factors impacting the heritage materials coupled with an active preservation approach. Furthermore, a more comprehensive approach to UCH management includes education and outreach, interdisciplinary cooperation, stronger heritage legislation, and an international consensus on the global best practice for UCH management.

Unfortunately, many treasure hunters also argue in terms of the immediacy of time – of the need to ‘act now’ because the shipwrecks will not be here in the future. The ‘time’ arguments are often biased and quite convincing to an uninformed listener, which tend to result in the privatisation of UCH. However, International Committee for Underwater Cultural Heritage member John Gribble (2006, p. 42), argues that “without winning over [the] hearts and minds” of the community, “legislation can never truly succeed,” and thus treasure hunters and their ‘timely’ persuasion will prevail. To ‘win over’ communities, practitioners should continue to promote projects, involve the public, disseminate information and conduct creative education and outreach programs to access those not commonly engaged with heritage.

As evident by the discussion provide regarding at-risk UCH, the abovementioned limitations and overall recommendations demonstrate a greater need for a reassessment of UCH management strategies and updated heritage legislation. A more modern interpretation of managerial terms, such as *preservation*, *protection*, *conservation* and *in situ* within the context of impacting factors, available resources and heritage value can mitigate many of the anthropogenic and natural factors negatively impacting global heritage.

4

Take only photos, leave only bubbles: an assessment of *in situ* preservation

Significant archaeological finds in the 1960s and 1970s, in conjunction with a stable global economy in the 1980s, afforded both community and financial support for excavation, recovery and active *ex situ* conservation management of UCH sites around the world. By the 1990s heritage practitioners identified and discussed the need to develop a universal best practice for UCH management, which included a better utilisation of *in situ* preservation techniques due in part to a decline in funding, facilities and personnel capable of conserving artefacts from wet environments (Nyström Godfrey et al. 2005). This is not to say that *in situ* preservation was not utilised by practitioners prior to these discussions. In fact “the first serious attempts were made approximately ten to fifteen years prior” (Manders et al. 2008, p. 186), but the practice of stabilising and preserving UCH materials within their geographical and contextual landscape was not widespread. Dialogues concerning the establishment of a best practice management plan for UCH led to the development of the 1996 ICOMOS *Charter on the Protection and Management of Underwater Cultural Heritage*, which recognised both *in situ* preservation and *ex situ* management. While the latter approach involves the removal of samples and artefacts for research, preservation and public display, the subtleties regarding what comprise *in situ* preservation however, were not summarised within the text.

Two decades later, UNESCO members, with the aid of experts in the field of heritage management, government representatives and participation from other

interested parties, compiled the text for the 2001 UNESCO *Convention on the Protection of the Underwater Cultural Heritage*. This Convention specifies 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” (UNESCO Convention 2001, Art. 2.5). It is important to emphasise that the Convention standards do not exclude excavation but stipulate a number of factors required in order to ethically disturb and excavate a site; see Chapter 5 for more information on the 2001 UNESCO Convention.

While presenting *in situ* preservation as the ‘first option’ to be considered in UCH management planning, the 2001 Convention does not specifically define a scope of practice associated with the *in situ* methodology. Without an explicit definition or characterisation of associated techniques, *in situ* preservation is frequently misinterpreted to mean that archaeological sites should not or can not be disturbed (Bernier 2006; Ortmann et al. 2010; Wreck Watch 2011). This is also coupled with a modified perception of the ‘first option’ as the “preferred site-management option” (McCarthy 2006, p. 8). Should this representation of *in situ* preservation assume precedence over other definitions (which will be discussed later in this chapter), practitioners may find it increasingly difficult to obtain governmental support (i.e. legislative amendments and access to financial resources) to actively manage UCH within jurisdictional waters.

In 2008, Flinders University Master of Maritime Archaeology student Nicole Ortmann (2009) disseminated a questionnaire among 210 participants consisting of government officials, heritage managers, museum employees, academics, consultants, conservators, archaeologists and others across twelve countries specifically addressing *in situ* preservation and underwater repositories. The aim of the survey was to determine whether practitioners actively employed *in situ* preservation and storage methods, and what their attitudes and concerns were regarding these management approaches. For the purposes of the questionnaire, *in situ* preservation was defined as:

Any steps taken on a site or intervention with a site in order to extend its longevity while maintaining original context and spatial position; while artefacts and features may have been excavated and/or removed, the site itself remains in place and retains all or a majority of its original context (Ortmann 2009, p. 5).

Responses were received from 42% of the survey participants (Ortmann 2009), allowing the researcher to compile and review a range of practitioners’

assumptions associated with *in situ* preservation and underwater repositories, which include the application of both passive and active methods. Based on responses received, many practitioners equated *in situ* preservation with a ‘do nothing’ approach, along the lines of an ‘out of sight, out of mind’ perspective. However, there were also practitioners who suggested that if “you can't tell the difference between in-situ [sic] preservation and neglect then its [sic] actually just neglect” (participant in Ortmann et al. 2010, p. 34).

In seeming to not fully appreciate the range of *in situ* preservation techniques available and outcomes from active management, many practitioners tended to regard *in situ* preservation as too costly and not effective. In contrast, the survey also exhibited that some practitioners regarded *in situ* preservation techniques to be both a “cost- and resource-effective means of protection,” but agreed that those in charge of funding management programs may not understand that *in situ* preservation should be an active practice (Ortmann 2009, p. 66). Without identifying the benefits of active management, practitioners are experiencing government-sanctioned managerial restrictions (i.e. lending to passive management only) which result in marginal protection for underwater sites. These comments were followed with suggestions that a “standardised framework for collection management *in situ*” should be devised (participant in Ortmann et al. 2010, p. 36).

***In situ* preservation**

As international conventions and guidelines direct management towards *in situ* preservation, it is imperative that practitioners reach a consensus regarding a definition for the term beyond the literal translation of ‘in place’, as well as agreeing on endorsed techniques. In regards to UCH, *in situ* essentially means “the place where the site has been discovered” (Manders 2009, p. 31), which can be strictly interpreted as leaving the archaeological materials in context. This interpretation can become problematic, however, as the archaeological context – or site – remains vulnerable if exposed to anthropogenic interference and environmental factors.

As applied to cultural heritage, the concept of *preservation* can be multifaceted. English Heritage's *Conservation Principles: Policies and Guidance* (2008, p. 74) defines *preserve* in accordance with the *Oxford English Dictionary* as "to keep safe from harm." Co-founder of Ships of Exploration and Discovery Donald Keith (2002, p. 738) associates *preservation*, in an archaeological context, with the manner in which artefacts "fare in nature, without human interference" in their site-specific environment. A more active *preservation* approaches take into consideration the value of the heritage material *in situ* versus *ex situ*, the practicalities of efficiently and effectively preserving a site using an acceptable range of techniques, the use of underwater repositories, and the need for site preservation after intrusive exploration. The interests of the public must also be considered, given that the management of cultural heritage should ultimately be for the benefit of the community to which the heritage 'belongs'. It is therefore important to consider the many ways that UCH material can be accessed and utilised by the local and broader community, both directly and indirectly. Museums, outreach and education programs, tourism and media, among others, are all viable ways of sustainably engaging people with UCH – and importantly, all are compatible with an *in situ* preservation approach.

In these regards, the concept of *in situ* preservation has multiple interpretations – from passive to reactive to proactive. One expression of the term includes "undisturbed or only slightly disturbed sites that are protected in their original position in order to further preserve their current condition and archaeological integrity as long as possible" (Manders et al. 2008, p. 186). Comparatively, it can be presented as preservation that "consists of covering exposed portions of the site to diminish deterioration and the likelihood of damage from storms and human interference" (Engelhardt & Rogers 2009, p. 29). These two definitions, while representing rather different ideas, are both congruent with aspects of the definition used by Ortmann (2009) in surveying the opinions of heritage practitioners. Importantly, a commonality between the three definitions is that *in situ* preservation refers to the overall site rather than individual artefacts. By compiling the previously presented active definitions associated with *in situ* preservation, UCH should, where possible, "be protected on-site in the marine environment" in conjunction with appropriate active

preservation techniques, which are determined by site-specific environmental conditions (Björdal & Nilsson 2008, p. 863).

More passive interpretations of *in situ* preservation include protecting against direct damage or detrimental interactions with a UCH site, leaving the materials exposed to the natural forces that affect the contextual landscape. However, many practitioners argue that not intervening in the cyclical exposure and reburial of a site can negatively impact the long-term integrity of the heritage material, and therefore “cannot be seen as being synonymous with preservation” (Oxley & Gregory 2002, p. 715). Landscape archaeologists Robert Van de Noort et al. (2001, p. 95) suggest that “the ultimate aim of *in situ* preservation is the creation and maintenance of a static burial environment that is sustainable in the long term,” which may require the combination of a number of preservation methods to ensure the effectiveness of the overall approach. As such, it can be argued that leaving archaeological remains *in situ* without addressing site-stability impacting factors cannot deter degradation on its own, and should not be considered as part of the spectrum of active *in situ* preservation methodologies. The contradicting perceptions, even among heritage managers, demonstrate the need for further clarification of acceptable *in situ* preservation techniques.

According to conservation scientist Jean-Bernard Memet (2009, p. 48), the application of *in situ* preservation of UCH is divided by practitioners into three broad categories: the “organic object approach,” “metal wreck approach,” and “built heritage approach.” The ‘organic’ classification applies to the reburial of wooden shipwrecks and organic materials post-survey and reburial after exposure, whether through natural forces or anthropogenic interference. The ‘metal’ approach incorporates techniques aimed at the preservation of iron and steel shipwrecks and other ferrous and non-ferrous heritage objects, including reburial and cathodic protection, with an “ultimate extraction of wrecks and artefacts on the one hand, and the opening of underwater parks on the other” (Memet 2009, p. 48). And lastly the ‘built heritage’ classification refers to the establishment of underwater parks, heritage trails and virtual visits – programs that allow minimal impacting interaction with the UCH site. Some archaeologists and heritage managers also associate underwater repositories as a method of *in situ* preservation, which deals with the cataloguing of artefacts and features removed

from archaeological sites in more secure and organised underwater collection depots, whether on site or elsewhere.

These four approaches require an understanding of the complex and dynamic interaction of physical, biological and chemical forces affecting the site, the purpose for the preservation, the types of materials to be managed *in situ* and the establishment of a long-term program to monitor the stability of the sites. The remaining text of this chapter will address these classifications, detail their associated methodologies, and examine how each of the four approaches fit within the abovementioned definitions for *in situ* preservation. Information provided on the UNESCO website and within the 2012 UNESCO *Manual for Activities Directed at Underwater Cultural Heritage* will also be integrated into this literature review as an indicator of the international organisation's representation of *in situ* preservation.

Organic object approach

An organic heritage approach favouring reburial of a site and follow-up over time consisting of probing, studying and excavating followed by reburial and subsequent monitoring of the remaining site (UNESCO 2012b, 'Conservation in Management', sub-s 'Conservation Programme').

The 'organic object approach' to *in situ* preservation is to be applied when managing organic materials such as waterlogged wooden sites (i.e. historic shipwrecks, jetties, slipways, wharfs), wooden artefacts, textiles, rope, leather and food remains (i.e. seeds and animal bones). Due to environmental factors, larger organic sites are rarely intact, as site formation processes impact exposed materials and degrade them down to the sediment-water interface. For those organic materials buried beneath the sediment, in a more anaerobic environment, preservation rates are higher (Gregory et al. 2008). Factors impacting preservation include the wrecking event, possible salvage, degradation due to storm activities and water movement, sediment composition and consumption by macro- and micro-organisms. Over time, and depending on the site-specific environment, buried organic materials reach a state of relative equilibrium in which degradation slows down. However, if an organic material's equilibrium is disrupted through exposure, as a result of either natural forces or human impact, deterioration accelerates until a new equilibrium is reached and the rate of material degradation stabilises (Oxley 1998a). Due to the impact of site specific forces altering the

stability of the UCH, an equilibrium of conditions may not occur without some active, anthropogenic intervention.

In order to mitigate deterioration, practitioners employ a range of techniques to attempt site stabilisation. Techniques may include backfilling a site using sediment from the excavation, introducing sediment from a nearby area, either by hand or via dredge, using sand bags, covering the site with ballast or various rocks, or altering the site by adding toxins (e.g. tri-butyl-tin oxide [TBTO]), geotextiles, artificial seagrass or fences. Under some circumstances, UCH stabilisation includes physically relocating the heritage materials. Depending on site-specific conditions, these techniques may be effective in some areas, but not applicable or inefficient in others (Harvey 1996; Hosty 1988; Moran 1997a, 1997b; Pournou 1999; Oxley 1998a; Sledge 1979; Waddell 2007). More often than not, a combination of methods is employed after a disturbance survey, excavation or natural exposure in order to ensure that, given the known environmental conditions of the site, the organic UCH remain buried beneath the sediment. Reburial can also refer to the movement of cultural remains from one location to a safer or more stable environment, either to re-bury artefacts and hull structure whole or dismantled, utilising one or more of the methods listed above (Björdal & Nilsson 2008; Waddell 1994). Ultimately, whichever technique or combination of techniques is applied, the intended outcome is either to emulate the pre-exposure environment or to create a more stable environment to mitigate chemical, physical and biological factors causing degradation.

Backfilling

Although not specifically labelling the action as ‘backfilling’, the UNESCO UCH website (UNESCO 2012c, ‘Protection’, sub-s ‘Preservation’), describes the process of re-burial with layers of sediment as:

They may cover an excavated site and be produced by inverting the position of the evacuation tube of the water pump (before used to extract sediment) throwing layers of it back onto the structures. This method however makes a later uncoverage for further research problematic.

Backfilling, or replacing the sediment removed during a disturbance survey or excavation, is standard practice for most archaeologists (Baker & Henderson 1979; Curci 2006; Oxley 1998a; Oxley & Gregory 2002). This is commonly the most convenient method after disturbing the sediment on an archaeological site

because the backfill is typically deposited near the site, is easily accessible and cost-neutral. Unfortunately, this method does not provide “an impermeable barrier to marine organisms” in the short-medium term, as oxygen is reintroduced into sediment through the reburial process and more aerobic conditions will prevail in the sediment (Curci 2006, p. 22). This further increases the rate of degradation until the physico-chemical reactions and biological activity consume the oxygen and more anoxic conditions eventually prevail (Pers. Comm. Vicki Richards 2013).

Results from research projects in Sweden and Australia recommend the re-establishment of an anaerobic environment for the organic UCH as soon as possible in order to minimise degradation after exposure. More specifically, data suggests that without reburying the site or artefacts to a sufficient depth – nearing 1 m – UCH can remain vulnerable to deterioration through more aerobic organisms that can penetrate shallower layers of sediment and continue to consume the organic remains (Björdal & Nilsson 2008; Curci 2006; Godfrey et al. 2011; Gregory 1998; Winton & Richards 2005; Pers. Comm. Vicki Richards 2009). It is also important to ensure that the backfill is as devoid of organic material (i.e. wood, seagrass, human faecal matter and food wastes) as possible, otherwise changes in the micro-environment on site will occur, which could cause an increase in degradation rates in the future (Pers. Comm. Vicki Richards 2013).

Sediment and gravel drop

Practitioners employ barges and water dredges to redeposit large quantities of sediment across a site after exposure. This technique has proven both effective and ineffective, depending on the type of sediment to be deposited, the environment and the depth of the site; see Table 1 for a list of advantages and limitations associated with this technique. In 1978, archaeologists in England operated a hopper barge to dump gravel onto *Mary Rose* as a short-term solution to minimise site exposure between field seasons (Oxley 1998a). This method proved largely successful because the gravel was heavy enough to sink to the seafloor at this shallow-water site. In contrast, practitioners managing *James Matthews* near the Fremantle coast in Western Australia considered gravel-dropping as a long-term stabilisation method, however decided against it due to the difficulty of removing the overburden should re-excavation be required.

Additionally, there were concerns that the weight of the material could damage the degraded fragile, wooden structure on site (Richards et al. 2007).

Table 1 Advantages and limitations of employing the method of sediment and gravel drop on UCH (reproduced from Manders 2012, Unit 9.5.4).

Advantages	Limitations
<ul style="list-style-type: none"> • Inexpensive. • Product easy to obtain. • Can be deposited in many ways (e.g. water dredge and ship). • Natural product. 	<ul style="list-style-type: none"> • The physical environment remains the same, so in cases of erosion, this method can only be effective for a very short period. • Sand may be eroded (by currents) and deposited somewhere else, where it is not wanted. • Sand or gravel from another place is introduced on site.

Another method of sediment drop was utilised in Western Australia in 1982, at the site of the American whaler *Day Dawn*. Archaeologists used a hopper barge to dump 400 m³ of sand over the wreck after excavating in an attempt to rebury the site for long-term preservation (Kimpton & Henderson 1991; Oxley 1998a). Unfortunately, unlike the heavier gravel used at *Mary Rose*, the sand was lost in the water column and only a small percentage dusted the vessel (Kimpton & Henderson 1991; Moran 1997a). A similar experience occurred three years later at the site of *William Salthouse* in Port Phillip Bay, Victoria, Australia, when an attempt to drop large quantities of sand also resulted in only a light dusting across the site (Staniforth 2006; Harvey 1996). These examples demonstrate that an understanding of the environment is necessary for a successful application of the method.

There is a risk that introduced sediments can contaminate the local environment, as well as damage the heritage materials through the force of the drop itself, adversely impacting the site. In order to mitigate any potential contamination to the underwater environment, an assessment of the deposition materials should be conducted prior to reburial. Some practitioners also recommend placing a barrier layer, such as a geotextile, between the archaeological material and the introduced sediment. This acts as a marker for previous work, should re-excavation or access to the site be necessary, while also providing UCH some protection against any foreign contaminants in the deposited sediments (Oxley 1998a; Oxley & Gregory 2002).

Sandbags (Hessian and polymeric)

Remains may be covered by sand bags and subsequent layers of sand. Sand bags mostly protect only parts of the underlying structure and may be heavy and inflexible (UNESCO 2012c, 'Protection', sub-s 'Preservation').

During the 1980s, practitioners began experimenting with sandbags to help maintain coverage over a site (Hosty 1988; Waddell 1994). Initially, Hessian sandbags were thought to be a suitable, economic solution for protecting a shipwreck, but archaeologists soon learned that the method did not always work as an isolated preservation technique (Coroneos 2006b; Oxley 1998a; Oxley & Gregory 2002). In some instances, the use of Hessian sandbags have been successful in maintaining sediment over cultural remains, however, they themselves are prone to degradation over time and thus only remain effective until they degrade. The Hessian bagging material itself can also act as an organic food source for marine organisms, altering the biological and chemical profile of the site, which can further promote deterioration of the underlying organic UCH. For a more long-term preservation solution it was determined that synthetic bags were more effective.

Under certain environmental conditions, sandbags have been placed on site to prevent the erosion of sediment, or scouring, along a shipwreck site. However, the placement of the bags themselves can impact water movement on site and in some instances, promote scouring around exposed materials (Coroneos 2006b; Oxley & Gregory 2002). Archaeologists working on *Sydney Cove* in Tasmania, Australia, strategically placed sandbags on site to discourage toe-scouring along the shipwreck (Oxley 1998a). A similar method was utilised at the site of the wooden shipwreck *Solway* in South Australia. Practitioners placed over 1000 polyester sandbags on *Solway* to act as a sediment trap, deter inquisitive divers and protect the wooden remains from both biological and physical threats (Coroneos 1996). After deposition, a monitoring programme was established to gauge the conditions of the site. Managers noted that the sandbag mound on the “most vulnerable parts of the site modified water movement patterns which resulted in scouring around the bags, thereby exposing more timbers” (Coroneos 2006b, p. 57). Three-hundred additional sandbags were placed on site to rectify this problem and an extra 500 were placed nearby in case future alterations were required. To date, the sandbags are still in place over the site and recent monitoring identified minimal scouring (Pers. Comm. Amer Khan 2012).

As an *in situ* preservation technique, sandbags prove to be an excellent short-term solution for reburial. They are commonly applied as an excavation marker and pseudo-backfill between survey seasons, are often utilised in conjunction with other methods of reburial and can be employed as an emergency tool until a more efficient, long-term solution can be determined (Oxley 1998a; Oxley & Gregory 2002). In 2000, staff from the Western Australian Museum (WAM) conducted an intensive on-site conservation survey of *James Matthews* after discovering that the shipwreck was under considerable threat from a recent change in sedimentary processes (Richards 2012; Richards et al. 2007). Practitioners assessed the potential for both *ex situ* and *in situ* management options and estimated that it would cost between four to six million dollars to recover, conserve and store the wooden hull remains *ex situ*. These figures were deemed too expensive and thus the idea of a full excavation was abandoned (Nyström Godfrey et al. 2005; Winton & Richards 2005). Instead, artefacts from *James Matthews* were removed and conserved, whilst the hull remained *in situ*.

In 2001, as a temporary solution to protect the wooden hull structure, canvas sandbags were laid over exposed materials as well as placed on areas where only a small layer of sediment covered the timbers. After three months, very little of the canvas bags remained; after six months, approximately one-centimetre of sand covered the once exposed timbers, leading practitioners to investigate alternative methods of preservation (Nyström Godfrey et al. 2005; Richards et al. 2007; Winton & Richards 2005). The rapid degradation of sandbags was attributed to the shallow environment, warm water temperatures and significant biological activity in this area. Excessive water movement during seasonal storm activity along the Fremantle coastline also contributed to the increased rate of sandbag degradation. Monitoring of *James Matthews* continued through 2003, with an increase in noticeable exposure each visit. In 2004, UV-stabilised, reinforced polyethylene recycling bags were utilised as an interim-management solution until a more environmentally compatible, long-term stabilisation plan could be implemented; unfortunately, “this technique had limited success” (Richards et al. 2007, p. 116).

Overall, some concerns remain that sandbagging is an under-researched method as an independent technique and should thus be employed in isolation as an emergency stabilisation tool or short-term solution (Oxley & Gregory 2002).

Should sandbags be employed as a management option, the technique is most efficient when applied to a site demonstrating low relief, with a significant proportion buried in the substrate. The bags are best positioned when they overlap, to minimise gaps and movement of materials between bags. It is also important to consider the material construction of the bags themselves, as the effectiveness may only be “measureable in years rather than decades” (Oxley & Gregory 2002, p. 723). This method can be laborious and time-consuming, so ensuring sufficient time to effectively deploy and position the bags underwater is important. Additional advantages and limitations can be seen in Table 2.

Table 2 Advantages and limitations of employing sandbags on UCH (reproduced from Manders 2012, Unit 9.5.1).

Advantages	Limitations
<ul style="list-style-type: none"> • Protection against looters. • Probably encourages the formation of an anaerobic environment. • Long term preservation. • Material easy to obtain. 	<ul style="list-style-type: none"> • High labour costs. • Difficult to monitor. • Weight on the wreck site. • Strong scouring around the protected site. • Some types of sandbags might deteriorate easily (e.g. natural materials like canvas).

Seagrass (artificial and planted)

Artificial and planted-natural seagrasses can be introduced to a site in order to encourage and maintain a build-up of sediment across an area. The artificial systems traditionally consist of plastic fronds attached to a frame, which are designed for “self-burying,” with the level of collected sediment controlled by pre-determined frond-length (Camidge 2009a, p. 167). The artificial seagrass materials are, however, environmentally sensitive systems and are considered relatively costly (Table 3).

A range of artificial seagrass systems have been applied on a variety of shipwreck sites around the world, but very few attempts have produced positive results (Moran 1997b). The first successful application of artificial seagrass mats in association with UCH occurred in 1990 at *William Salthouse* (Elliget & Breidahl 1991; Harvey 1996; Hosty 1988; Staniforth 2006). Mats created by Cegrass Erosion Control Systems, UK Ltd., consisted of fronds made from closed-cell foamed polypropylene that use “chemically inert material to create a

flexible barrier to retard the flow of water and encourage the build up of particles to create a fibre-reinforced sand bank” which were then “hydraulically anchored into place with zinc coated steel anchors” (Moran 1997b, p. 134). This system was originally designed for use on deep sea oil rigs to protect pipeline installations, fix platforms and stabilise mobile rigs in order to control, prevent and correct further scour (Moran 1997a, 1997b). A total of 42 mats were placed on the *William Salthouse* site, and once installed, the units began collecting sand and miscellaneous particles from the water column to quickly build up a natural barrier (Elliget & Breidahl 1991; Harvey 1996; Staniforth 2006) (Figure 3). Shortly after placement, sediment began to accumulate both around and on top of the shipwreck, even in areas where mats were not located. Although this project was successful, the expenses for the project were approximately AUD\$100,000. Site managers consider the cost of these Cegrass-specific mats too high for re-application in the future, despite the positive results achieved (Staniforth 2006).

Table 3 Advantages and limitation of employing artificial seagrass on UCH (reproduced from Manders 2012, Unit 9.5.6).

Advantages	Limitations
<ul style="list-style-type: none"> • Works well to create an anaerobic environment. • Looks natural, if natural colours are used. • Has nature do the work after installation. • Can be installed easily. 	<ul style="list-style-type: none"> • Very expensive if bought on the market, labour intensive when self-fabricated. • Very sensitive, it may work for a short period until the fronds become overgrown with algae and then settle flat on the seabed. • Has to be installed carefully. • No possibilities to overcome significant height differences. • Scouring may occur under and around the mats.

Projects involving *Clarence* and *James Matthews* in Australia, HMS *Colossus* in the UK and HMS *Fowey* the US are just a few examples of other sites that have utilised artificial seagrass systems. At each of these shipwreck sites, however, the technique proved unsuccessful due to a variety of differing factors including inconsistent water movement, biofouling and human interference (Camidge 2005; Oxley 1998a; Richards et al. 2007; Skowronek & Fischer 2009; Pers. Comm. Peter Harvey 2012). Because of the success with *William Salthouse* in Port Phillip Bay, archaeologists from the Victorian Archaeological Survey believed the same system could work to protect *Clarence*, another wooden

shipwreck located in the Bay. In 1993, the remaining Cegrass System mats were deployed on the *Clarence* site. Unfortunately, even though the shipwreck is located within a protected zone, shortly after placement, it was evident the matting system was damaged by anchors from local fisherman; the expensive artificial mats were never replaced (Pers. Comm. Peter Harvey 2012).



Figure 3 Cegrass © mats placed on *William Salthouse*. Courtesy of Heritage Victoria.

In 2003, an artificial floating frond system by Seabed Scour Control was one of three *in situ* preservation methods trialled over two years adjacent to HMS *Colossus* in hopes of determining an efficient long-term management option for the site (CISMAS 2005) (Figure 4). Over the course of the trial, the synthetic fronds were gradually colonised by weeds and kelp, thus weighing them down and leaving the mats ineffective. Nominated site archaeologist Kevin Camidge (2005), also reports that the fronds began to tangle and shortly thereafter began unravelling.



Figure 4 Seagrass mats placed on HMS *Colossus* at 20 months after placement. Courtesy of K. Camidge.

Similarly, researchers from WAM manufactured a mat consisting of polyvinyl chloride bunting to emulate the grass fronds, attached to polyethylene garden trellis (Richards et al. 2007). The mat was anchored flush to the seabed with UV-stabilised polymeric sandbags, and within three months, algal growth began forming on the fronds. Initially this did not hinder the bunting from moving freely within the water column, however, after two years the fronds were so overgrown that they could not remain up-right (Figure 5). Additionally, there was no evidence that sediment depths increased as a result of the artificial seagrass; in fact, toe scour was noted around the northeast edge of the mat, with dead seagrass accumulating under the mat (Richards et al. 2007).

On the site of HMS *Fowey*, as a part of the Legare Anchorage Shipwreck Project in Florida, the US National Park Service was provided with 50-units of Seascape Seagrass – an inert fibreglass cloth tube with floating Styrofoam supported fronds. This type of artificial seagrass was successfully placed along Cape Hatteras National Seashore to minimise shoreline erosion along the dynamic, shallow coastline. The mats were positioned along the seabed in order to “counter the normal water erosional tidal flow over the wreck site” (Skowronek & Fischer 2009, p. 96). The intention of artificial seagrass use is to catch



Figure 5 Fouled artificial seagrass fronds on *James Matthews* after 2 years on site. Courtesy of WAM.

sediments from within the water column, but as the Seascope fronds used around the *Fowey* site did not maintain their buoyancy, they proved ineffective. It was determined that the system failed because the fronds were buoyed using Styrofoam, which, at depth, compressed and lost buoyancy, causing the fronds to droop. Adding to the failure of the attempt, the low-energy area enabled algae and crustaceans to colonise the fronds, causing the artificial seagrass to sink even further towards the seabed (Skowronek & Fischer 2009). Although the seagrass system did not act in accordance with its purpose, it did enable some sediment build-up prior to the drop in frond height. Additionally, the fronds lying atop the seafloor further provided some protection over the site. It was, however, difficult for practitioners to assess the overall success of the method as there was evidence of prop-wash disturbance from treasure hunters in the area; this may also have impacted the efficiency of the Seascope fronds (Oxley 1998a).

In addition to artificial seagrass systems applied at the Legare Anchorage Shipwreck Project, the Park oceanographer experimented with planting two natural seagrass species, *Syromgodium* (manatee grass) and *Thalassia* (turtle grass), over the site, with the idea of stabilising existing sedimentation and promoting vegetation growth in the area to increase sediment retention (Oxley

1998a; Skowronek & Fischer 2009). Both juvenile and mature shoots were removed from shallow water-depths and nailed on the 10 m deep site. The method proved unsuccessful on the site itself due to plant adaptation problems and the use of steel nails to hold the plant-shoots in place. The scatter of steel nails on the seabed introduce an additional concern for site managers, as the nails can cause both an electrochemical change in the UCH and affect the local micro-environment on site. Interestingly, the Park oceanographer also planted natural seagrass adjacent to the site, without nails, and these patches of seagrass did successfully grow. This suggests the steel nails had a negative impact on the development of the replanted natural seagrass (Oxley 1998a; Skowronek & Fischer 2009).

Overall, artificial seagrass systems are sensitive to environmental factors on site, as water movement, depth and marine growth can impact the efficiency of the method and sedimentation beneath the mats. The seagrass trials demonstrated that it is important to place the systems as horizontal to the seabed as possible because the mats “are much less effective when deployed on a slope as opposed to a near horizontal seabed” (Oxley 1998a, p. 167). Furthermore, the artificial seagrass systems should be orientated parallel to the movement of the current to maximise potential sedimentation; without significant water movement, the fronds will not be able to catch enough sediment from within the water column to successfully bury the site. Periods of low-energy water movement also have the potential to encourage the colonisation of marine organisms on the fronds, resulting in wilting and further diminishing sediment collection over a site.

Textiles (shade cloth, geotextiles and netting)

Sites may be reburied by a layer of hard-wearing fabric (for instance polypropylene) to create a barrier between the objects and the covering element and be stabilised by weights, such as sand bags. This has proven to be a cheap and effective way to protect sites from anchor damage, pillaging and to reach a stable conservation state. If such nets are loosely placed over a site, sediments that are moved over the seabed by tidal currents may continue to penetrate into the holes of the net and settle over the site, covering it within a few weeks, preventing abrasion, scouring and attacks by woodborers. This method is relatively inexpensive and was for instance used in Sri Lanka to cover the wreck of the *Avondster* (UNESCO 2012c: ‘Protection’, sub-s ‘Preservation’).

Textiles employed within a UCH environment range from shade cloth to geotextiles to netting, which are composed of synthetic fibres acting as a filter between water, sediment and the cultural material. Shade cloth and netting are

often constructed with polypropylene, which when placed loosely over a site allow sediment particles to drop down from within the water column, through the woven fibres, onto the UCH. Depending on the mesh-grade, water movement can also be minimised under or be prohibited from penetrating the textile (Björdal & Nilsson 2008; Curci 2006; Manders 2008; Manders & Lüth. 2004; Oxley 1998a; Palma 2005).

Dutch practitioners have utilised geotextiles in the Wadden Sea since the early 1980s and have an understanding of how the local environmental factors can impact the effectiveness of this *in situ* preservation technique (Manders et al. 2004). In 1988, the East India Company vessel BZN 3 was the first shipwreck in the Netherlands to be physically and legally protected (Manders 2009, 2006b; Manders et al. 2004). The site was covered with a 60 m x 40 m sheet of polypropylene geotextile and 6000 sandbags; since this time, annual monitoring has “shown that this strategy has proved successful” (Oxley 1998a, p. 168). Similar work has been conducted on sites in Sri Lanka, Australia and across Europe (Manders et al. 2008; Manders et al. 2004; Pournou 1999).

Research was conducted in 2001 by members of the Monitoring, Safeguarding and Visualising North-European Shipwreck Sites Project (MoSS), aimed at obtaining a better understanding of the environmental factors impacting site degradation in hopes of being able to more effectively manage UCH within the European community. The project included assessments of *in situ* preservation techniques, and resulting information was made available to promote public interest and knowledge (Alvik & Tikkanen 2004; Palma 2004; Tikkanen 2002). The MoSS project trialled various mesh-grade Terram textiles in association with differing applications and wrecking environments to try and develop a “standard for the management of European historical wreck sites” (Palma 2005, p. 323). Although the results between trials were inconsistent, they did demonstrate textiles have an effect on sediment collection and marine degradation rates – but an assessment of mesh-grade within a site-specific environment needs to be trialled prior to application. MoSS practitioners also identified that by establishing an anaerobic environment underneath a textile layer, degradation by marine biota could be minimised.

Polymeric shade cloth mats were employed over the bow of *James Matthews*, but proved only marginally successful because the cloth was placed

flush against the seabed and the textile became “heavily colonised with a thick algal mat” (Richards et al. 2007, p. 117); both problems prohibited the mat from floating in the water column, which minimised sedimentation. It was however noted that the sediment under the shade cloth possessed lower oxygen levels most likely due to “a decrease in the diffusion of oxygen through the thick algal mat and degradation of organic matter” (Richards et al. 2007, p. 117). Although the method proved initially unsuccessful, the more anaerobic conditions under the mat encouraged researchers to further investigate the technique. In 2005, two shade cloth mats were placed on site: one replacing the mat on the bow and the second adjacent to the wreck for experimental purposes. Small fishing buoys were attached systematically across the netting in hopes of keeping the cloth afloat in the water column and to further entice sediment encapsulation. From this point of view, the buoys did not prevent algal growth, and after one month the shade cloth was colonised and weighed down to the seafloor (Richards et al. 2007). Despite this, the catchment proved successful – most likely a direct result of its placement within the current and the environmental conditions impacting the site (Figure 6).

In 2001 the stern of HMS *Colossus* was located approximately 350 m east of the previously identified site, and was subsequently designated under the UK *Protection of Wrecks Act 1973*. Within a year of exposure, heritage managers noted the stern timbers had suffered greatly from the effects of marine borer attack. Two years later, English Heritage commissioned Kevin Camidge to run a two-year stabilisation trial on the site in order to determine the most cost effective and efficient method for preserving *Colossus in situ* (Camidge 2009a, 2009b, 2008). Camidge assessed previous stabilisation work conducted during the excavation of *Mary Rose*, evaluated methods applied on the MoSS Project, *William Salthouse* and on *Avondster* in Sri Lanka, along with sites within the Netherlands to determine which techniques to trial near *Colossus* (Camidge 2009a).

Three different methods were chosen and placed adjacent to the shipwreck to ensure that the site itself was not affected by the experiment. Camidge trialled the use of a synthetic mesh, an artificial seagrass system and a geotextile matting product called ‘Terram 4000’, which is a thermally bonded synthetic material comprised of 70% polypropylene and 30% polyethylene. The Terram matting system was secured to the seabed by sandbags placed along the perimeter of the

geotextile. The synthetic mesh consisted of a fine polypropylene net that was anchored with sandbags at either end, leaving the middle of the mesh free to move above the seabed (Camidge 2008). See the ‘Seagrass’ subsection above for review of the artificial seagrass trial on *Colossus*. Camidge also designated a control area for comparative assessment.



Figure 6 Results of sedimentation on *James Matthews* after 4 years of the shade cloth mat on site. Courtesy of WAM.

Throughout the trial period the systems were regularly monitored, and results demonstrated that all three methods were more efficient in terms of preservation than the control. According to Camidge (2009a, 2008), the Terram 4000 mat outperformed the other methods in terms of collected sediment depth. Within three months of the trial, the Terram mat was colonised with seaweed, which most likely aided sediment accretion. Within the same time period, the synthetic netting tore and became entangled with loose kelp. Although the netting was replaced, a pattern of tearing, kelp entanglement and replacement began, thus proving inefficient within the test environment. As discussed in the previous ‘Seagrass’ subsection, the artificial seagrass trialled on *Colossus* fared similarly.

Although the seagrass initially enabled sedimentation over the trial area, kelp growth on the artificial fronds caused the synthetic material to sink, resulting in an ineffective trial.

The stabilisation trial of HMS *Colossus* ended in 2005. Three years later, a small area of the stern, which was previously excavated by the Archaeological Diving Unit, was covered with a 3.8 m x 5.5 m Terram mat; the mat was anchored in place using both “green heavy-duty bags” and polypropylene sandbags (Camidge 2009a, p. 182). The Terram mat was placed over a small portion of the site containing a large quantity of UCH that was at greater risk of looting or deterioration if left exposed. At the same time, due to the large numbers of recreational divers accessing the site, it was necessary to ensure the stabilisation methods did not deter from public access and interpretation. Instead, preservation and monitoring stations were placed on site and a description of the management methods was integrated into the interpretive underwater SCUBA diving-guide for educational purposes.

The Terram 4000 mat on the stern of *Colossus* is still considered experimental, as the lifespan of the mat itself is still unknown. Practitioners also expect that within five to ten years the sandbags will begin to deteriorate, and without sufficient accumulation of sediment over the Terram, the security of its position could be impacted (Camidge 2009a); regular monitoring of sediment levels across the site will therefore need to continue. A similar trial began in 2005 and continues at the site of the Swash Channel Wreck near Dorset, UK (Palma et al. 2011; Wessex Archaeology 2010).

Despite the growing body of experimental and practical experience, concerns remain when working with textiles underwater, relating to issues such as the size of the site, the relief of the materials above the sediment, the effect on the marine flora and fauna and the impact on and by visiting divers. In order for a textile to work effectively, it needs to be placed loosely over the exposed UCH with enough extra material to allow a sediment mound to build up underneath the mesh; this also requires enough water movement to enable surrounding particulates in the water column (Pers. Comm. Vicki Richards 2010). If the water is static and the mesh is not able to move, biofouling may occur, and there may not be a significant amount of particles suspended in the water column for sedimentation.

Additionally, if there is a significant height difference between the seafloor and the top of the exposed UCH, sediment from within the water column may not be trapped quickly enough and the netting could rip in dynamic waters. In these conditions, a water dredge can be utilised to help the process of sedimentation in the area (Manders & Lüth 2004), and the application of geotextiles and sandbags placed over cloth can mitigate tearing (Pers. Comm. Vicki Richards 2013). Moreover, there are still a number of questions regarding the long-term use of textiles – the extent of the life of the material remains unknown, and researchers are uncertain about the impact that the degradation of textiles have on the underwater environment and the UCH (Oxley & Gregory 2002). See Table 4 and Table 5 below for additional advantages and limitations associated with polypropylene netting and geotextile applications.

Although not discussed in this section, UNESCO's UCH website (UNESCO 2012c, 'Protection', sub-s 'Preservation') also references protective metal nets, which:

May be used for the physical preservation of archaeological sites that are seriously threatened by vandalism or when waiting to be covered by more serious means of protection. They can take the form of simple iron nets reinforced or kept in the ground by cement blocks. The nets are after a certain period of time completely covered with marine organisms, impeding access to the underlying part.

Table 4 Advantages and limitations of employing polypropylene netting over UCH (reproduced from Manders 2012, Unit 9.5.2).

Advantages	Limitations
<ul style="list-style-type: none"> • Easy to create anoxic environment. • Inexpensive. • Easy to install. • Nature does the work. • Material easy to obtain. • Easy to remove with proper equipment. • Easy to monitor (in and outside the mound). • Becomes part of the environment. 	<ul style="list-style-type: none"> • Works only in specific environments. • Works only on wrecks that don't protrude extensively above the seabed. • Can be easily and quickly damaged after installation. • Organic growth may make it less effective. • Has to be installed in a specific way. • Research on the environment has to be carried out in advance. • Some scouring may occur around the edges.

Table 5 Advantages and limitations of employing geotextiles over UCH (reproduced from Manders 2012, Unit 9.5.7).

Advantages	Limitations
<ul style="list-style-type: none"> • Easy to buy. • Different types available. • Protection against <i>Teredo navalis</i>. • Protection against abrasion. • Some types of textiles can seal off the site, while some can be penetrated by fine sediment 	<ul style="list-style-type: none"> • Expensive. • Requires knowledge on suitable types of geotextiles for different circumstances. • Difficult to install, especially in areas with currents and waves.

Relocating

There are circumstances and environments in which on-site reburial is not a viable or favourable option; this can be due to coastal and industrial development or to an adverse *in situ* environment. Therefore, depending on the evaluated archaeological significance of the site and the conglomerate of scattered materials, relocating the site to a more suitable location may be an acceptable management method. During the early 1980s, shipwrecks located in the Polders region of the Netherlands were moved from their original wrecking location and “reburied offshore past the low tide mark to ensure a more constant water depth” (Curci 2006, p. 22). Although relocating and reburying a site removes the UCH from its literal *in situ* context, the shipwreck itself and associated materials remain underwater in a more suitable environment. As long as the original site is documented, a move to a similar or more stable reburial environment could still fall under the auspices of *in situ* preservation – depending on the universally accepted definition of the term. Unfortunately, to date, relocation is not equated with the *in situ* terminology – as expressed by UNESCO affiliated documents – and therefore may not be supported by either international or domestic legislation. This is also a significant concern considering not all domestic heritage laws protect UCH that has been removed from its original identified location.

The American-built whaler, *Day Dawn*, located in Careening Bay near Fremantle, Western Australia, was located in 1976 when the Naval Engineering Department at Garden Island began dredging the Bay in order to build berthage for a naval support facility (McCarthy 1983). It was noted by archaeologists that portions of the wreck were both exposed and destroyed by the dredger, which prompted an immediate need to mitigate further damage to the vessel. The Western Australian Museum prepared a trench three metres below the

Commonwealth datum for harbour depths in the hopes of successfully moving and reburying the shipwreck (McCarthy 1979). In order to transport the site, sand was dredged from beneath the hull until the entire shipwreck slid down the seafloor into its new location, which occurred without damage to the hull (Sledge, 1979; Williams 1997). In 1991, this same area was to be redeveloped by the Navy, prompting another assessment of the already relocated *Day Dawn*.

Although the initial move and reburial attempt was successful, WAM was concerned with a second move. In 1991 staff from the Museum put together a plan to “excavate, dismantle, permanently mark and treat [the] timbers” prior to reburying *Day Dawn* (Williams 1997, p. 126). This second move was much more substantial, as it was a rescue move that resulted in a relocation of the vessel several hundred metres away (Moran 1997a). Practitioners were careful to assess any damage done to the hull as a result of the second move. According to maritime archaeologist Kristin Williams (1997), it appears that the significant damage was incurred in 1976, and the only visible damage to the vessel was a timber that dislodged from the starboard side and the sternpost area. *Day Dawn* demonstrates that a shipwreck site can be relocated without extensive physical damage, but it comes at a cost to the physical integrity of the site and should be seen “only as a last resort” (Williams 1997, p. 128).

A similar management method was required in 2004, when the Victorian Government in Australia decided to deepen the channels access to Port Melbourne, which triggered a two-year long process of environmental assessments. During this period, in 2005, recreational divers reported an archaeological feature to the managing cultural agency, Heritage Victoria; the site was subsequently listed on the Victorian Heritage Register. It was later determined that the reported cultural site was the former Hovell Pile Light, which was destroyed by a storm in 1938. Unfortunately, the cultural remains were located within an area to be impacted by dredging and propeller jets, and required immediate assessment and protective action (Figure 7).

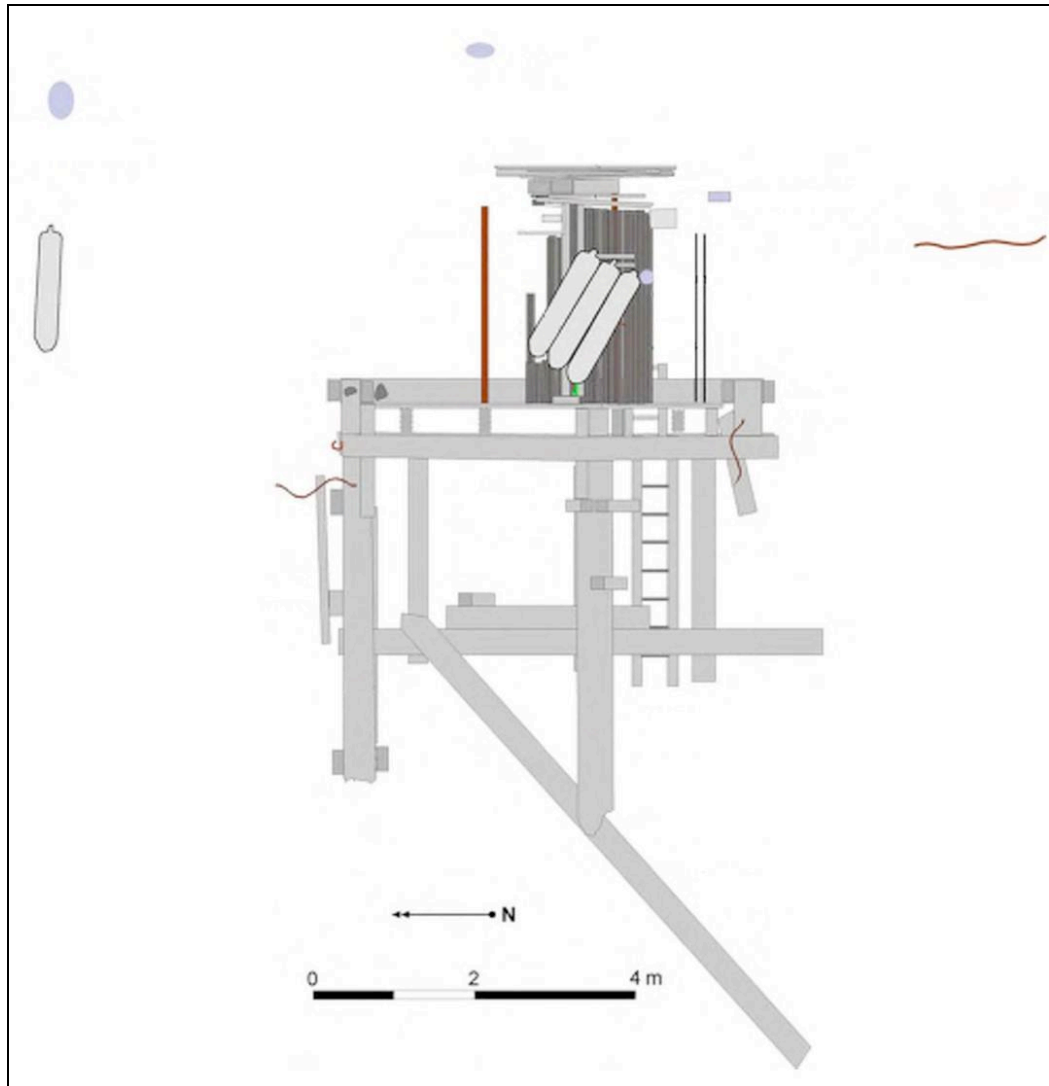


Figure 7 Site plan of the former Hovell Pile Light site excavation (amended from Coroneos & Raupp 2009, p. 28).

The consulting company Cosmos Archaeology Pty. Ltd was hired to assess the site and present management options. One potential mitigation strategy required the cutting of the exposed, upright timbers and additional metal components down to the seabed. This method was ultimately deemed inappropriate, as it was determined that sediment movement due to the harbour works could cause scour and increased exposure over the site as well as potentially dislodging structural components, consequentially becoming a navigational hazard (Coroneos & Raupp 2009). Archaeologists therefore decided to conduct a rescue excavation, “resulting in the complete removal and relocation of the site” (Coroneos & Raupp 2009, p. 8).

The fHPL site was systematically dredged using a diver-operated water dredge and documented *in situ* and before the artefacts, including loose structural remains, were raised onto a barge for *ex situ* documentation. Additionally, Heritage Victoria requested that a selection of artefacts be retained for conservation, storage and public display (Coroneos & Raupp 2009). Once the site was excavated and documented, the remaining artefacts were redeposited “in a discrete area and covered/wrapped in black plastic” (Coroneos & Raupp 2009, p. 12). The reburial location was based on spoil deposition from the harbor dredging activities, thus providing access to enough sediment for sufficient reburial depth. The working relationship between industrial development, government heritage management and private consultants was “a unique event within an Australian context” (Coroneos & Raupp 2009, p. 62).

Physical barriers (fences and sediment encapsulation)

In a dynamic environment, many of the techniques previously discussed in this chapter may not effectively maintain sediment deposition over a submerged site. The placement of physical barriers on, or around, UCH may mitigate the environmental factors impacting them. In 1985, Australian archaeologists attempted to reduce scouring and increase the sediment accretion alongside *William Salthouse* by placing five small iron fences made of reinforcing rods at right angles into the tidal current (Harvey 1996; Staniforth 2006). The intention was that the rods would catch larger material moving within the water column, such as mobile kelp and algae, to subsequently create a more solid barrier and help establish sedimentation. Unfortunately, later the same year, it was evident that although this technique successfully increased sediment levels in some areas, it increased scouring in others (Harvey 1996; Staniforth 2006). The results from this trial suggest that a thorough understanding of water and sediment movement within an area, as well as regular monitoring, is required in order to effectively manage a site *in situ* by use of this type of physical barrier.

Another barrier approach is the utilisation of sediment encapsulation which includes the placing of a cofferdam, usually made of wood, steel sheets or polymers, around a site, filling it with sediment and covering the unit with a textile sheet and sandbags to help develop an anaerobic environment (Richards et al. 2007). The method is not commonly employed, however, due to the often

remote locations and transport/access issues associated with archaeological sites and the high cost of cofferdam materials. Furthermore, steel and wooden cofferdams are not successful as long-term stabilisation methods because the materials themselves degrade within a marine environment. An environmentally inert polymer sediment encapsulation system would not degrade at the same rate as the other traditional cofferdam materials and could therefore be applied as a long-term stabilisation tool.

In 2002, staff from WAM began assessing whether chemically and environmentally inert plastic ‘road crash barriers’ could be applied in a similar manner to a cofferdam around *James Matthews* to mitigate the increasing annual loss of sediment (Godfrey et al. 2004; Richards 2012) (Figure 8). This is an innovative management approach that, if applied to the site, would utilise approximately 80 interlocking plastic barriers in a circular arrangement. The space inside the barrier-circle would be filled with sediment and then covered with a marine-grade geotextile and geotextile sandbags “to minimise sediment loss during periods of storm wave conditions” (Winton & Richards 2005, p. 7). Prior to investing in such a method, it was necessary to trial the barrier units in a similar environment to determine whether or not the application would work as theorised.



Figure 8 Crash-barrier trial square *ex situ*, prior to placement adjacent to *James Matthews*. Courtesy of WAM.

Staff from WAM proposed to trial a test square in an environment even more dynamic than the *James Matthews* site, at the site of *Omeo* located 5 km north of *James Matthews*. The aim of the preliminary trial was to verify if the test square could withstand heavy waves whilst maintaining sediment coverage over the site (Nyström Godfrey et al. 2005). After two years, and with minor modifications, the crash barrier experimental unit proved effective (Winton & Richards 2005). In 2005, a second trial was established adjacent to *James Matthews* to investigate the effect of the chemically inert polyethylene barrier units on sedimentation in the area and the impact on the surrounding seabed (Richards et al. 2007) (Figure 9). WAM practitioners are continuing the investigation adjacent to *James Matthews* in order to determine the long-term impact on the environment and to gain a better awareness of the durability of the crash barriers. It is important to note that this trial was not instigated until an extensive study of the local environment and the sedimentary processes affecting the *James Matthews* site were conducted.



Figure 9 Crash-barrier trial square placed adjacent to *James Matthews* *in situ*. Courtesy of WAM.

In a different environment, at a depth of 38 – 40 m, a second century cargo shipwreck resting in the small alpine lake of Viverone, Italy had modular galvanized sheet iron panels covered in fibreglass placed around it in an effort to stabilise and protect the site. Each panel was 2 m², with reinforced steel rods welded on the plates to help strengthen the construction. The panels were connected by 12 mm galvanised chain links, with the final construction in the shape of a tortoise shell (Davidde 2002). The plates were then covered with a gel coating, the same colour as the sediment on the lakebed. Each panel can be individually removed for controlled excavation in the future, but the encasing protects the site from physical damage, whether by natural or anthropogenic causes. While this example demonstrates an innovative method for protecting a large, protruding site, like the crash-barrier units being evaluated in Western Australia, it is expensive and has the potential to greatly impact the site environment if prior assessments and monitoring are not included in the management plan; see Table 6 for a list of advantages and limitations associated with employment of the crash barrier method.

Table 6 Advantages and limitations of employing road barriers around UCH (reproduced from Manders 2012, Unit 9.5.5).

Advantages	Limitations
<ul style="list-style-type: none"> • Strong structure. • Possible to get good anaerobic/anoxic environment. • Easy to overcome height differences. 	<ul style="list-style-type: none"> • Expensive. • Not easy to handle. • Not easy to install. • With the use of sandbags, it is easy to create an anaerobic environment. • Big threat of toe scouring.

Toxins

The use of toxins to protect organic UCH is aimed at reducing or preventing the effect of bio-organism colonisation and decomposition. Although this method is no longer utilised by practitioners, it is important to recognise previous *in situ* preservation techniques in order to understand the evolution of the field. In 1978, spearfisherman off the coast of Western Australia located the remains of the American-built wooden vessel *Rapid*. Shortly thereafter the site was reported to WAM and practitioners began discussing how to best manage the

shipwreck. It was decided, after several seasons of excavation, to cover the projecting frames, keelson and other wooden structural features with tri-butyl-tin oxide-impregnated Hessian to minimise degradation from bio-fouling organisms (Oxley 1998a). The site's ballast was placed over the Hessian and then covered with the original dredge spoil (Pers. Comm. Vicki Richards 2013). Twenty-years later, *Rapid* was revisited and practitioners noted that the site was essentially stable, suggesting bio-fouling may have been reduced (Oxley 1998a). Due to the fact that the site was covered with backfill in addition to TBTO, it is difficult for practitioners to determine whether the prevention of expected timber degradation was due to the toxin or the reburial. This method of using chemically impregnated barrier systems for *in situ* preservation of UCH material is prohibited in most countries due to its potentially hazardous environmental nature – as such, it is a theoretically useful but essentially obsolete technique.

Excavation

Although the discovery of a shipwreck does not automatically justify excavation, under correct circumstances it is an acceptable and even desirable management method. The shipwrecks *Vasa* in Sweden, *Mary Rose* in England, *H.L. Hunley* in the US, *Batavia* in Australia and Uluburun in Turkey are all examples of archaeological sites of significance where the appropriate resources were available to properly excavate, conserve, store and display cultural materials *ex situ*. While many heritage practitioners argue that the location of a shipwreck “should not necessarily lead to its excavation...[as] most of it should be left intact for the improved methodologies and research frameworks of future generations,” it is noted that excavation under the right circumstances is a viable and acceptable option (Hutchinson 1996, p. 289). From this perspective, given that disturbance surveys and excavation do not always require *ex situ* management, the reburial of material after examination is considered best practice.

Organic reburial synopsis

As discussed, the reburial of organic UCH can significantly decrease the rate of degradation by minimising exposure to human interference and physical, chemical and biological factors. It is an *in situ* preservation technique that can be utilised to stabilise a dynamic site from a non-disturbance perspective or after an

extensive excavation. The results of experimental projects such as MoSS and work conducted on *James Matthews* suggest that organic UCH should be buried at a depth of approximately 1 m by any number of methods listed above, with the exception of toxins, depending on site-specific impacting factors. In order to achieve a successful reburial, it is important to ensure that the sediment collected from within the water column continues to adequately cover the site, maintaining an anaerobic environment. Following the employment of any *in situ* preservation technique, regular monitoring should continue to ensure stabilisation of the UCH.

Metal approach

The metallic heritage approach, whereby preventive conservation prepares for excavation (extraction of wrecks and artefacts) or long-term conservation, including, for instance, cathodic protection (UNESCO 2012b, ‘Conservation in Management’, sub-s ‘Conservation Programme’).

Due to the chemical composition of iron shipwrecks and other ferrous and non-ferrous UCH, metallic cultural materials, in comparison to organic UCH, will interact differently with the physical, chemical and biological factors present within a site-specific environment. These differing reactions can be a result of the shipwreck or specific object size and/or the proximity to other metal heritage materials on site. Some larger metallic UCH significantly protrude above the sediment, thus reburial may not be a logistical option and alternative *in situ* management methods should be applied.

Exposed metal UCH is prone to corroding. Corrosion refers to the electrochemical oxidation of a metal material when exposed to an oxidising agent – this process involves the flow of a current, or electrons, between an anode and a cathode “with the anodic and cathodic reactions occurring at spatially separate points” (Turgoose 1985, p. 14). Essentially, a metallic object corrodes by losing electrons. One method of reducing or preventing the corrosion of metal UCH *in situ* is to alter this flow of electrons – by introducing a new metal of different composition in physical contact with the heritage material, the roles of anode and cathode can be altered, and the introduced metal may undergo corrosion in favour of the archaeological metal. In this technique, the introduced metal is known as a sacrificial anode.

Sacrificial anodes need to consist of a more electrochemically active metal that will more readily lose electrons than the heritage material. To protect ferrous,

or iron-containing alloys, magnesium, aluminium or zinc, may be used. These could apply to the protection of anchors, cannon, engine blocks and hull remains, among other artefacts. The anodes are chosen because they will corrode in preference to iron, “effectively protecting the ferrous alloys from rapid decay” (Richards 2011, p. 778). The employment of a sacrificial anode not only decreases corrosion rates *in situ*, but also helps reduce the time required for *ex situ* conservation, should appropriate funding and resources become available in the future (Gregory 1999; Heldtberg et al. 2004). Unfortunately, this method cannot also protect the materials from dynamic water or sediment movement.

The “Conservation” section of the UNESCO (2012b) Manual refers to this technique as an aspect of “Preventative Conservation,” which includes:

All indirect measures and actions aimed at avoiding and minimizing future deterioration or loss of materials or artefacts. It is carried out *in situ* within the context and surroundings of an object or a group of objects, or in the excavation laboratory. It should be undertaken regardless of the age and condition of the artefacts concerned.

In relation to *in situ* preservation, *in situ* conservation refers to the physical mitigation of actively degrading materials, which therefore aids in the preservation of UCH. With regard to the use of sacrificial anodes, regular monitoring should be included in the management plan as anodes are consumed and require replacement.

Sacrificial anodes were initially trialled as a pre-retrieval method before application as a long-term *in situ* management tool. For example, at the wrecksite of HMS *Sirius* off Norfolk Island in Queensland, Australia, an aluminium-magnesium engine block was utilised as a sacrificial anode to mitigate corrosion on an anchor, while a second anode was connected to a carronade to help stabilise the objects prior to their recovery (Heldtberg et al. 2004; MacLeod 1992). In this capacity, the aim of the introduced anodes was to slow corrosion rates while appropriate treatment facilities were erected to conserve the UCH (Pers. Comm. Vicki Richards 2013). After three and a half years of proactive *in situ* conservation, the objects were raised and were found to be in better condition than originally expected (Oxley 1998a).

In 2000, staff from WAM chose *James Matthews* as an experimental site “to trial the minimal intervention site management strategies of the ICOMOS (1996) Charter” (Heldtberg et al. 2004, p. 75). A pre-disturbance electrochemical

survey was conducted on the major iron components of the site, including deck knees and the windlass. Four zinc anodes were placed on site, one of which was fabricated to connect to three different iron objects in order to test the impact of multiple connections on a single zinc anode. The trial lasted from September 2000 until January 2002, and demonstrated that the zinc sacrificial anodes reduced the rate of corrosion of metal artefacts in the site, and were an effective method for *in situ* conservation.

The use of sacrificial anodes as an *in situ* management method for site stabilisation can be of benefit to public access of UCH and education and outreach programs. In 1983, conservators from WAM applied anodes to the stern of the *Xantho* shipwreck off the Western Australian coast near Port Gregory. This provided recreational divers access to exposed portions of the shipwreck under active on-site conservation (McCarthy 2002, 2000, 1987). Similarly, in the US, the Florida Bureau of Archaeological Research attached a sacrificial anode on a contemporary-period anchor and placed it on the wrecksite of *San Pedro* in the Florida Keys for two primary reasons – to help stabilise the object underwater and to provide recreational divers with access to an eighteenth-century Spanish galleon anchor in context with an archaeological site (Figure 10).

Sacrificial anodes are not the only *in situ* method of protection for ferrous and non-ferrous UCH. During the late 1990s, nearly 10,000 artefacts were obtained during two excavations in Marstrand Harbour in Sweden: one at the site of *Fredericus* and the other in an area along the quay with some cultural remains dating to the seventeenth century. Practitioners faced with managing these objects decided to rebury the materials in an area underwater within the harbour devoid of cultural material (Godfrey et al. 2004). This initiated the establishment of the Reburial and Analysis of Archaeological Remains project, which incorporates practitioners from Sweden, Norway, Denmark and Australia in a 50-year-long, multi-faceted research project investigating long-term effects of reburial on wood, hard and soft animal products, fibres, silicates, ceramics, metals and modern packaging and labelling materials (Peacock et al. 2008). The metals-corrosion sub-project of RAAR placed sacrificial test-metals, including both ferrous and copper alloys, on the surface of the seabed, buried just beneath the sediment and at 50 cm below the surface of the seabed in order to determine whether reburial is an effective *in situ* preservation option for metals over a long

period of time. Each set of different alloys (ferrous and copper alloys) were buried separately – approximately 2 m apart – in order to minimise proximity corrosion (Pers. Comm. Vicki Richards 2013).

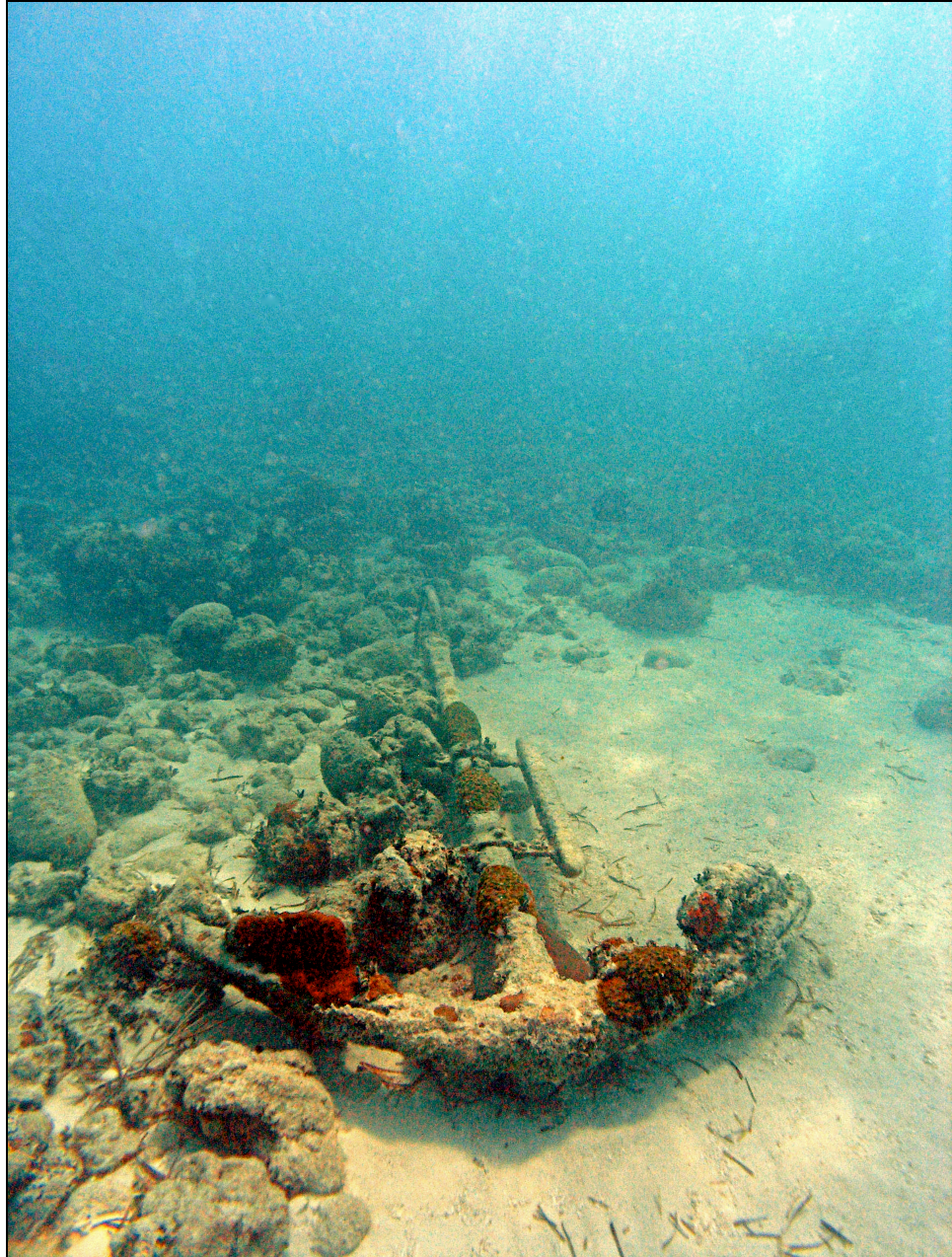


Figure 10 Contemporary anchor placed on *San Pedro* with attached sacrificial anode. Courtesy of Florida Bureau of Archaeological Research.

Early results suggest that when “in very poorly sorted, mobile clay sediments that contain high levels of moisture, organics and anaerobic bacteria deep into the sediment column,” metals, especially ferrous alloys, require burial depths greater than 65 cm (Richards & MacLeod 2006, p. 3). The study also

suggests that when metals are reburied, it is important to ensure they are buried deep enough where there is minimal to no chance of exposure to aerobic conditions through physical and biological factors. This way concretion, which only occurs on ferrous alloys, can continue to develop after reburial but the rate of corrosion will decrease and begin to stabilise after two years (Randell 1998; Richards & MacLeod 2006).

Practitioners involved in RAAR agree that it is still too early in the reburial project to make definitive statements regarding the long-term stability of the metal UCH when reburied as a method of *in situ* preservation. While the sacrificial reburial samples are not the same as historic metals already impacted by environmental factors over time, the data gained from these trials allows researchers to develop models and guidelines for the development of the practice. A similar three-year ferrous alloy corrosion reburial experiment is currently being trialled at the site of *Clarence* (Figure 11).

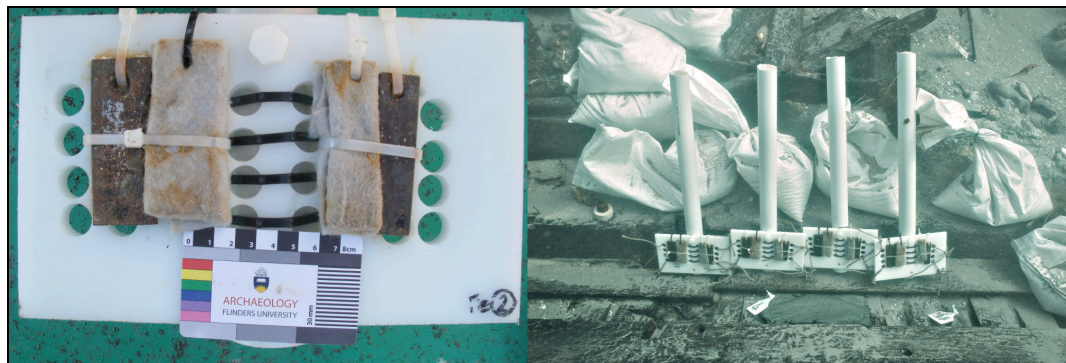


Figure 11 Experimental reburial metals placed on *Clarence* prior to reburial. Courtesy of AHSP.

Metal Synopsis

The approach to *in situ* preservation of metal heritage material involves connecting more corrosive metals, such as aluminium alloys and zinc alloys, to ferrous objects in order to assist in the stabilisation of the UCH. The use of sacrificial anodes has been shown to be an affordable and effective management method, which can incorporate recycled scrap-metals or be purpose-built, and can be applied for both short-term stabilisation prior to *ex situ* conservation or long-term stabilisation *in situ*. When applying this method, it is necessary to assess the physical, biological and chemical environmental factors impacting site degradation prior to the application of the anode. More specifically, the size of the

object requiring stabilisation, the metal composition of the heritage material and its proximity to other cultural objects will also impact the type and size of the anode alloy needed, along with the most efficacious location for placement. After installation on site, sacrificial anodes require follow-up monitoring and periodic replacement, as they are consumed through the cathodic (or redox) protection reaction. In situations where the removal of metal objects has been included in the management plan, pre-treatment through *in situ* conservation (i.e. employment of a sacrificial anode) can not only reduce corrosion underwater but may decrease the treatment time needed once recovered.

Underwater repositories

Cultural heritage managers have a duty of care to preserve and protect UCH, while recognising that the limitations of available resources will influence decision making in relation to management schemes. It is well noted that, in some instances, active management techniques (i.e. excavation, *ex situ* conservation or pro-active *in situ* preservation) may be considered too costly and time consuming to endorse as the most efficacious option (Ortmann 2009; Ortmann et al. 2010). However, the implications and associations for *ex situ* management should be compared with *in situ* preservation options when considering the best approach to UCH management.

One line of thought suggests that it can be more efficient to remove UCH materials from underwater environments in circumstances where *in situ* preservation techniques suited to the site-specific location will be too resource-intensive to properly apply. However, without the appropriate resources available to properly conserve, store and monitor the stability of extracted artefacts, *ex situ* management of UCH can be regarded as unethical (Grenier 2007; Manders 2009; Panter 2007). Therefore, should *ex-situ* conservation be unavailable at the time, if there is a high risk of looting or the on-site environment does not demonstrate favourable *in situ* preservation conditions, alternative methods for preservation should be considered, including the use of an underwater repository for UCH storage, cataloguing and reburial. This method is also referred to as *in situ* storage, which involves the relocation of site materials, including disassembled hull structure, disarticulated hull structure and artefacts in order to:

Preserve the physical, historical and aesthetic integrity of artefacts and features excavated from a site through the creation of a separate space where items are stored within the confines of an environment similar or deemed to be more beneficial to that from which they were removed (Ortmann 2009, p. 5).

RAAR practitioners identify that *in situ* storage may be too broad a term and instead associate underwater repositories with either ‘reburial *in situ*’ or ‘reburial *ex situ*’. The former is defined as “artefacts that are recovered, recorded, and reburied on the same site from which they originated,” and the latter as “artefacts that are recovered, recorded, and reburied on a specially created site outside the original site; that is, artificially created reburial depots” (Nyström Godfrey et al. 2012, p. 361). In general, underwater repositories are a protective measure that mitigates casual access to a site, as well as ensures “site deterioration is reduced to a minimum while still enabling access for future archaeological research” (Manders 2009, p. 32).

One of the most extensive underwater repository projects occurred at the former site of a Basque whaling station in Red Bay, on the southern coast of Labrador, Canada. Over the course of six field seasons between 1980 and 1985, Parks Canada undertook the task of recording a sixteenth-century Basque whaling vessel in its entirety. However, due to the overall costs of raising, conserving, maintaining and displaying such a large vessel *ex situ*, managers decided to record as much of the vessel as possible without raising the remains (Grenier 2007; Waddell 2007). Prior to 1985, 3,000 timbers were raised, recorded, and then placed in a temporary underwater storage area until the permanent reburial began (Curci 2006). By the end of the final excavation season, archaeologists had completely dismantled the vessel, brought all of the timbers to the surface to be thoroughly recorded, and then systematically reburied each timber within the Bay (Grenier 2007). Parks staff designed a reburial environment that was to “duplicate the pre-excavation conditions of the timbers in terms of light, temperature, and oxygen levels” (Waddell 2007, p. I–150). This kind of artefact reburial, using a burial environment as a repository, was revolutionary at the time and introduced the use of reburial repositories as a cost-effective means of long-term storage (Stevens 2007).

Another example of the use of underwater repositories can be found within Croatia’s jurisdiction in the Adriatic Sea, where large iron cages were placed over fifteen underwater sites to house waterlogged artefacts (Berger 2011;

UNESCO 2012b; Zmaić 2009). These facilities were originally designed in the 1990s using construction netting attached to concrete blocks, but it was quickly determined that durability was compromised and the applied netting was inefficient. Shortly thereafter, galvanised iron cages were installed above the sites to provide divers viewing-access to the UCH while not permitting damage through direct physical contact or looting (Figure 12). Conscious of the fact that the iron in the constructed cages would react when submerged in seawater, heritage managers utilised specialised paints and zinc anodes to minimise the degradation of the cage and its potential impact on the UCH (Zmaić 2009). The UNESCO (2012b) Manual includes cage protection under the description of “Preservation,” stating that:

Cages, covering vulnerable underwater sites, have proven to be effective not only as physical protection but also as a dissuasive element against pillage. The efficiency and duration of such protection depends heavily on the materials used and their fixation to the ground. They can be placed over a first sand layer. If maintenance and cleaning is ensured, divers can visit such sites looking through the cage or entering it with permission. This allows for cooperation with local diving centres which can obtain the right to visit within the framework of their diving tours in exchange for surveillance of the sites or a certain fee serving its protection.

Reburial repositories have also been employed in Egypt, Denmark and Australia (Berger 2011; Gregory 2006; Pers. Comm. Vicki Richards 2012). In Egypt, practitioners from the European Institute of Underwater Archaeology working in Alexandria and the Bay of Aboukir found the remains of the ancient sunken cities of Canopus and Heracleion. Due to an over-abundance of cultural material in the Egyptian museums it was decided to leave aspects of the archaeological remains *in situ*, while moving the smaller artefacts to an underwater repository (Berger 2011). Archaeologists mapped many of the movable objects *in situ* using a GPS, and then extracted, catalogued, cleaned, identified, measured, photographed, documented and registered the artefacts intended for reburial. These items were then packaged in plastic netting and secured inside plastic boxes filled with sand before being placed in the underwater repository. Once each repository area was packed with boxes it was backfilled with sediment and covered, and then a new area was established and the location was recorded by GPS. These repositories were used to rebury ceramic, metal and stone artefacts; the organic objects were generally reburied at

the archaeological site with a significant amount of sediment over the organic UCH (Berger 2011).

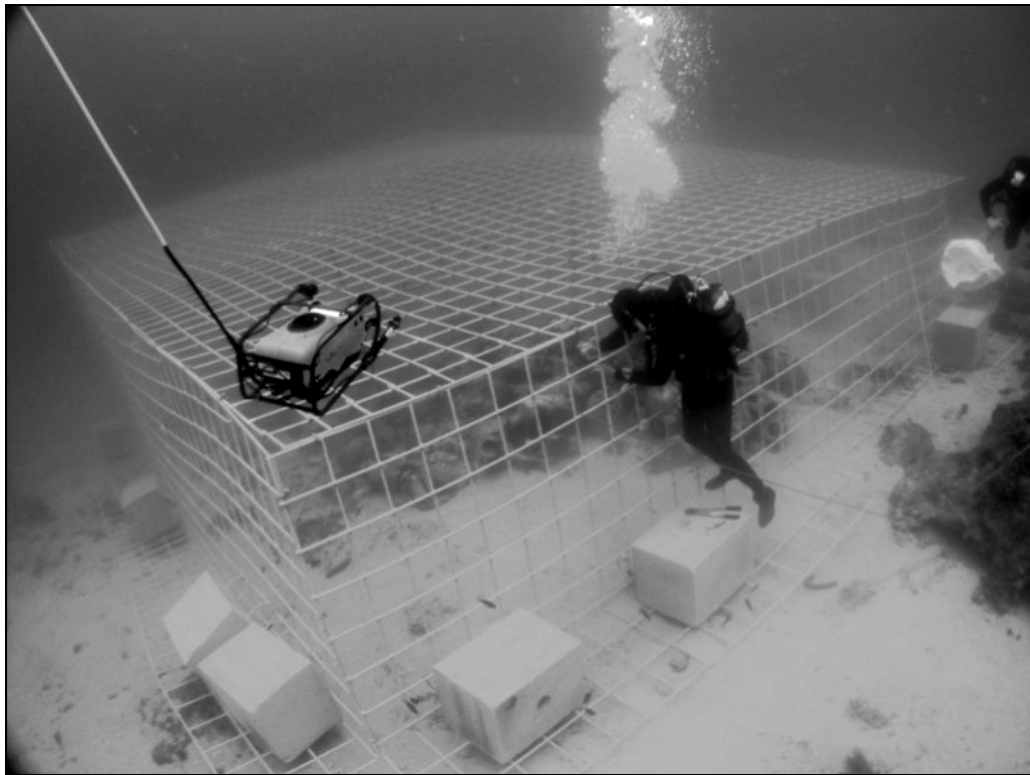


Figure 12 © I. Radic-Rossi. UCH site protection by a metal cage in Croatia (Courtesy of UNESCO 2012c).

In 2001, practitioners involved with the RAAR project in Sweden placed artefacts removed during the 1990s excavations in Marstrand Harbour in one of two reburial trenches – one for metal artefacts and one for organics and silicates; 10 – 15% of the excavated artefacts were left *ex situ* for conservation and display (Bergstrand et al. 2005; Richards et al. 2012). After the UCH were placed in the appropriate units, the cultural materials were covered with at least 50 cm of clay from the harbour and are subsequently monitored (Bergstrand & Nyström Godfrey 2006). Additional in-field experiments were conducted using modern materials in the un-filled portions of the repository trenches. Here, organics and non-organics were placed at different burial depths within the respective units in order to obtain a better understanding of the environmental factors impacting degradation. Over the course of the 50-year program these modern samples will be removed from the units and analysed in order to record degradation rates.

The RAAR project not only assesses the impact of reburial depths and conditions of materials in relationship to one another, but also experiments with reburial packing materials such as geotextiles and nylon-mesh, containers for reburial storage and methods of labelling, including tag type and marking utensil. These materials are analysed to see how environmental factors impact their deterioration, and whether this, in turn, interacts with the degradation of stored UCH (Bergstrand et al. 2005; Richards et al. 2012). The containers and packing products have been placed in two locations: on the surface of the seabed and buried 50 cm below the surface of the sediment. The results thus far are inconclusive and further investigation is required (Nyström Godfrey et al. 2007).

Two additional experimental underwater repository projects began in 2012, one at the site of HMS *Colossus*, and the other in association with *Clarence*. English Heritage commissioned a partial excavation of *Colossus*, during which the artefacts recovered were to be reburied on-site in one of two underwater repositories. The archaeological materials located during excavation were extensively analysed by Ian Panter from York Archaeological Trust and then were reburied in the designated storage-depots with the intent of re-examining the materials in 10 years, and again in 25 years (Pers. Comm. Kevin Camidge 2012).

At the site of *Clarence*, practitioners based around Australia and overseas began the Australian Historic Shipwreck Preservation Project (AHSPP), to focus on establishing protocols for the rapid excavation, recording, recovery and reburial of cultural materials from an underwater archaeological site. *Clarence* was partially excavated and any loose artefacts were removed *ex situ* for cataloguing and preparation for reburial. Organic materials were wrapped in geotextiles and shade cloth and placed in a pre-dredged unit approximately 10 m south of the stern. Due to the nature of the sediment in the area, a prefabricated plastic water tank was dredged into the seabed to ensure a reburial depth of 1 m below the surface of the sediment. The tank prohibited sediment from sliding into and collapsing the excavated unit, therefore allowing for the continuous deposition of artefacts throughout the project. By placing the tank in the seabed, practitioners are able to easily store, relocate and retrieve the artefacts as required in the future (Figure 13). Because the excavation accumulated very few metal artefacts, these materials were not reburied in a separate underwater storage unit. Instead, the metal objects were packaged with similar metal-types in the same

method as the organic UCH, placed within the hull of *Clarence* and reburied beneath the backfill of the site itself. Modern sacrificial samples, both wood and metal, were placed in the reburial areas for examination over a three-year period; these samples are being utilised in a similar way to the modern experimental samples placed within the RAAR reburial trenches in Sweden.

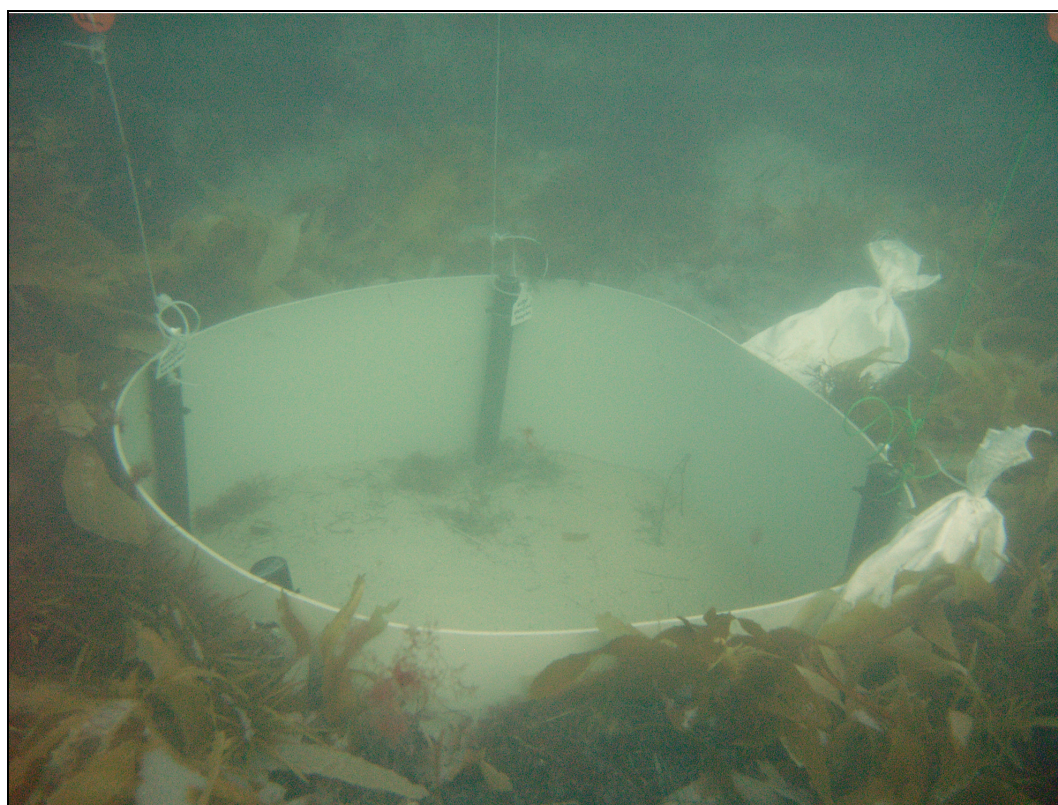


Figure 13 *In situ* storage repository placed adjacent to stern of *Clarence*. Courtesy of AHSPP.

Unfortunately, the UNESCO *Manual for Activities Directed at Underwater Cultural Heritage* (2012b, ‘Working methods and techniques’, sub-s ‘Techniques for in situ preservation’) misdirects practitioners and restricts the potential for *in situ* storage by stating that underwater depots should be in proximity to the original site for the purposes of “stock[ing] timbers while avoiding their” removal. As the projects discussed in this subsection have demonstrated, underwater repositories can be employed beyond timber storage to include other organic UCH and ferrous and non-ferrous objects. Moreover, independent storage facilities, comprising of artefacts from a number of different archaeological sites, can be a cost-effective alternative to *ex situ* storage. Should this method be employed, practitioners must thoroughly catalogue and record all

artefacts prior to removal and reburial and ensure that each individual item can be located and extracted for further research.

Storage synopsis

As the global trend encourages *in situ* preservation as the first approach to UCH management and research on materials degradation and *in situ* techniques continues, practitioners should look to some of the more successful reburial projects (e.g. Red Bay, Croatia, Egypt and RAAR) as models for application at other sites. Since the start of the RAAR reburial repository experiment, analysis of the environmental factors in association with organic materials has thus far produced evidence that the ideal reburial depth for organics is at least 80 cm to 1 m below the surface of the sediment-water interface. For metal UCH, a minimum reburial depth of 65 cm is required to adequately reduce the corrosion rates of ferrous alloys and to enable a slow rate of deterioration within an anaerobic environment (Björdal & Nilsson 2006; Gregory 2006; Richards & MacLeod 2006; Pers. Comm. Vicki Richards 2012). Results from the project also suggest that glass and low-fired ceramics should not be reburied because the nature of their microstructure makes them highly reactive in the underwater environment (Bergstrand & Nyström Godfrey 2006; Bohm et al. 2007; Pers. Comm. Vicki Richards 2013).

Importantly, as demonstrated by the projects discussed in this subsection, underwater storage facilities provide a secondary option to leaving archaeological sites vulnerable, *in place*, when *ex situ* management is not a viable option. This approach additionally enables excavation without requiring the resources for *ex situ* conservation and storage. If more management agencies utilise and support underwater repositories, however, legislation will need to be amended to include specific management policies, jurisdictional guidelines and protection for UCH storage facilities.

Built heritage approach

The built heritage approach, which first engages in preventive conservation and restoration work, but ultimately focuses on the creation of underwater archaeological parks (UNESCO 2012b, 'Conservation in Management', sub-s 'Conservation Programme').

As practitioners move towards the ‘first option’ as the primary management practice, “increasing numbers of archaeologists are developing the *in situ* approach, applying methods of preventative conservation or *in situ* restoration with a view to creating underwater archaeological parks and museums” (Memet 2009, p. 46). This statement is congruent with the 2012 UNESCO Manual’s abovementioned description for ‘built heritage’. It is questionable, however, whether ‘built heritage’ should be considered an independent classification of *in situ* preservation, as described by Memet (2009), or rather be presented as an interpretation of the application of the ‘organic object approach’ or ‘metal wreck approach’ in conjunction with education and outreach components.

More importantly, although UCH sites demonstrate “significant economic, recreation, tourist, social and education potential as well as scientific and archaeological” potential (Oxley & Gregory 2002, p. 723), the financial aspects affiliated with cultural heritage should not dictate applied management methods. Manders (2009) argues that ‘built heritage’ is potentially a multi-million dollar industry in which heritage, diving, biological and educational tourism can work together to promote and profit from the protection of heritage sites. These industries require access to interpreted sites but are not necessarily aware of or immediately concerned with the long-term impact that their tourism has on the overall stability and preservation of the UCH.

In practice, ‘built heritage’ as an interpretive management method, strengthens community ties with the past “while enhancing recreation and tourism in the present” (Scott-Ireton 2006, p. 7). The application of this technique, however, cannot be sustained without additional assessments of the stability of the cultural materials with respect to environmental factors and anthropogenic interference. In general, a ‘do nothing’ approach to ‘built heritage’ management may not only fail to actively protect UCH, but may indeed contribute to degradation. Instead, site management should integrate the ‘organic’ and ‘metal’ materials approaches and underwater repositories with tools such as interpretive signs (underwater and/or terrestrially), brochures, underwater guides and online interactive sites to provide overall sustainable protection of UCH.

To highlight this idea, the Underwater Archaeological Trail of Punta Gacazzi off the Sicilian coast utilises rope to direct the diver from one

archaeological site to the next, in conjunction with a series of small informational plaques at each site (Alves 2006; Davidde 2002). These trails include artefacts such as anchors, amphora and pottery, with special panels describing the function, date and provenance of each object. Loose materials were removed or reburied prior to the opening of the trail, and only larger materials, too difficult to move without a large operation, remain exposed on the site. These criteria were established in order to ensure that public access did not deter site formation processes or impact site integrity, but still provided visitors with an educational and memorable diving experience (Davidde 2002).

Similarly, after geotextiles were placed over the excavated stern area of HMS *Colossus* in 2008, public interest in the site prompted the establishment of a site-specific dive trail. Researchers installed nine observation stations around *Colossus*, consisting of seasonally attached floats to concrete sinkers in order to provide visitors a directed tour (Figure 14). A guide booklet for use underwater was also produced, containing information on the history of the site, explaining some of the *in situ* preservation techniques employed, as well as describing some of the exposed remains at the observation stations (Camidge 2009b). It is important to note that prior to the application of the interpreted ‘built heritage approach’, *in situ* preservation methods were trialled and applied on site in order to stabilise the UCH prior to the site being promoted for dive tourism. The various *in situ* techniques employed, however, were not dependent on the incorporation of this ‘built heritage approach’ - rather, the ‘built heritage’ aspects stemmed from *in situ* management, affording an opportunity to engage and educate the public.

Although ‘built heritage’ is important for continued community support and the furthering of education and outreach programs, as an independent approach, it should not be considered an *in situ* preservation technique. Instead, a site should be stabilised by one or more of the many *in situ* methods described in this chapter prior to encouraging visitation. Once the site has been prepared for public access (i.e. loose UCH is secured and unstable features are protected) heritage managers can administer a ‘built heritage approach’. This includes the development of an underwater preserve system, such as the Archaeological Preserve System in Florida (Figure 15) (Scott-Ireton 2006), or heritage trails with both underwater and terrestrial components such as those in Australia, Saipan, South Africa and the Cayman Islands (Gribble 2006; Leshikar-Denton 2006;

McKinnon 2011). Additional education and outreach approaches include underwater parks, such as the Caesarea Underwater Park, National Oceanic Atmospheric Administration (NOAA) National Marine Sanctuaries, California's Emerald Bay Underwater Park, and the Alexandria Lighthouse. Moreover, online interactive resources (e.g. Museums in the Sea, NOAA National Marine Sanctuaries, French Polynesian Groupe de Recherche en Archéologie Navale, Museum of Underwater Archaeology) can further enhance the heritage experience.

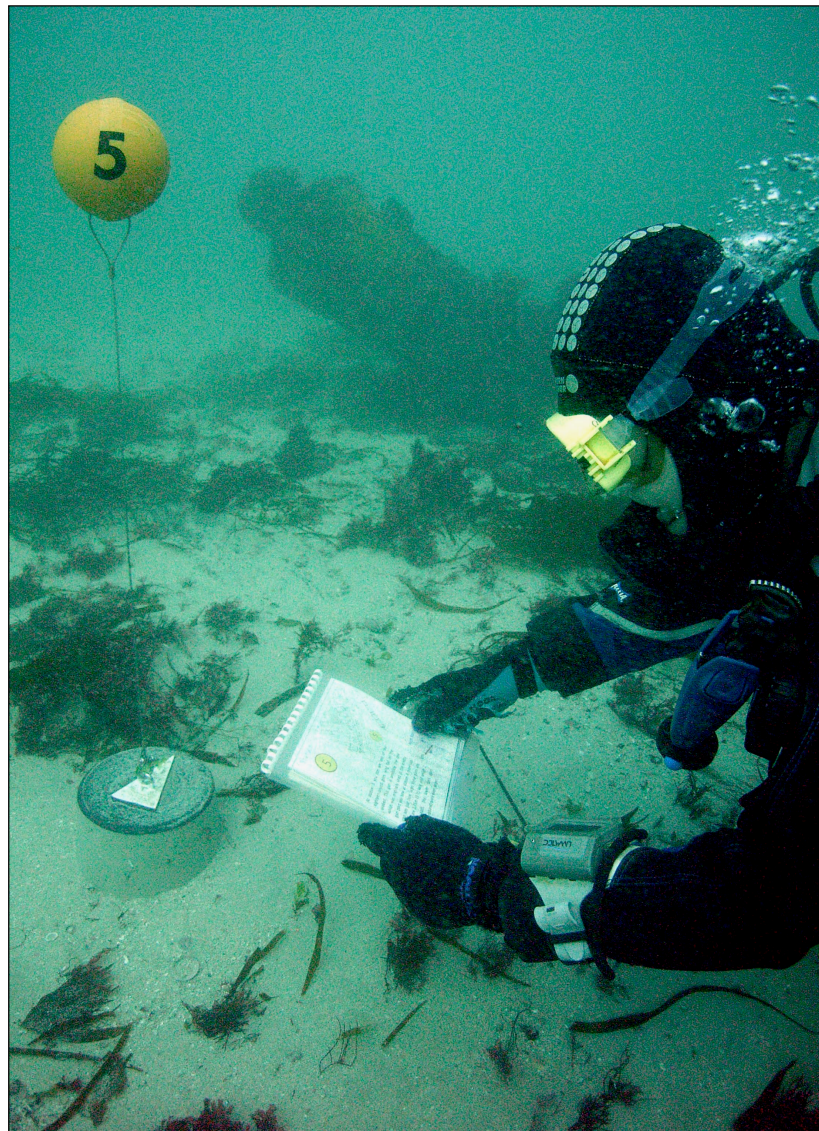


Figure 14 Observation buoys from HMS *Colossus* dive trail. Courtesy of K. Camidge.

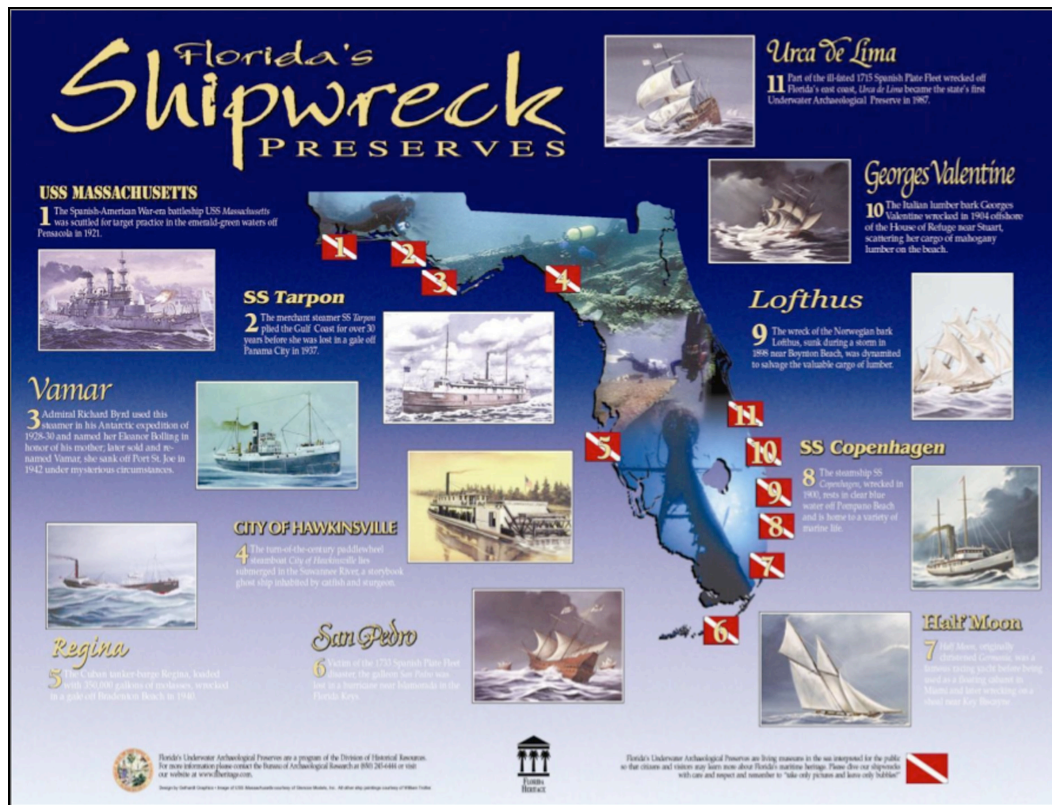


Figure 15 Florida Shipwreck Preserves poster is available in both electronic and hard copy. Courtesy of Florida Bureau of Archaeological Research.

Conclusion

Practitioners must consider the range of threats impacting heritage stability and safety, and mitigate these within the established confines of domestic legislation and international guidelines. As the cost of depth sounders, side scan sonars, underwater metal detectors and magnetometers decreases, members of the public are participating more in the recreational hunt for shipwrecks. The increasing prevalence of these pieces of equipment has resulted in an increasing number of sites being located and reported each year by sport divers, treasure hunters and researchers. The increase in UCH finds coincides with a period of resource constraint in terms of research capacity, funding and personnel, which makes it increasingly difficult for heritage managers to actively protect UCH within their jurisdiction. Moreover, even though it has now become more affordable to locate shipwrecks, the excavation and conservation processes are expensive, which impacts management decisions once a site is located. With these limitations in mind, there is a need to assess and actively manage UCH sites

according to a universally accepted best practice, which includes a range of management options for heritage practitioners.

The consensus from practitioners involved in UCH reburial studies suggests that reburial, by any method compatible with the site environment, should aim to maintain sediment coverage of approximately 1 m above the archaeological materials for the most effective *in situ* preservation, and that ongoing site monitoring should occur. For large ferrous objects protruding out of the sediment, the installation and regular maintenance and replacement of sacrificial anodes should be incorporated into the management plan. Overall, the idea that *in situ* preservation of UCH can be regarded as a passive, ‘hands-off’ approach, without any form of follow-up management, is incorrect; active preservation measures should be applied in an *in situ* approach to encourage long-term stability of UCH.

Some practitioners interpret proactive *in situ* preservation methods to be too costly, too ineffective, or inefficient due a lack of understanding regarding site-specific environmental conditions. Indeed, while some methods discussed in this chapter can be expensive (i.e. professionally designed artificial seagrass matting systems, sediment encapsulation), other techniques such as backfilling, sandbagging and the application of geotextiles are proven cost-effective methods that can be applied in various environments to provide long-term preservation of UCH materials.

The cost of any *in situ* preservation technique must also be considered against that of *ex situ* management, including retrieval, storage, and display, along with outcomes in terms of artefact stability. Once disturbed and exposed to various physical, biological and chemical forces, UCH will ultimately degrade. Actively protecting heritage materials from these forces *in situ*, through various methods of preservation and site alteration, is necessary to ensure long-term survival. Understanding the full profile of forces impacting a specific site helps to determine the most cost-effective and efficacious approach to promoting site stability. For UCH material that is located in a stable environment, naturally buried and protected from both natural and human threats, a suitable management scheme could include leaving the material undisturbed ‘as is’, with a monitoring program in place for the future.

Unfortunately, the varying definitions and interpretations of *in situ* preservation present among practitioners are partially a result of a lack of inclusion within professional educational programs. To date, the following universities offer a specific underwater archaeology program:

Australia: Flinders University, University of Western Australia;
Denmark: Syddansk University;
Egypt: Alexandria University;
Finland: Helsinki University;
France: University of Nîmes, University d'Aix Marseille;
Germany: University of Kiel;
India: Andhra University, Tamil University;
Israel: University of Haifa;
Italy: University of Sassari, University of Study in Tuscia;
Japan: Tokyo University of Marine Science and Technology;
Netherlands: Groningen University;
Norway: Norwegian Tech Science University;
Spain: Barcelona University, Valencia University;
Turkey: Selcuk University of Konya;
UK: University of Southampton, Bournemouth University, University of Bristol,
University of Oxford University;
USA: University of West Florida, Texas A & M, East Carolina University, University
of Miami.

Of these universities, Flinders University is the only program to provide an independent course on *in situ* management; however, none of the programs provide a field methods course relating to the practical application of *in situ* techniques discussed in this chapter. This suggests that although the current trend is to employ *in situ* preservation as established within current best practice for UCH site management, the approach itself is not integrated into professional training and development. In order to diminish the discourse between the prescribed 'first option' and its application, the theory behind this approach and the broad range of techniques associated with *in situ* preservation should be integrated into the academic curriculum, and be further shaped by engagement within the field.

5

Red light to port, green light to starboard: legalities protecting what lies beneath

Contemporary discourse regarding the field of UCH management and the development of a universal best practice encourage the establishment of, and amendments to, international heritage legislation and guidelines. Broadly speaking, international law comprises and is supported by a fluid body of conventions, recommendations, declarations, resolutions, charters and treaties that function “on a consensual and confederate basis” (Fowler 2008, p. 1427). Some of these instruments come to fruition with global institutions directly supported by State Party governments (i.e. the UN, UNESCO), while other texts are established by nongovernmental agencies (i.e. ICOMOS) or transitional agencies (i.e. African Union, European Union [EU]).

Traditionally, international laws were based on the legal relationships between sovereign states (Schreuer 1993). More recently, however, they also tend to incorporate legal relationships that exist among international organisations, community groups, multinational and national corporations and other bodies that are considered to have the characteristics of an international personality (Başak 2010; Epps 2005). International conventions are, to a significant extent, based on customary laws that arise “out of a sense of legal obligation” by States (Goldsmith & Levinson 2009, p. 1804), which are then supplemented by rules and principles agreed upon in treaties and other international texts. In essence, conventions are legal contracts entered into by individual State Parties. In order to become an enforceable law, an international convention must be ratified by a

predetermined number of participating States (UNESCO GI n.d.); once internationally adopted, the convention applies only to those signatory State Parties.

Each category of international documents (i.e. convention, resolution, treaty), varies in terms of its relationship with domestic legislation – some are fully ratified and endorsed by State Parties, who may only be required to sign the text while others may be required to develop domestic legislation in parallel with the content of the international text in order to become a signatory. Moreover, it can take years to draft the document, during which the international legislation often reflects the economical, political and social inter-dependence amongst signatory nations at the time; however, in later years, perspectives and trends regarding legislative articles may change.

In relation to heritage legislation, in order to prevent international laws from becoming antiquated, whilst remaining inclusive of the varying domestic laws and customary practices, specific criteria regarding items of cultural significance remain broad across the global scope. The ambiguity afforded by the broad classification of culturally significant material within these laws may not always strengthen the application of legislative articles, however they do enable longevity in the application of the text. Unfortunately, as a result of vague identification of items of cultural significance, UCH was excluded from early international conventions and guidelines – which is paralleled by an overall general exclusion from many early domestic heritage laws.

This chapter will therefore analyse UN and UNESCO conventions and ICOMOS charters relating to or impacting tangible cultural heritage in order to obtain a greater understanding of the basis for current international UCH legislation. The international texts will be examined for inclusion of or inference to UCH, and the application and definitions of cultural-identifying lexicon (*antiquities, cultural heritage, cultural patrimony, cultural property, monuments, relics, objects*) and managerial terminology (*conservation, preservation, protection, in situ*). It is not intended to examine these documents from a legal perspective, instead the analysis addresses the history, evolution and application of the language impacting the practice of UCH management, with the aim of discussing managerial terminology across the legal landscape in subsequent chapters.

International legal landscape

In recent years, the two most influential international organisations in shaping the management of UCH are the United Nations Educational, Scientific and Cultural Organization and the International Council on Monuments and Sites. The former was created “to contribute to peace and security by promoting collaboration among nations through education, science and culture in order to further universal respect for justice” (UNESCO Constitution 1945, Art. 1.1). This global membership developed from a collaboration of organisations following WWII. The main predecessors of UNESCO include: The International Committee of Intellectual Cooperation, Geneva 1922 – 1946, The International Institute of Intellectual Cooperation, Paris 1925 – 1946 and The International Bureau of Education, Geneva 1925 – 1968. During the Conference of Allied Ministers of Education, which began in 1942 and continued until 1945, a recommendation was made to hold a United Nations Conference for the establishment of an international education and cultural organisation. In 1945, 44 governments participated in the UN Conference and signed the constitution, leading to the First Session of the UN General Conference in Paris, 1946. Results from the Conference concluded that UNESCO would help establish international norms in education, science and culture (UNESCO 1995).

Similarly, members of the International Congress of Architects and Technicians of Historic Monuments met in Venice in 1964 to discuss the establishment of an association comprising cultural heritage professionals from around the world, with the common goal of protecting and preserving cultural heritage; this resulted in the formation of ICOMOS. Members of ICOMOS include architects, art historians, anthropologists, archaeologists, engineers, historians and urban planners, who focus on establishing and improving “heritage conservation standards and techniques for all forms of cultural properties: buildings, historic towns, cultural landscapes, archaeological sites, etc.” (ICOMOS 2006, p. xvi). The organisation is composed of 101 national committees consisting of individual members from their respective State Party, along with more specific international committees, which focus on specialised areas of cultural heritage – including UCH.

Although the roles and responsibilities outlined by the UN, UNESCO and ICOMOS provide similar standards for governments and practitioners regarding UCH management, there is a fundamental difference between the organisations. Both the UN and UNESCO are supranational organisations, driven by governmental representation of the member States, in which conventions – once signed and ratified – become international law. Comparatively, ICOMOS is a professionally driven organisation that supports international law and offers advice to UNESCO, but does not derive legislation.

In order to understand the contextual framework for the development of international UCH legislation, this study will analyse the progression of cultural heritage legislation and other international documents impacting heritage management. The analysis addresses the UN, UNESCO and ICOMOS conventions and charters independently, before comparing data across texts. In total, eleven international laws and guidelines relating to or impacting cultural heritage are assessed. The review assesses the vocabulary relating to cultural heritage management within the texts to later demonstrate that variations in terminology can impact the management of UCH.

Evolution of heritage management

The Hague Convention

During the middle of the twentieth century, as a result of WWII, the overwhelming destruction of cities across Europe and throughout the Asia Pacific region provided an impetus for UNESCO members to discuss the promotion and protection of cultural heritage (Davison 1991; Feilden & Jokilehto 1998). During the Fifth Session of the UNESCO General Conference held in Florence in 1950, committees discussed issues related to cultural activities, traditions, historical monuments, styles of art, historical documents and writings that demonstrated cultural individuality and identity. The resulting Resolutions (UNESCO Resolutions 1950, II.D) concluded that it was UNESCO's responsibility to help member States protect their cultural heritage from neglect and violence, and to ensure that "regardless of social condition, [the public] shall have access to the best works of every land and every age." In order to achieve this outcome, the

cultural heritage of humankind, inclusive of works, monuments and documents, requires protection and conservation through the use of modern methods. Although the significance of cultural heritage, and indeed the intention to protect it, was noted amongst the international community at the time of the 1950 Conference, no protocols were specifically set in place to manage these resources, nor did it define the boundaries for legislatively protecting heritage. Despite the growing popularity of recreational SCUBA and maritime leisure activities at the time, UCH was not specifically identified as a component of public cultural heritage.

In response to the 1950 Resolutions, UNESCO adopted the *Convention for the Protection of Cultural Property in the Event of Armed Conflict*. The terms outlined within the 1954 Hague Convention were influenced by the principles concerning the protection of cultural property during armed conflict, derived from earlier predecessors such as the 1874 Brussels Conference, the Hague Convention (IV) of 1899 concerning the Laws and Customs of War on Land, the Hague Convention (IX) of 1907 concerning Naval Bombardment in Time of War, and the *Treaty on the Protection of Artistic and Scientific Institutions and of Historic Monuments*, 1935.

The 1954 Hague Convention (Art. 1.a) defines *cultural property*, irrespective of origin or ownership, as both movable or immovable property that is considered “of great importance to the cultural heritage of every people.” This broad definition encompasses a wide range of at-risk property beyond culture-specific importance, and while it relates to tangible components of cultural heritage, *cultural heritage* itself is not defined. Once items of cultural value are identified, *protection* of this material includes the “safeguarding of and respect for such property” (UNESCO Convention 1954, Art. 2). Under this convention, it is the duty of the State Party to preserve its cultural property during a time of peace, as well as to prepare for its safeguarding during a time of war. Importantly, this is inclusive of all legislatively identified cultural property within the territory of the State, which excludes those sites yet to be nominated or established as domestic ‘cultural property’. This was the first example of *cultural property* established as a concept within Common Law (Forrest 2002b; Prott & O’Keefe 1992).

In 1999, the Second Protocol to the 1954 Hague Convention was enacted with supplements to the earlier convention. The latter Protocol expands provisions regarding *protection* beyond ‘safeguarding’ to include:

As appropriate, the preparation of inventories, the planning of emergency measures for protection against fire or structural collapse, the preparation for the removal of movable cultural property or the provision for adequate *in situ* protection of such property (UNESCO Convention 1999, Art. 5).

Similar to the First Protocol, the Second Protocol to the Hague Convention (1999) only applies to materials of significance identified within a state territory; the geographical extent of territorial jurisdiction is State-specific and is therefore not specified.

The Law of the Sea I, II and III

For centuries, maritime nations have claimed jurisdiction over waterways and seas; however, it was not until the late-eighteenth century that the notion of a ‘territorial sea’ belonging to a single nation began to develop. By the end of the nineteenth century, this concept was widely established as “a band of water of a uniform breadth around the whole coast of the state” (Archer & Beazley 1975, p. 2). The breadth was generally accepted under the ‘cannon-shot’ rule, which was equivalent to approximately three nautical miles, or one marine league, from shore (USOCS 2011).

Until the start of the twentieth century, any waters beyond the cannon-shot were considered international waters, with jurisdiction resting under the ‘Freedom of the Seas’ – a doctrine emphasizing that international waters were freely navigable to all nations and owned by none (DOALOS n.d.; Grotius 1633). During the First World War, some countries independently extended their sovereign jurisdiction from the traditionally three nautical mile boundary to 12 nautical miles, claiming economic, customary and sanitary control. This prompted international discussion among members of the League of Nations, and in 1930 a conference was held in The Hague to clarify the issue of territorial waters. Unfortunately, with little concurrence of opinion regarding the breadth of territorial jurisdiction over waters beyond three nautical miles, no agreement eventuated (Archer & Beazley 1975; Dean 1958; Jessup 1958; Treves 2008a; White 1969).

Between 1945 and 1950, as part of the global realignment of power and wealth following WWII, states again began expanding their maritime jurisdiction. The first of these major jurisdictional expansions occurred in 1945, when US President Truman issued two proclamations regarding the extension of US claim over the sea. The first signalled the intention of the US to extend its national jurisdiction over the natural resources (including living and non-living resources) in the sea out to the continental shelf, while the second declared that the US could establish coastal fisheries in certain areas of the high seas (Dean 1958; Frost 2004). Legislatively, UCH was not then identified as a resource and thus did not fall under the protection of the newly expanded US jurisdiction – these manoeuvres did, however, have ramifications for the development of both national maritime boundaries and international recognition of state control over resources. At the time, no definition was established regarding the seaward extent of the continental shelf, but a press release by the US government shortly followed asserting the outer US maritime limit extended to the 100-fathom, or 600 foot, depth (Ball 1985).

Argentina, Chile, Peru and Ecuador subsequently extended their own national jurisdiction from three nautical miles to 200 nautical miles, while others extended their jurisdiction out to 12 nautical miles. This reshaping of maritime boundaries prompted a change in the international definition of territorial waters from the three nautical mile limit to 12 nautical miles. Beyond that, jurisdiction remained ambiguous (UNESCO 2012c). In 1949, at the First Session of the International Law Commission, the issue of jurisdiction beyond the established territorial waters and management of the high seas were topics of change and codification. These issues remained ambiguous despite further international congress over the next 40 years (Whiteman 1958).

Concurrently, recreational water-related activities were increasing in popularity: smaller recreational boats became affordable and SCUBA diving was introduced (Rau 2002). Individuals such as Jacque Cousteau, Philippe Tailliez and Frédéric Dumas, under the auspices and financial support of the French Navy, were among those to encourage the development of the underwater diving apparatus, and with this came the exploration of seabeds, ease of searching for shipwrecks, and excavating (unsystematically) treasure from the depths of the sea (Cousteau & Dumas 1953). As there were no contemporary maritime laws

protecting UCH, treasure hunters claimed Admiralty Laws as applicable to their search and recovery of shipwrecks and associated artefacts.

The increased accessibility of ‘resources’ (not specifically defined as either cultural or natural at the time) resulted in State Parties requesting more internationally concrete maritime jurisdictional boundaries. This in part directed the UN General Assembly to adopt Resolution 1105 (XI) of 1957, which led to the first Conference on the Law of the Sea in Geneva, Switzerland, in 1958. Eighty-six State Parties participated in the Conference, resulting in the Law of the Sea (UNCLOS I). The purpose of this Conference was to examine the legislative boundaries of the sea, addressing not just the legal but also the biological, economic, technical and political aspects across the open bodies of water. The 1958 Law of the Sea consisted of four independent conventions and an optional protocol: *Convention on the Territorial Sea and the Contiguous Zone* (CTSCZ), *Convention on the Continental Shelf* (CCS), *Convention on the High Seas* (CHS), *Convention on Fishing and Conservation of the Living Resources of the High Seas* and *Optional Protocol of Signature concerning the Compulsory Settlement of Disputes*. At this point, cultural heritage was excluded from within the Law of the Sea.

While each of the 1958 UNESCO Conventions identified provisional maritime zones, they remained ambiguous in regards to the defined breadth of each boundary (Treves 2008a). For example, the CTSCZ (UN Convention 1958c, Art. 1.1) established that the sovereignty of a State should extend “beyond its land territory and its internal waters, to a belt of sea adjacent to the coast,” including the airspace above the water as well as the seabed and subsoil therein, but the specified extent of the territorial waters remained undefined. The CTSCZ (UN Convention 1958c, Art. 24.2) also identified that the contiguous zone cannot exceed 12 nautical miles from the baseline from which the breadth of the territorial sea is measured. This left the waters beyond this distance to fall under the Freedom of the Seas, which still enabled both coastal and non-coastal States freedom of navigation, fishing, right to lay submarine cables and pipelines and freedom of airspace; inadvertently, this included freedom to access and extract UCH for private ownership beyond the jurisdictional 12 nautical miles.

The two maritime zones identified beyond the contiguous zone were the continental shelf and the high seas. The continental shelf zone comprises the

seabed and the subsoil up to a depth of 200 nautical miles or, “beyond that limit, to where the depth of the superadjacent waters admits of the exploitation of the natural resources of the said area” and includes “areas adjacent to the coasts of islands” (UN Convention 1958a, Art. 1). Within the Law of the Sea, natural resources are classified specifically as “fish or oil, gas or gravel, nodules or sulphur” (DOALOS n.d., ‘Economic Exclusive Zone’). States adjacent to the continental shelf have sovereign rights to explore and exploit the natural resources, including mineral and other non-living resources of the seabed and subsoil as well as other living sedentary species – however, this excluded control over cultural resources. Again, it is identified that a State’s rights over natural resources do not affect the legal status of the high seas or the Freedoms of the Sea. The ‘high seas’, or the Area, is defined as all parts of the sea that are not included in the territorial sea or within the internal waters of the State, which are thus beyond State jurisdiction and open to the Freedom of the Seas (UN Convention 1958b, Art. 1).

After prolonged discussions due to dissatisfaction regarding UNCLOS I, the Second UN Conference on the Law of the Sea (UNCLOS II) was held from March 16 to April 26, 1960. However this conference again failed to fulfill the objective of codifying a rule defining a specific breadth for the territorial sea, as Committees again could not agree upon any one of the proposals put forth (Treves 2008a; White 1969). Accordingly, UCH remained omitted from the Law of the Sea. Through this period, there was a growing discontent for the continued state of ambiguity of ownership for both living and non-living resources in non-jurisdictional waters (Archer & Beazley 1975).

The international discontent, in conjunction with the introduced idea of an ‘economic zone’, was repeatedly brought to the attention of the UN General Assembly, and in 1970, resulted in the adoption of Resolution 2749 (XXV). This international document established principles for governing natural resources found within the Area, beyond the limits of sovereign jurisdiction. The 1970 Resolution concluded that States could neither claim nor exercise sovereign rights over any waters beyond national jurisdiction, nor explore or exploit natural resources without the consent of the appropriate international authority. Although Resolution 2749 omits reference to UCH, it does identify that international authority can be established to manage resources beyond State jurisdiction.

By 1974, it was decided that a Third Conference on the Law of the Sea was necessary to reconsider a coastal State's jurisdiction over maritime zones and to introduce new concepts such as the 'common heritage principle', which specified "the equitable exploitation of Area resources for the benefit of all States, with especial concern for developing States" (Walker 2012, p. 137). Along with the general ownership of the natural resources, many State Parties felt it was the correct political environment to readdress the safeguarding of UCH, and proposed to include provisions defining the legal status of archaeological and historical objects situated beyond the contiguous zone (Strati 1995). It was, however, effectively determined that maritime archaeology held a low status within the context of the Law of the Sea in comparison to the driving economic potential for raw minerals and seabed development, which resulted in minimal discussion regarding UCH inclusion within the Third Conference (Carducci 2002b; Strati 1995).

Indeed, State Parties grew frustrated by the slow progress regarding UCH inclusions within the draft text, and to support their argument for protection within delineated maritime zones, European State representatives requested a report on the protection of UCH in Europe. In 1977, the enquiry went to the Council of Europe's Parliamentary Assembly and resulted in a document known as the Roper Report (Blake 1996; Council of Europe 1978). The Report highlighted the need for the development of a convention specifically identifying UCH located within legislatively established maritime zones and acknowledged the need to declare national cultural protection zones up to the 200 nautical mile limit (Council of Europe 1978). Unfortunately, by the time the Roper Report was completed, the Third Law of the Sea was drafted (UNCLOS III) and the results for UCH were unfavourable.

The final text of the 1982 UNCLOS III contains 320 articles, set out into seventeen parts and nine annexes; see Table 7 for excerpts of UNCLOS III demonstrating new concepts and amendments to UNCLOS I and UNCLOS II. Of the 320 articles, only two – Article 149 and Article 303 – address UCH (Table 8). This limited inclusion of cultural heritage within the document continues to impact UCH management, as the representation within international law relating to ownership or custodianship of identified UCH on or within the seabed has a

significant impact on the development of domestic legislation and the perceived value of these non-renewable resources.

The remaining articles in the convention define the established maritime zones, and relate to trade, fishing rights, control over natural resources and the protection of the marine environment. After 40 years of discontent regarding the ill-defined maritime zones, the 1982 Convention was finally able to articulate agreed upon definitions for jurisdictional maritime boundaries, including a newly introduced Exclusive Economic Zone. To date, this document is considered the “constitution of the oceans” (Treves 2008b, p. 1); see Figure 16 for a definition of the delineated maritime zones. While UCH is addressed in the convention, its inclusion does not afford a robust level of detail regarding identification or appropriate management. Interestingly, although the 1982 UN Convention provides for the establishment of four institutions – the International Seabed Authority (ISA), the International Tribunal for the Law of the Sea, the Commission on the Limits of the Continental Shelf and the Meeting of the States Parties to the Convention – none of the organisations are regulated under the UN or UNESCO to enforce Articles 149 and 303 with respect to UCH.

Table 7 Text from the UNCLOS III that differ from UNCLOS I & II.

Amendments to jurisdictional boundaries and new concepts introduced in the 1982 Convention:
<p>An extension of national jurisdiction to a maximum breadth of the territorial sea fixed at 12 nautical miles and an inclusion of the contiguous zone continuing an additional 12 nautical miles out to 24 nautical miles;</p> <p>An introduction of the concept of ‘transit passage’ for straits used for international navigation, but introduces non-suspension passage which applies to straits where there is an alternative route, and straits connecting an exclusive economic zone or the high seas to the territorial sea of a coastal state;</p> <p>And coastal States can claim a 200 nautical mile Exclusive Economic Zone (EEZ) beyond the Territorial Sea that includes the seabed, subsoil and water column which enables State specific jurisdiction over all resource-related activities, control over artificial islands and installations, marine scientific research, and the conservation and protection of the marine environment.</p>

Table 8 Articles from the 1982 UN *Convention on the Law of the Sea* inclusive of UCH.

Article 149 pertains to ‘Archaeological and historical objects’ and stipulates that:
All objects of an archaeological and historical nature found in the Area shall be preserved or disposed of for the benefit of mankind as a 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.
Article 303 discusses ‘Archaeological and historical objects found at sea’ which include the following provisions:
<p>States have the duty to protect objects of an archaeological and historical nature found at sea and shall cooperate for this purpose.</p> <p>In order to control traffic in such objects, the coastal State 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.</p> <p>Nothing in this article affects the rights of identifiable owners, the law of salvage or other rules of admiralty, or laws and practices with respect to cultural exchanges.</p> <p>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.</p>

Area, High Seas: includes the seabed and ocean floor and the subsoil thereof, beyond the limits of national jurisdiction within the high seas. High Seas includes all parts 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.

Continental Shelf: The continental shelf of a coastal State comprises 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.

Exclusive Economic Zone: An area beyond and adjacent to the Territorial Sea, subject to the rights and jurisdiction of the coastal State and the rights of the freedoms of other States as governed by the UNCLOS III.

Contiguous Zone: A zone contiguous to the State’s territorial sea. The contiguous zone may not extend beyond 24 nautical miles from the baselines from which the breadth of the territorial sea is measured.

Territorial Sea: The sovereignty of a State extends, beyond its land territory, measuring from the low-waterline, and its internal waters, to a belt of sea adjacent to its coast. And extends to the airspace over the territorial sea as well as to its bed and subsoil. And the outer limit of the territorial sea is the line every point of which is at a distance from the nearest point of the baseline equal to the breadth of the territorial sea. Every State has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles, measured from baselines determined in accordance with the 1982 UNCLOS.

Internal waters: these include lakes, rivers, bays, archipelagic waters and any waters landward of the baseline of the territorial sea.

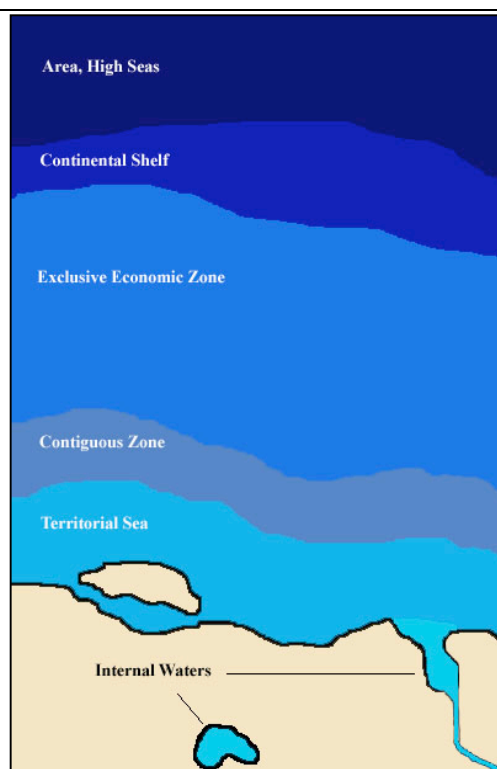


Figure 16 Delineated maritime zones resulting from UNCLOS III.

UNESCO Convention 1970

More than two decades after WWII, the market for private collection of cultural heritage objects was increasing. Members of the international community articulated their concern regarding the increase in global trade and movement of these materials, which directed UNESCO to establish the 1970 *Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property*. In effect, this convention was established to work in conjunction with domestic laws identifying objects of significant cultural value for all people, regulating the export of cultural materials from their territory and encouraging cooperation between State Parties.

Article 2 of the 1970 UNESCO Convention recognises that illicit trade of cultural objects is “one of the main causes of the impoverishment of the cultural heritage of the countries of origin of such property.” A provided response to this problem suggests denying the movement of objects of cultural value across State borders without government consent. The convention further details State obligations for both the protection of domestic cultural heritage and the mechanisms for the restitution of illicitly exported objects. Furthermore, it encourages the enactment of compatible domestic legislation, the preparation of a national inventory, scientific and technical institutions for the protection and preservation of cultural property, supervising archaeological excavations, and ensuring the preservation of certain cultural property *in situ*.

The 1970 Convention also identifies the need to protect areas with potential archaeological value, outlines ethical guidelines, promotes education and outreach regarding safeguarding cultural property, recommends that appropriate publicity be given to the disappearance of cultural property, and encourages State Parties to prevent museums from acquiring objects that have been illegally removed from their country of origin. Items defined as *cultural property* include property that “on religious or secular grounds, is specifically designated by each State as being of importance for archaeology, prehistory, literature, art or science” (UNESCO Convention 1970, Art. 1); the sale or transfer of this designated cultural material between private individuals is deemed illegal. The convention does not stipulate whether this property must be located on land or can be underwater, but rather that it must be within State jurisdiction.

UNESCO Convention 1972

In 1972, at the 17th Session of the General Conference, UNESCO presented the *Convention Concerning the Protection of the World Cultural and Natural Heritage* ('World Heritage Convention'). This is the first international instrument to link both cultural and natural heritage protection, pioneering the recognition of the contextual and physical relationship between cultural heritage and the natural environment. The 1972 UNESCO Convention ('Preamble') presents the international community with a principle for the protection and conservation of sites of "universal significance," and importantly establishes heritage as an international issue. Although the definition for universal value remains ambiguous, the World Heritage Convention "institutionalized the nineteenth-century conservation ethic and the 'conserve as found' ethos" (Smith 2006, p. 27), which continues to drive members of the public to nominate and preserve sites well into the twenty-first century. Thus, the idea of addressing the protection of cultural heritage and natural heritage on the same spectrum can be seen in some ways as an early precursor to *in situ* preservation within legislation. The World Heritage Convention (Art. 1) defines *cultural heritage* to be inclusive of monuments, groups of buildings and sites. Although the definition of cultural heritage sites includes both "works of nature and [hu]man," there are very few mixed sites that have been recognised for both heritage categories under the convention (UNESCO Convention 1972, Art. 1); the majority are noted either for their cultural or natural significance. Moreover, the document does not specify whether these sites must be on land or if 'works' and 'sites' underwater are also included. It is, however, noted in the *Operational guidelines for the implementation of the World Heritage Convention* that "immovable property which are likely to become movable will not be considered" (Cleere 1993, p. 25); this potentially impacts UCH. Although it has not yet been tested in a legal context, the question still remains whether a shipwreck or similar UCH found within territorial waters, which is bound by domestic law to remain *in situ* – and thus legislatively immovable, – can then be considered eligible for World Heritage listing. Importantly, in order for this criterion to apply, the State Party must have signed onto the 1972 Convention.

This international text identifies a shift in the professional (and legal)

associations with the concept tangible and intangible culture components. It is important to note that the World Heritage Convention this is the first UNESCO text to define *cultural heritage* – as opposed to *cultural property*. As a result, in order to ensure compatibility across already adopted texts, the 1972 Preamble directly references pre-existing “international conventions, recommendations and resolutions concerning cultural and natural property.” This change in vocabulary identifies not only a shift in professional references with ‘culture’ but also the legal associations. Prott and O’Keefe (1992, p. 319) state that the notion of ‘property’ is now becoming recognized as “inadequate and inappropriate for the range of matters covered by the concept of the ‘cultural heritage’.”

UNESCO Convention 2001

The 1978 Roper Report addressed the nature of the underwater archaeological discipline and legislation inclusive of UCH across Europe, and concluded that UCH throughout the region was at risk. Although the Report was received too late to have a great impact on the final text of UNCLOS III, it encouraged the European Parliamentary Assembly to draft a European Convention on the Protection of the Underwater Cultural Heritage. This draft was theoretically going to be the basis for an international agreement on UCH management (See Council of Europe 1978 for more information). Unfortunately, like so many earlier conventions pertaining to the sea, a consensus regarding the territorial scope of the Draft could not be achieved, and thus, the Convention was never adopted (O’Keefe 2002).

In 1988, a Committee on Cultural Heritage Law was formed by the International Law Association to help prepare a draft convention on the protection of the underwater cultural heritage for UNESCO. Prior to completion, ILA presented the document to ICUCH at the 1992 ICOMOS Conference in Sydney, and two years later, the final text for the draft was adopted by ILA and submitted to UNESCO for consideration (O’Keefe 1996). Underwater cultural heritage, for the purposes of the ILA Draft Convention, was defined as “all underwater traces of human existence provided these have been lost or abandoned and have been underwater for at least 100 years” (O’Keefe 1996, p. 300). The definition specifically included sites, structures, buildings, artefacts and human remains, and

also extended to wrecks such as a vessel, aircraft, other vehicle or any part thereof, its cargo or other contents, together with its archaeological and natural contexts (ILA 1994, Art. 1.1). Although the text suggested a blanket approach to identifying UCH, with all sites greater than 100 years being protected, the Draft stipulated that not all sites require the same level of managerial attention.

The term ‘abandoned’ UCH is presented in the definition of UCH with the underlying understanding that once research and recovery technology becomes available, the rightful owner has “25 years after discovery of the technology” to claim the lost items and/or shipwreck, otherwise the UCH is deemed abandoned (O’Keefe 1996, p. 300). Should technology not exist yet, or if it is too difficult to obtain, the owner has 50 years to “keep the claim afloat” (O’Keefe 1996, p. 300). This does not apply to wrecked warships, as many State Parties already claim ownership, and in many cases, sovereign immunity on any lost warships, regardless of age (e.g. US, *Sunken Military Craft Act*). This also excludes other sites in which States, such as the Dutch and Spanish, lay claim to government-owned vessels and establish sovereign immunity over these identified sites (Staniforth et al. 2009). The ILA Draft also introduced the concept of a ‘Cultural Heritage Zone’ that would allow State Parties to protect UCH within waters up to the seaward limit of the continental shelf. However, during discussion leading to the final text, it was noted that not all States wanted to establish a Heritage Zone, and thus the extension of heritage jurisdiction beyond the 12 nautical miles of the territorial sea was presented as an optional provision (O’Keefe 1996).

In 1995, UNESCO concluded that the ILA Draft Convention would be a useful base for the development of a new legal instrument for the protection of UCH internationally. A committee was formed to draft a convention at the 29th Session of the UNESCO General Conference. The preliminary text resulted from the integration of the 1994 ILA draft, the Draft European Convention for UCH, the 1996 ICOMOS Charter and the notes taken on UCH during the general meetings. In 1998, State experts contributing to the UNESCO Draft Convention on the Protection of the Underwater Cultural Heritage met in Paris to discuss the progress of the document; 122 experts from 58 State Parties participated in the discussions along with members from International Maritime Organization, the United Nations Division for Ocean Affairs and the Law of the Sea (DOALOS), and observers from non-member States and non-governmental organisations.

Three meetings followed, and on November 2, 2001, at the Plenary Session of the 31st General Conference of UNESCO, the *Convention on the Protection of the Underwater Cultural Heritage* was adopted and the process for ratification began. Although the text was adopted, many State Party representatives doubted the strength of the Convention and its compatibility with the 1982 UNCLOS (Rau 2002).

The 2001 Convention comprises 25 articles and the Annex, and strives to eliminate the Law of Salvage, prevent the continued commercial exploitation of UCH, and ensure the effective protection and preservation of heritage materials for future generations. The main document sets out basic principles for protecting UCH and contains provisions for an international cooperative scheme beyond jurisdictional waters, whilst the Annex provides some details on widely recognised guidelines and applied practical rules for the treatment and research of UCH. The rules and principles adopted are designed to protect UCH and curtail treasure hunting through the management of UCH beyond the 12 nautical mile territorial sea into the contiguous zone, Economic Exclusive Zones, and out to the seaward limit of the continental shelf. The maritime zones outlined in UNCLOS III are again defined in the 2001 Convention, with the purpose to overlap the 1982 Law of the Sea.

More specifically, the 2001 Convention (Art. 2.3) encourages all State Parties to preserve cultural heritage that has been underwater for at least 100 years old “for the benefit of humanity.” This includes “all traces of human existence having a cultural, historical or archaeological character” (UNESCO Convention 2001, Art. 1.a), including State vessels and aircraft lost at sea. Additional UCH, such as submerged coastal landscapes, artefact scatters and inundated communities are inferred within the text. The convention (UNESCO Convention 2001, Art. 2.5) also establishes that “the preservation *in situ* of underwater cultural heritage shall be considered as the first option before allowing or engaging in activities directed at this heritage.” However, the text acknowledges that *ex situ* recovery of artefacts is still a valid management method for the purpose of “scientific studies or for the ultimate protection of” UCH (UNESCO Convention 2001, Rule 4).

Additionally, the 2001 text addresses the growing body of practical knowledge and experience, and promotes international information sharing,

training and technological advancements, as well as emphasises the importance of raising public awareness through access and education. Of note, the document does not provide terms regarding the issue of ownership over heritage, nor does it seek to offer a framework for arbitration of any disputes or claims between nations, States and individuals. It is acknowledged that the management resources available between State Parties may differ, and therefore States should take all appropriate measures to protect UCH to “the best practicable means at their disposal and in accordance with their capabilities” (UNESCO Convention 2001, Art. 2.4).

In regards to controlling the private or unsanctioned exploitation of UCH, the 2001 Conventions affords State Parties the right to prevent vessels possessing illicitly obtained UCH from entering or exiting their territorial waters. This enables State Parties 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” the 2001 UNESCO Convention (Art. 15). If heritage artefacts are illegally removed from an underwater archaeological site, the State Party can seize the material and should “record, protect and take all reasonable measures to stabilize” the *ex situ* UCH (UNESCO Convention 2001, Art. 18.2).

UCH located within a zone beyond maritime jurisdictional boundaries must be reported to the Director General and Secretary General of the International Seabed Authority, despite the fact that “the competence of the Seabed Authority over UCH was implicitly denied” (Carducci 2002a, p. 432). The ISA, however, provides a centralised database of marine-related resources, inclusive of reported UCH sites, for State Parties interested in mining minerals at sea; should an archaeological site be located within the desired mining area, the State Party has a duty of care to preserve the UCH in accordance with the 2001 Convention.

The convention asserts that individual State Parties may enact their own conservative legislation with regards to UCH management, as long as they “adopt rules and regulations which would ensure better protection of underwater cultural heritage than those adopted in this Convention” (UNESCO Convention 2001, Art. 6.1). Like other conventions, the 2001 text represents an international regulation

specific only to those State Parties who ratify the document; States that choose not to ratify can, however, agree to the rules provided within the Annex.

The Annex of the 2001 Convention, which incorporates the 1996 ICOMOS Charter, contains detailed rules for activities directed at UCH. These include regulations on how a project is to be designed, guidelines regarding the competence and the qualifications required for persons undertaking activities, and methodologies on conservation, excavation and site management. Similar to the 2001 Convention, the Annex (Rule 1) establishes that “the protection of [UCH] through *in situ* preservation shall be considered as the first option.” However, the Annex also acknowledges that some archaeological sites may require more intrusive study.

ICOMOS Charter 1964

In 1964, the *International Charter for the Conservation and Restoration of Monuments and Sites*, also known as the Venice Charter, was established to protect historic monuments and sites for future generations. The 1964 Charter refers not only to discrete architectural works, but also to monuments found in both urban and rural settings relating to civilizations of the past, a significant event in history or the development of humankind. The inclusive definition of monuments encompasses “not only great works of art but also...more modest works of the past which have acquired cultural significance with the passing of time” (ICOMOS Charter 1964, Art. 1). This document further focuses on the conservation and restoration of monuments, with the intention of studying and safeguarding the architectural heritage.

Article 15 of the Venice Charter discusses how excavation should be in accordance with the scientific standards outlined in the 1956 UNESCO *Recommendations on International Principles Applicable to Archaeological Excavations*, and indicates that the necessary measures should be taken for the “permanent conservation and protection of architectural features.” Moreover, the Article sets out that objects discovered during excavation must be permanently conserved, and every means must be employed to facilitate the understanding of the monument and disseminate the information without distorting its meaning. These points clearly link to the ‘built heritage’ and educational/outreach aspects

of modern *in situ* preservation approaches. Within its definition of heritage material, the 1964 Charter makes no specific reference to historic monuments located underwater.

ICOMOS Charter 1990

During the International Symposium held in 1987 in Washington, D.C., US, ICOMOS was “requested to: (1) petition UNESCO to establish international instruments” regarding the protection and management of UCH, and “(2) initiate the development and documentation of appropriate techniques to be used in the protection, investigation, and recovery of material and data from” UCH sites (Delgado 1997, pp. 201-202). This led to the 1990 ICOMOS *Charter for the Protection and Management of the Archaeological Heritage*. While the charter sets an ethical standard to be followed in the approach to UCH management, it asserts that the document’s function is not to serve as an independent resource, but should be “supplemented at regional and national levels by further principles and guidelines” (ICOMOS Charter 1990, ‘Introduction’).

Indeed the 1990 Charter does not solely address UCH, but it is expressly inclusive of “the archaeological heritage which is in, or has been removed from, an underwater environment” (ICOMOS 1998, p. 183). Within the 1990 ICOMOS Charter (Art. 1), UCH is identified as an aspect of archaeological heritage, which incorporates:

That part of the material heritage in respect of which archaeological methods provide primary information. It comprises all vestiges of human existence and consists of places relating to all manifestations of human activity, abandoned structures, and remains of all kinds (including subterranean and underwater sites), together with all the portable cultural material associated with them.

As inferred by members of ICOMOS, UCH is inclusive of submerged sites and structures, shipwrecks and associated materials, as well as the archaeological and natural contexts of the site (ICOMOS 1998).

The content of the 1990 Charter (Art. 3) identifies that the protection of archaeological heritage “should be considered as a moral obligation upon all human beings” implying that legislation and adequate funding should be priorities to facilitate effective and efficient management. The article continues by encouraging that:

Legislation should afford protection to the archaeological heritage that is appropriate to the needs, history, and traditions of each country and region,

providing for *in situ* protection and research needs (ICOMOS Charter 1990, Art 3).

Here, the term *in situ* protection is employed but not explicitly explained in terms of its scope of application to cultural heritage sites and associated content. The criteria for what domestic legislation should include, however, is detailed in Article 3, specifically emphasizing the need for governments to adopt provisions that enable maintenance, allow for proper management and provide support for the conservation of archaeological heritage. The Article also outlines that domestic policies should be regularly updated regarding land use and development, further emphasising the need to amend legislation to be compatible with contemporary and evolving influences. Moreover, it puts forward that domestic legislation should incorporate provisions for protecting undiscovered archaeological sites as well as registered and noted sites of value.

The 1990 Charter (Art. 6) distinctly expresses that the overall objective of archaeological heritage management should be the preservation of monuments and sites *in situ*, and that any transfer of elements of the heritage to new locations represents a violation of the principle of preserving the heritage in its original context. Should items be removed, the management scheme must include long-term conservation and curation of all related records and collections. Disturbance surveys and excavation should begin with a non-intrusive general survey of the archaeological resource in order to develop a strategy for protecting, preserving and managing the heritage, along with the contextual information of the site, before destructive methods are applied.

The Charter acknowledges that in order to continue developing knowledge about the human past, there is a requirement for a systematic and scientific investigation of material remains. Depending on circumstances, investigation of UCH may need to include a wide “range of methods from non-destructive techniques through sampling to total excavation” (ICOMOS Charter 1990, Art. 5). One of the central principles of preserving cultural heritage is the gathering of knowledge, and Article 5 identifies that the techniques employed during investigation should not unnecessarily damage or destroy the heritage, as these are non-renewable resources. The priorities for disturbing a site should include heritage at risk of damage from development and land-use change, looting or natural destruction. Excavation should, where possible, “be partial, leaving a

portion undisturbed for future research” unless destruction of the site is imminent (ICOMOS Charter 1990, Art. 5). Unthreatened sites can be excavated if the site proves unique and an extraction of materials can offer a development in the understanding of past societies. In accordance with the Venice Charter, excavation should be conducted using methods congruent with the 1956 UNESCO *Recommendations on International Principles Applicable to Archaeological Excavations*.

ICOMOS Charter 1996

In 1991, 25 years after its foundation, ICOMOS founded the International Committee on the Underwater Cultural Heritage to help promote the identification, education, protection, conservation and preservation of UCH around the world, along with community education and engagement. The ICUCH Committee consisted of 18 practitioners within the field of UCH management (inclusive of conservators, archaeologists, anthropologists, historians and land managers), and was formed “in reaction to the pressing needs brought to light by the discovery and subsequent exploitation of the remains of the *Titanic*” shipwreck (ICUCH 2006, p. xviii).

In response to the increasing vulnerability of UCH globally, ICUCH was asked ICOMOS to outline the principles for protecting and managing UCH for the broad international community. ICOMOS members recognised the changing threats to UCH caused by increasing human interaction with and impact on the underwater environment through industrial, commercial and recreational activities. At the General Assembly held in the Bulgarian capital Sofia in October 1996, ICOMOS members ratified the *Charter for the Protection and Management of the Underwater Cultural Heritage*. The document outlines what is considered best practice for UCH management concerning identification, protection and conservation of underwater sites, and acts as a more specific supplement to the 1990 ICOMOS Charter.

The definition of ‘archaeological heritage’ in this document is synonymous with the 1990 Charter. The Fundamental Principles under the 1996 ICOMOS Charter (Art. 1), however, have been extended to include stipulation that:

1. Preservation *in situ* should be considered a first option;
2. Public access should be encouraged;
3. Non-destructive techniques, non-intrusive survey and sampling should be encouraged over excavation;
4. Minimal impact on UCH during investigation is ideal;
5. Investigation must avoid unnecessary disturbance of human remains or venerated sites; and,
6. Investigation must be accompanied by adequate documentation.

The remaining content outlines components necessary within project design, including requirements for adequate funding, setting realistic timetables for all stages of the project, acceptable practice for research objectives, standards of qualifications for individuals involved, and ethical responsibilities. The document also outlines the necessity of preliminary, non-disturbance investigation and site assessment, along with documentation, publication and dissemination of information, and overall site management. Long-term management should be included in the project design, as well as *ex situ* materials conservation – which should only be carried out in accordance with current professional standards and with adequate, long-term funding. If heritage materials are left *in situ*, a long-term *in situ* management plan should be established in keeping with best practice. Overall, heritage management and research should strive to draw on international knowledge and practical experience, which is essential to ensure the most effective protection and preservation of UCH.

UCH-lexical expressions

International legislative documents commonly establish that ‘for the purposes of this convention’ the identified terms of significance are defined either within the prologue or within a preliminary article. This therefore delineates the boundaries of the legislation. Given that the provisions within cultural heritage law only apply to criteria presented within the definition of the identified subject matter, clear and inclusive definitions relating to UCH are essential (Prott & O’Keefe 1984). Standard dictionary-derived definitions for referenced terminology are generally not heritage-specific and therefore would not suffice as the basis for legislative parameters. In establishing a sound and broadly inclusive UCH-specific vocabulary, it is therefore necessary to comprehensively outline what constitutes each cultural-identifying term and managerial lexicon.

In a legal setting, the method of interpretation for defining lexicon falls under two categories: the natural and ordinary meaning rule and the teleological method (Prott & O’Keefe 1984). The former is what judges interpret as the natural and ordinary meaning of the term in question. While evidence presented by professionals may influence this view, pioneers in cultural heritage law Lyndel Prott and Patrick O’Keefe (1984) argue that a judge more often than not interprets the lexicon according to the layman’s perspective. The latter method of defining terminology is utilised when courts look at the statute in question and seek to define the term in order to “forward the purpose” of the statute, thus giving the courts the ability to provide “a more expansive interpretation of the words being considered” (Prott & O’Keefe, 1984, p. 176).

There are no specific criteria for defining terms within a piece of legislation. As such, it is up to the lawmakers and professionals contributing to the creation of the law to define terms of significance as accurately as possible, and to include as many individual terms within that classification to represent the full breadth of a specific topic. As a result of varying interpretations of ‘valuable’ pertaining to tangible cultural heritage among State Parties, establishing an authoritative and internationally recognised definition of UCH and related management principles can be problematic. It is therefore important to maintain current legislation by continuously re-evaluating legally established definitions as technology, methodology and State Party interests continue to evolve.

As heritage practitioners and international UCH legislation continue to trend toward a recognised best practice for UCH management, it is imperative to establish a specific vocabulary that is appropriately inclusive of various global heritage terminology whilst eliminating ambiguity. The aim of UCH legislation should thus be to support practitioners in the field with a framework for effectively managing UCH. The following addresses the most frequently identified terms of significance (i.e. *cultural heritage* and *cultural property*) employed within the international texts already introduced, as well as reviews the terms *underwater cultural heritage* and *in situ*. The presence and application of managerial lexicon (i.e. *conservation*, *preservation* and *protection*) within assessed international texts is also examined because of its direct association with legislatively referenced *in situ* terminology.

Cultural property versus cultural heritage

The 1954 Hague Convention (Art. 1) defines *cultural property*, irrespective of origin or ownership, as:

Movable or immovable property of great importance to the cultural heritage of every people, such as monuments of architecture, art or history, whether religious or secular; archaeological sites; groups of buildings which, as a whole, are of historical or artistic interest; works of art; manuscripts, books and other objects of artistic, historical or archaeological interest; as well as scientific collections and important collections of book or archives or of reproductions of the property defined above.

The buildings in which these items of cultural significance are stored, preserved and displayed are also considered *cultural property*, and the areas in which there is a concentration of identified cultural property are referred to as “centres containing monuments” (UNESCO Convention 1954, Art. 1). Notably, the term *cultural heritage* is employed within the definition of *cultural property*. As this Convention was composed with the intention of being utilised in conjunction with domestic legislation, specific definitions for what explicitly may be considered as archaeological sites, significant monuments and buildings, and works of art and literature remains within the customary cultural discretion of each ratifying State Party. Respectively, property from foreign or non-majority cultures within State jurisdiction should also be considered for potential value.

Sixteen years after the Hague Convention, UNESCO amended the definition of *cultural property* to be more inclusive. This expansion included property deemed archaeological, prehistoric, historic, or being of importance in the categories of literature, art or science. As Table 9 demonstrates, *Cultural heritage* is no longer an identifier within the definition of *cultural property*, however it is introduced “without definition or operative significance” (Hoffman 2006, p. 11). Interestingly, larger items earlier defined as *cultural property*, such as buildings, are also omitted from this definition. Notably, there is an evolution in the classification of *cultural property* from the 1954 First Protocol to the 1970 *Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property*.

Table 9 Definition of *cultural property* in the 1970 UNESCO Convention (Art. 1).

The term includes:	
a.	Rare collections and specimens of fauna, flora, minerals and anatomy, and objects of palaeontological interest;
b.	Property relating to history, including the history of science and technology and military and social history, to the life of national leaders, thinkers, scientists and artists and to events of national importance;
c.	Products of archaeological excavations (including regular and clandestine) or of archaeological discoveries;
d.	Elements of artistic or historical monuments or archaeological sites which have been dismembered;
e.	Antiquities more than one hundred years old, such as inscriptions, coins and engraved seals;
f.	Objects of ethnological interest;
g.	Property of artistic interest, such as:
h.	Pictures, paintings and drawings produced entirely by hand on any support and in any material (excluding industrial designs and manufactured articles decorated by hand);
i.	Original works of statuary art and sculpture in any material;
j.	Original engravings, prints and lithographs;
k.	Original artistic assemblages and montages in any material
l.	Rare manuscripts and incunabula, old books, documents and publications of special interest (historical, artistic, scientific, literary, etc.) singly or in collections;
m.	Postage, revenue and similar stamps, singly or in collections;
n.	Archives, including sound, photographic and cinematographic archives;
o.	And, articles of furniture more than one hundred years old and old musical instruments.

Two years after the adoption of the 1970 UNESCO Convention, there was a shift in legislatively employed cultural-identifying terminology, from *cultural property* to *cultural heritage*. The 1972 Convention is the first UNESCO international instrument to define the *cultural heritage* concept. It is here that *cultural property* becomes recognised as a component within *cultural heritage*, as opposed to being the identified term of significance. *Cultural heritage* within the 1972 Convention (Art. 1) consists of:

Monuments: architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science;

Groups of buildings: groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science;

Sites: works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view.

The only other term defined in the 1972 Convention is *natural heritage*.

Although *cultural heritage* is an identified term of significance, it is only referenced again within the 1972 text in two articles (Articles 11 and 24). The

term *cultural property*, however, is applied in nine different articles. This suggests that while the identified cultural lexicon evolved from *cultural property* to *cultural heritage*, the applied language is not synonymous. Furthermore, the provided definition of *cultural heritage* directly omits terms associated with smaller, tangible items of cultural significance. Unlike the detailed definition for *cultural property* applied in the 1970 Convention which specifically includes moveable, tangible items of heritage, the *cultural heritage* definition limits these items to an ambiguous phrase listed under monuments as “elements of an archaeological nature” (UNESCO Convention 1972, Art. 1).

Lyndel Prott and Patrick O’Keefe (1992, p. 307) identify that there is a movement away from strictly ‘property’ to that of broader heritage, which “consists of manifestations of human life which represent a particular view of life and witness the history and validity of that view” (Prott & O’Keefe 1992, p. 307). The interpretation of the ‘heritage’ construct is thus built on the fundamental importance of ‘property’ within culture and tradition, but has evolved beyond tangible items to also include intangible social and cultural identifiers – despite the progression of language among practitioners, it is not effectively noted in legislation at this time. Interestingly, although the 1999 Hague Convention amends certain articles within the First Protocol to comply with a more modern era, the cultural heritage signifying term employed remains congruent with the 1954 predecessor; *cultural property* is not further redefined.

In regards to cultural-identifiers referenced within ICOMOS Charters, neither *cultural property* nor *cultural heritage* are employed within either the 1964 or 1990 Charters. These documents are more specifically focused on *monuments* and *archaeological heritage*. The 1996 ICOMOS Charter (‘Introduction’) does, however, identify “specific attributes and circumstances of cultural heritage under water [sic],” but does not express this further.

Despite the evidence that *cultural heritage* supersedes *cultural property* in more recent international texts, Prott and O’Keefe (1992, p. 310) note that contemporarily, *cultural property* within Common Law has been identified “as meaning the right to exploit, to alienate, to exclude,” and overall signifies ownership. This domestic interpretation can, therefore, impact the efficiency of applied international texts domestically.

Components of cultural property and cultural heritage

Interpretation of undefined terms within international legislative texts falls under Article 31.1 of the 1969 *Vienna Convention on the Law of Treaties*, which states that “a treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.” It is therefore important to reference the global context in which the conventions, resolutions and recommendations are written in order to understand the contemporary ‘ordinary meaning’ applied to the document.

The review of international texts in this study demonstrates noticeable evolutions in the associations and applications of vocabulary among the documents, which are greatly influenced by shifts in the international political and economic climates (Pers. Comm. Craig Forrest). More specifically, despite the movement away from ‘property’ to ‘heritage’, as discussed above, there are a range of qualifiers presented within the varying definitions in conjunction with both cultural terms.

For example, the age of cultural material, as a criterion for either term, is omitted from all of the UNESCO conventions discussed in this body of work except the 1970 and 2001 UNESCO Conventions. Within both of these documents, the age of significance is outlined at 100 years. More specifically, the 1970 Convention (Art. 1.e, 1.k) specifies the age limit applies only to antiquities and articles of furniture, but no other age is identified for *cultural property*. In contrast, the 2001 UNESCO Convention (Art. 1.a) provides a blanket protection for all UCH 100 years or older. These differences in defined or omitted ages were variously negotiated to address specific contemporary threats, and thus can be a point of concern for some States when the established age is in conflict with domestic legislation. Comparatively, ICOMOS does not include age as a defined criterion within any of the charters discussed in this chapter, thus requiring the identification of age as a qualifier of cultural significance to be determined by domestic legislative acts. It is important to identify that within each international text, the introduction of age is established in response to contemporary issues, and as such, minutes from committee meetings prior to adoption of the final text should be referenced for a great understanding of the context of the provisions.

Similarly, the specific items associated with *cultural heritage*, such as *antiquities*, *monuments*, *relics* and *objects*, are also to be determined by contemporary climate and domestic legislation. The Oxford-English dictionary defines *antiquities* as an “object, building, or work of art from the ancient past” (Oxford Online 2011, n.p.). Interestingly, the 1970 UNESCO Convention (Art. 1.e) interprets *antiquities* as “inscriptions, coins and engraved seals” and does not equate the lexicon with immovable cultural heritage. No other international convention or charter assessed in this body of work identifies *antiquities* with *cultural property* or *cultural heritage*. The lexicon among domestic legislation, as will be discussed in the proceeding chapter, provides more robust expressions of the term across varying State Parties.

Another non-descript cultural identifier employed in earlier conventions was *monuments*, which was initially introduced in the 1954 Hague Convention as an item of *cultural property*. The term *monuments* was again presented in the 1970 Convention (Art. 1.d) as “artistic or historical monuments” within the vague description of *cultural property*, but there are no expressed criteria for what this entails. It is not until the World Heritage Convention (1970, Art. 1) that *monuments* is defined as:

Architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science.

Although the 2001 UNESCO Convention does not specifically include this term within their definition of UCH, based on Article 1.a.i, “sites, structures, buildings, artefacts and human remains, together with their archaeological and natural context” is synonymous with the 1970 definition of *monuments*.

Additional ambiguous terminology include *archaeological*, *historical* and *objects*. *Archaeological*, as an independent term, is not specifically defined in any assessed international text, and thus interpretation relies on domestic legislative interpretation for specific associations. No identified age has been assigned to what is considered *archaeological*, or in the case of UNCLOS III, what age or period defines something as *historical*. Within the analysed UN and UNESCO texts, there are notably implied differences between *archaeological* and *historical*, as they are often included in conjunction with one another. The Hague Conventions (1954 and 1999) and the 1970 Convention include *archaeological*

sites within their definition of *cultural property*, but there are no qualifiers as to what identifies *sites*. *Archaeological* is again employed in the World Heritage Convention as a component of *sites* and an aspect of *cultural heritage*, but again, specific qualifiers for these terms remain ambiguous in order to be uniquely interpreted under State Party laws.

Similarly, the term *objects* remains open for domestic interpretation. The Hague Conventions (Art. 1) include “objects of artistic, historic or archaeological interest” within the definition of *cultural property*, but further inclusive components are omitted. The 1970 UNESCO Convention identifies *objects* as a classification of *cultural property* to include products of excavations and archaeological discoveries, antiquities, original works of art and sculpture, but does not employ the same lexicon as the 1954 Convention. Shortly thereafter, the World Heritage Convention excludes *objects* from the definition of what constitutes a World Heritage site, and states that it can incorporate “elements or structures of an archaeological nature” but does not confirm or deny if these elements are inclusive of *objects*. This cultural-identifying term is, however, employed within UNCLOS III, albeit the ambiguity of *objects* remains a concern for practitioners. In more recent legislation, the 2001 UNESCO Convention amends the cultural-identifying vocabulary to include *artefacts*, as opposed to *objects*, which is a term commonly utilised by practitioners to define items of cultural material affiliated with an archaeological or historic site.

UCH

Within UN and UNESCO doctrines, *underwater cultural heritage* has only been explicitly defined within the 2001 UNESCO Convention. This term “is designed with a practical objective as opposed to an abstract contemplation” (Forrest 2002a, p. 523), which includes:

All traces of human existence having a cultural, historical or archaeological character which have been partially or totally under water, periodically or continuously, for at least 100 years such as:

- 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.

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

Installations other than pipelines and cables, placed on the seabed and still in use, shall not be considered as underwater cultural heritage (UNESCO Convention 2001, Art. 1).

Within the assessed UN conventions, the 1982 UNCLOS is the only Law of the Sea to include UCH within its texts; although, as previously noted, classifications regarding identified items of cultural significance located underwater remain ambiguously presented.

Notably, provisions of international heritage law only apply to cultural-identifiers or materials needing protection, which falls within the legislatively presented definition of the subject matter (Prott & O’Keefe 1984). Without specific reference to underwater locations, UNESCO heritage laws referencing *cultural heritage* and *cultural property* do not automatically apply to cultural heritage materials located underwater. Subsequently, as identified ‘heritage’ is not synonymous across the international texts, State Parties must rely upon domestic legislation to determine inclusive or exclusive items of cultural heritage within a State’s territory, and specify whether, and to what extent, domestic law applies to UCH.

Comparatively, the 1990 and 1996 ICOMOS Charters identify *cultural heritage* as inclusive of those items of archaeological heritage found “in underwater sites” (ICOMOS Charter 1990, Art. 1), including “in inland and inshore waters, in shallow seas and in the deep oceans” (ICOMOS Charter 1996, ‘Introduction’). This definition of *cultural heritage* relates to any heritage materials located in, or which have been removed from an underwater environment, including “submerged sites and structures, wreck-sites and wreckage and their archaeological and natural context” (ICOMOS Charter 1996, ‘Introduction’).

Components of UCH

Among practitioners, a shipwreck structure and its surrounding physical context are considered to comprise the ‘site’, while the objects and disarticulated features found in association with the site are considered artefacts. Unfortunately, shipwrecks (and vessels) are omitted from most UNESCO conventions, as they do not fit within the definitions presented of movable or immovable property. Under the Hague Conventions and the 1972 Convention, shipwrecks are not referenced within the definition of *cultural property* or *cultural heritage*;

however, through interpretation, the underwater structure and associated context can be argued as comprising an archaeological site. Similarly, within the 1970 UNESCO Convention (Art. 1), vessels and shipwrecks can be viewed as “property relating to cultural history,” and to “the history of science and technology.” In order for these interpretations to have merit, however, they require support from domestic legislation. It is not until 2001 that the term *vessel* is legislatively introduced into the international context of valued cultural heritage.

Warships, however, are defined as “a ship belonging to the naval forces of a State” Party (UN Convention 1958b, Art. 8.2), and whilst on the high seas, have complete immunity from the jurisdiction of any State other than the flag State. When these warships sink, they remain under the jurisdiction of the State of origin, as most countries claim sovereign immunity in regards to military vessels. While sunken aircraft remains are generally not considered vessels in the same capacity as shipwrecks, military aircraft resting underwater can fall under sovereign immunity as ‘ships of war’ if the State lay claim. The 2001 UNESCO Convention (Art. 1.a.ii) is the only international text assessed in this study to specifically include aircraft as a component of *cultural heritage* (or *cultural property*).

Conservation

Conservation ‘is the profession devoted to the preservation of cultural property for the future’ and includes treatment and preventative care for tangible cultural remains (WAAC 1996, n.p.). However, the term is not referenced in any of the UN Law of the Sea Conventions, nor is it frequently found within UNESCO documents discussed in this Chapter. Of the five UNESCO conventions reviewed, the World Heritage Convention and the 2001 Convention are the only two texts to employ *conservation*. The 1972 UNESCO Convention (Art. 4) references the managerial lexicon, in that individual States Parties have a duty to ensure “the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage.”

Conversely, *conservation* is employed in all of the analysed ICOMOS charters. The Venice Charter (1964, Art. 6) establishes that “the conservation of a

monument implies preserving a setting which is not out of scale.” This includes ensuring that “no new construction, demolition or modification which would alter the relations of mass and colour must be allowed” (ICOMOS Charter 1964, Art. 6). Although here specifically concerning monuments, *conservation* in this context refers to the protection or restoration of sites to their original presentation.

The 1990 ICOMOS Charter (‘Introduction’) establishes principles associated with the responsibilities of public authorities and practitioners relating to the “processes of inventorisation, survey, excavation, documentation, research, maintenance, conservation, preservation, reconstruction, information, presentation, public access and use of the heritage.” *Conservation* is referenced amongst the broad scope of applicable utilisations of heritage, rather than as a specifically defined parameter in isolation. More specifically, under the subheading ‘Maintenance and Conservation’, the 1990 ICOMOS Charter (Art. 6), establishes that “the overall objectives of [] heritage management should be the preservation of monuments and sites in situ,” with an ethical requirement to include “proper long-term conservation and curation;” *conservation*, however is not defined in greater detail.

The final ICOMOS Charter assessed in the study presents the term in association with ‘material conservation’, in that a conservation plan “must provide for treatment of archaeological remains during investigation, in transit and in the long term” (ICOMOS Charter 1996, Art. 9), thus ensuring that adequate funding and time is secured prior to beginning treatment. Specific techniques associated with *conservation* are omitted from all three ICOMOS texts; however, the 1996 Charter identifies that “material conservation must be carried out in accordance with current professional standards,” which ensures that *conservation* is not restricted by the guidelines. While the prevalence of the term *conservation* within international charters would imply its significance and broad application, a clearly outlined working definition is lacking. Additionally, although only two of the five UNESCO conventions reference the term, an explicit definition or inclusion of ‘in accordance with current professional standards’ would remove ambiguity regarding the parameters of *conservation*, and ultimately strengthen its application to international UCH-inclusive legislation.

Preservation

Within the common vernacular, *preservation* is associated with maintaining or protecting the existence of something, keeping it safe from harm or injury, and an implication of providing longevity in the current state. In regards to the use of this term within the assessed international legislative documents and guidelines in this study, the application of *preservation* varies. As a managerial term, *preservation* is not employed within the confines of the assessed UN and UNESCO cultural conventions until 1970. The Convention (UNESCO Convention 1970, Art. 5.d) references that each State Party should establish services and measures to ensure the protection of cultural property, which includes “the supervision of archaeological excavations,” and the preservation “of certain cultural property” *in situ*. Qualifiers regarding what can be considered property worth preserving are excluded from the text. Interestingly, the term *preservation* is not included within another cultural convention until 2001. The UNESCO *Convention on the Protection of the Underwater Cultural Heritage* (2001, Art. 3) proclaims that State Parties “shall preserve underwater cultural heritage for the benefit of humanity,” and further emphasises the importance of *in situ* preservation.

Similar to the employment of *conservation*, ICOMOS utilises *preservation* in all three assessed heritage charters. The Venice Charter employs the lexicon within four of the sixteen articles, highlighting the importance of preserving and restoring monuments under internationally agreed upon principles. Although the 1964 ICOMOS Charter disagrees with the removal of monuments and associated items from their place of origin, items that are considered an integral part of the monument (i.e. sculpture, painting or decoration) may be removed if it can enhance and ensure their preservation. Specifically, however, the charter does not outline or discuss acceptable methods for preservation.

As mentioned earlier, the 1990 ICOMOS Charter asserts that it is within the ethical responsibility of practitioners and lawmakers to help preserve heritage. Unlike many of the UNESCO conventions, ICOMOS consistently emphasises the need to preserve heritage *in situ*, unless circumstances dictate otherwise. Article 6 of the 1990 Charter reiterates this by stating “the overall objective of archaeological heritage management should be the preservation of monuments

and sites *in situ*,” however, like the 1964 Charter, the techniques associated with preservation, which are deemed acceptable under these principles, are omitted from the text. Similar phrasing is applied in the 1996 ICOMOS Charter (Art. 1), establishing that preservation of UCH “*in situ* should be considered as a first option.” *Preservation*, or any derivative of the term, is not employed within any other article.

Protection

Protection is often associated with the act of ensuring someone or something is not harmed. In regards to cultural material, this means deterring destruction by natural factors or anthropogenic interference. Within the context of the international legislative documents, each cultural heritage convention and international charter included in this study employs *protection* within the text. The 1954 Hague Convention (Art. 2) distinguishes a difference between *protection* and safeguarding by establishing that the former comprises “the safeguarding of and respect” for cultural property. The following article specifically addresses the safeguarding of cultural property in a time of peace, but does not refer to *protection* within the phrasing. The 1999 Hague Convention (Art. 5) relates the two terms by establishing that safeguarding of property includes “the preparation of inventories, the planning of emergency measures for protection against fire or structural collapse, the preparation for the removal of movable cultural property or the provision for adequate *in situ* protection of such property.”

The 1970 UNESCO Convention also presents guidelines for the protection of cultural property from threat of theft, by requiring State Parties to set up national services to manage designated property. This framework includes creating legislation and regulations to secure the protection of such property, establishing and maintaining a national inventory of protected property, and promoting the establishment or the development of institutions – both scientific and technological – for the purpose of preserving and displaying the State’s cultural property. Moreover, States are encouraged to conduct community education and outreach pertaining to those properties considered culturally valuable, and to help organise and supervise archaeological excavations when

necessary. Certain cultural property should, however, be preserved *in situ* for protection and future research. Again, explicit criteria distinguishing which property should remain *in situ* are absent.

The World Heritage Convention (1972, Art. 4) is clear in establishing that each State Party should recognise their duty of care to protect the sites deemed to have heritage value for future generations. State Parties should seek to integrate the identified World Heritage sites into planning programs, establish and maintain services within the government to manage these sites, develop scientific and technical research and study programs to better learn from the heritage and aid in minimising the risk of damage and degradation, and take ultimate responsibility financially, technically, administratively, and legally to best manage the sites. Again, education and outreach programs are emphasised, and should be established within national and regional centres to encourage research development in the field. The 1972 Convention also sets out that State Parties have social, economic and scientific responsibilities in protecting world heritage. These criteria only apply to those sites that have been classified as universal sites of significance under the UNESCO World Heritage guidelines. For sites that are not labelled as World Heritage sites, the protection varies according to State Party ratification of other cultural heritage conventions and domestic legislation. For many UCH sites, the 1972 Convention does not apply.

Protection of UCH relating to UNCLOS III is also limited, as this managerial term is excluded from both Article 149 and Article 303; *protection* within the 1982 UN Convention predominantly focuses on natural resources within the marine environment. The utilisation of protection in the 2001 UNESCO Convention (Art. 2.4) is therefore significant, as the text specifically correlates the term *protection* with UCH, and encourages those State Parties involved to “individually or jointly as appropriate, take all appropriate measures in conformity with this Convention and with international law...to protect underwater cultural heritage.” Within the Annex to the 2001 UNESCO Convention (Rule 1), it is recommended that the protection of UCH through the application of *in situ* preservation “shall be considered as the first option” and that all “activities directed at [UCH] shall be authorized in a manner consistent with the protection of that heritage.” *Protection* remains ambiguous throughout the

Convention to enable State Parties to interpret the term according to domestic legislation.

In comparison, the Venice Charter only utilises the term *protection* once throughout the text. The inclusion pertains to ruins that must be maintained, and directs that appropriate “measures necessary for the permanent conservation and protection of architectural features and of objects” are taken (ICOMOS Charter 1964, Art. 15). Contrastingly, both the 1990 and 1996 ICOMOS Charters correlate *protection* with management in the title of the charter: the 1990 *Charter for the Protection and Management of the Archaeological Heritage* and the 1996 *Charter on the Protection and Management of Underwater Cultural Heritage*. These documents identify that the level and method of protection employed must not solely be based on archaeological techniques but should also extend to an interdisciplinary audience with wider professional and scientific knowledge. This is again emphasised by a need for domestic legislation to financially support the establishment of heritage management programmes. Importantly, the 1990 Charter (Art. 8) acknowledges that methodology is continuously dynamic and developing, along with theory and technology, and therefore requires continuing education and flexibility over time. Similarly, the 1996 Charter equates *protection* and management with an on-going process that should not remain static.

In situ terminology

An English translation for the Latin term *in situ* is “in the original place” (Oxford Online n.d., ‘in situ’). Throughout the reviewed international texts, and as will be demonstrated in the following chapter, *in situ* is employed in conjunction with *conservation*, *preservation* and *protection*. ‘*In situ* conservation’ is not employed within any international text analysed in this study, but it is referenced within domestic legislation.

In situ preservation is utilised in both UNESCO and ICOMOS texts. The term was initially applied within the 1970 UNESCO Convention (Art. 5.d) regarding the “preservation *in situ* of certain cultural property” during time of excavation; what this preservation specifically includes was omitted from the Convention, with the assumption that domestic legislation would define the acceptable limitations of ‘certain’ property and preservation. Within the context

of the 2001 UNESCO Convention (Art. 2.5) and Annex (Rule 1), “*in situ* preservation shall be considered as the first option before allowing or engaging in any activities directed” at UCH; neither the Article nor the Rule define or identify associated techniques for the *in situ* lexicon.

While *in situ* preservation techniques can be rather intrusive within the environment and context, they diminish the rate of degradation whilst minimising direct and detrimental public access to the cultural material. The 2001 Convention (Art. 2.10) stipulates that “responsible non-intrusive access to observe or document *in situ*” is recommended for education and outreach unless it is “incompatible with its protection and management.” This implies that passive *in situ* preservation methods are favoured unless a site requires more active methods for site stability and or safety.

Although the term *in situ* terminology was excluded from the First Protocol Hague Convention, it was included in the Second Protocol (1999, Art. 5) as “adequate *in situ* protection” that must be established in times of peace to protect cultural property should conflict arise, with an understanding that movable cultural property could also be moved during conflict. The 1999 Convention does not identify whether the removal of property or its *in situ* protection is preferred.

Of the three assessed ICOMOS texts, the Venice Charter is the only document to exclude *in situ* from the content. The 1990 Charter incorporates both *in situ* preservation and *in situ* protection within the document. The text identifies that the “overall objective of archaeological heritage management should be the preservation of monuments and sites *in situ*” and that the “transfer of elements of the heritage to new locations represents a violation of the principle of preserving the heritage in its original context” (ICOMOS Charter 1990, Art. 6). The 1990 Charter (Art. 8) further emphasises the drive towards *in situ* management by stating that practitioners “should take into account the shift in conservation policies from excavation to *in situ* preservation,” and should ensure that training programs disseminate evolving perspectives on management. This should be coupled with domestic legislation that provides “for *in situ* protection and research needs” (ICOMOS Charter 1990, Art. 3).

The fundamental principles of the 1996 Charter similarly state that preservation of UCH “*in situ* should be considered as a first option” (Art. 1), and that public access should be encouraged “except where access is incompatible

with protection and management” (Art. 10). The 1996 Charter also stipulates that non-destructive techniques and non-intrusive survey methods are preferred over excavation, minimal disturbance of the site is encouraged, and human remains are to be left *in situ* unless further investigation is warranted. The term *in situ* management is also referenced in the 1996 Charter (Art. 10), in that a management program design must include “measures for protecting and managing [UCH] *in situ* in the course of and upon termination of fieldwork.”

Conclusion

Eight UN and UNESCO conventions and three ICOMOS charters are examined for defined cultural-identifiers and managerial lexicon. The textual analysis clarified that definitions are not cross-referenced between international documents, but rather remain document-specific. There should, ideally, either be a clear progression of definitions between subsequent texts or continuity of lexicon employed within a single organisation. As was demonstrated, this is not the case. Instead, discontinuity is observed across the range of international legislative instruments. Moreover, although the cultural-identifying terminology is not the focus of this study, it does provide a gateway to a better understanding of the relationship between terms within the international texts and domestic legislation, which will be subsequently examined in Chapter 7.

With specific regard to UCH, *in situ* preservation is encouraged by both UNESCO and ICOMOS as the ‘first option’ for site management. However, neither the organisation nor the employing texts define the term, or any other *in situ* managerial term of interest. Indeed, as global perspectives regarding heritage values and ethical responsibilities continue to evolve, vague utilisation of managerial lexicon can have a significant impact on a practitioners’ ability to apply active management techniques to UCH sites.

6

Local conditions: an assessment of State Party legislation

Underwater cultural heritage practitioners rely on supporting documentation – including international conventions and guidelines and domestic legislation – to help justify both legal and ethical managerial decisions. The previous chapter discussed the history of, and integrated terms utilised within, heritage management in the international arena in order to demonstrate the movement of language impacting and supporting UCH. This chapter thus focuses on the domestic parallels by identifying trends within heritage-related legislative texts across the UNESCO-delineated regions.

UNESCO divides the world into five economic areas based on regional activities affiliated within the organisation: ‘Africa’, ‘Arab States’, ‘Asia and the Pacific’, ‘Europe and North America’, and ‘Latin America and the Caribbean’ (Figure 1). The international organisation consists of 195 State Parties and eight Associated Parties – 133 States are included in the sampling for this study. All Associated Parties are excluded. Some of the State Parties are linked to more than one region and are thus statistically assessed in each of their respective delineated regions. The legislative documents assessed in this study – ranging from constitutions, general heritage laws and underwater heritage specific laws to maritime laws and environmental laws – are inclusive of cultural-identifying terms that impact domestic UCH management. Each legal text is analysed for the previously identified cultural lexicon of interest (e.g. *antiquities*, *cultural heritage*, *cultural patrimony*, *cultural property*, *monuments*, *objects*, *relics*) and

managerial terms (*conservation, in situ, preservation, protection*), both in context and definition. The data are differentiated between cultural-identifiers and managerial lexicon because the former provides a base-relationship for quantitative data between domestic texts and international laws. The quantitative data obtained through regional analyses will be presented as a summary in this chapter. For a list of all State Parties included in this study by region and a compilation of data collected see Appendix 1.

There are a number of limitations impacting the sampling in this study, including access to domestic heritage-related legislation; see Appendix 2 for a list of legislation analysed. Some States Parties are omitted from the dataset if full-text heritage-inclusive laws were unavailable during data collection; this is because an accurate legislative assessment could not be conducted without full inclusion or access to the majority of the text. Although the sampling criteria require full text-copies of domestic laws, there are some exceptions – if the State Party assessment includes other full-text laws, and available excerpts provide enough of the legislation for contextual analysis. Additionally, the scope of the analysis focuses on federal rather than regional laws; therefore, State Parties that distribute legislative responsibilities to regional courts are also excluded from this study. The research does not exclude States that have both federal and regional legislation (e.g. Australia, Spain, the US, Federated States of Micronesia); in these instances, only federal laws are assessed.

Moreover, language is a significant limitation in this study. Some of the documents included in the analyses are unofficial English-language translations of original texts, and therefore it must be assumed that the terms applied within the renditions can be open to interpretation. This is specifically noted in translated French documents, as the term *patrimoine culturel* is presented in English translations variously as both *cultural patrimony* and *cultural heritage*, and are frequently applied interchangeably within the translated domestic laws of a single country. Phrases such as ‘territorial waters’ and ‘territorial sea’ as well as ‘out to the continental shelf’ and ‘above the continental shelf’ are also indiscriminately referenced. Many of the discrepancies relate to the date in which the law was written, suggesting that the translations convey contemporary lexical preference similar to those terms utilised by practitioners at the time rather than the literal translations.

This study not only focuses on the prevalence of State Party legislation employing identified terminology of interest but also addresses the inclusion of specific definitions for the terms within the legislative texts. The analysis is accompanied by an assessment of the other terms and phrases commonly associated with references to the identified lexicon, the frequency of definitions across regions and a global comparison of regionally preferred terminology. The overall aim of this analysis is to collate and present data for comparison in the following chapter that will relate the data from UNESCO-delineated regions to the previously discussed international texts. Outcomes and inferences from this process will subsequently be applied to a review of currently utilised methods of UCH management, including *in situ* practices, to assess the relationships between law and practice.

Regional - Identifying and defining lexicon

At the time data was collected for this study, the sampling incorporated 68% of State Parties affiliated with UNESCO (Figure 17), regardless of their proximity to open bodies of water. The regional samplings thus include: coastal states, with the terrestrial boarder of these nations connecting to an open body of water; inland states, in which all jurisdictional boundaries are adjacent to another country; and, lacustrine states, which share access to and jurisdiction over a lake. Of interest is whether UCH is of identifiable concern within legislation pertaining to both internal waters and larger navigable bodies of water (Figure 18). Data from the UNESCO-delineated groupings are presented as both a regional percentage (%) and the total number of State Party inclusions per region – identified as ‘SP’ – for intra-regional comparison. Initial observation identifies *antiquities*, *monuments*, *objects* and *relics* are commonly employed cultural identifiers within the five global regions. Within domestic legislation, these terms are variously integrated into definitions of *cultural heritage*, *cultural patrimony* and *cultural property*, and differ in their implied level of protection and significance. Figure 19 illustrates the global distribution of defined cultural-identifiers across the 133 State Parties included in this sampling (see Appendix 3 for State Party employment of cultural-identifiers). The data relating the cultural-

identifying lexicon across the five delineated UNESCO regions are presented in each associated sub-sections below. Those identifying terms that are presented in association with an underwater location (i.e. territorial waters, in the sea) are briefly mentioned within this section, but are presented in greater detail later in the chapter.

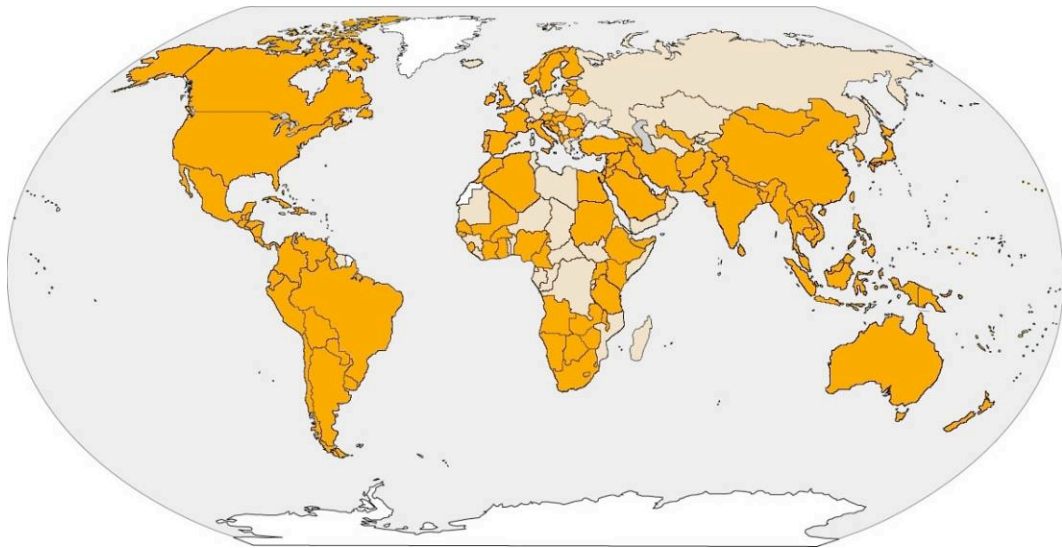


Figure 17 World map of State Parties included (in orange) in the study. Tan-coloured States are excluded from analysis and colourless States are not associated with a UNESCO-delineated region.

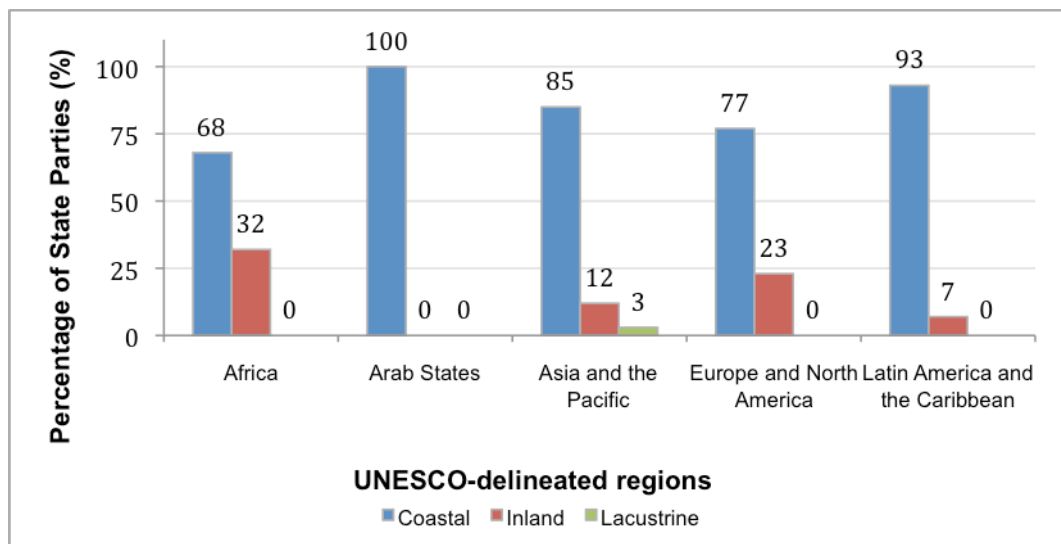


Figure 18 Regional distribution of coastal, inland and lacustrine State Parties.

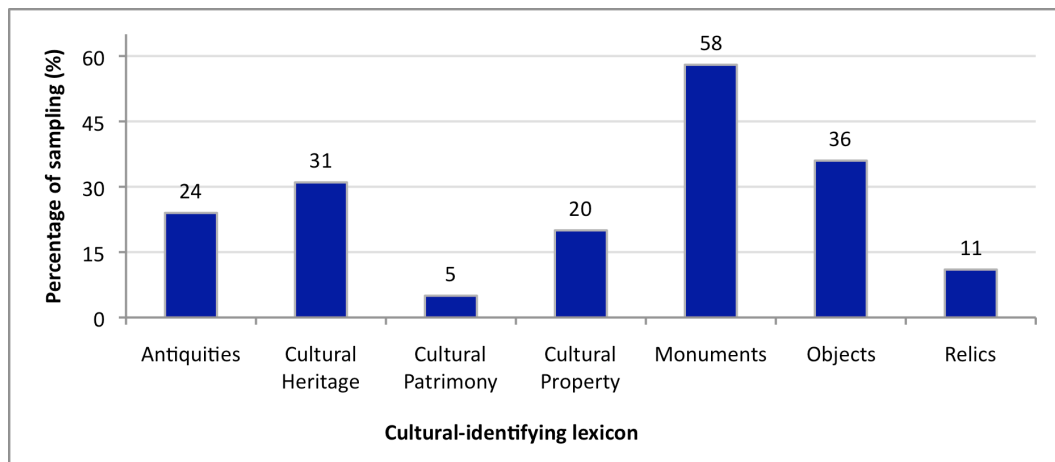


Figure 19 Global distribution of defined cultural-identifying terminology.

Africa

The UNESCO-delineated ‘Africa’ region consists of 54 State Parties. Of these States, 28 SP, totalling 52% of the region, were included for examination of cultural-identifying terminology within domestic legislation (Figure 20); 19 of the sample States are coastal. Figure 21 represents the distribution of defined versus employed cultural-identifiers within the region; across the ‘Africa’ region, 20 State Parties (71%) define more than one term of interest.

As demonstrated by Figure 21, *monuments*, or a derivative thereof, is the most frequently defined (71%) and employed (89%) cultural-identifying term in the region. This includes the individual terms *ancient monuments*, *national monuments* and *historical monuments*. Within the context of the domestic legislation, only 2 SP (7%) associate *monuments* or an associated derivative with underwater locations. Regionally, *objects* is more commonly associated with underwater location-markers than any other cultural-identifier. As such, only 6 SP, or 21% of the region, legislatively identify *objects* located underwater. Comparatively, only one State (Malawi) (4% regionally) references *relics* underwater. No State Party identifies *antiquities* underwater. In regards to *cultural heritage*, Angola is the only State Party to include cultural heritage located underwater, which is presented in the definition of the lexicon.

Across the region, definitions of *cultural heritage* commonly include other identified terms of interest, such as *monuments* and *objects*. Kenya’s *National Museums and Heritage Act 2006* (Sec. 2), for example, associates *cultural heritage* with:

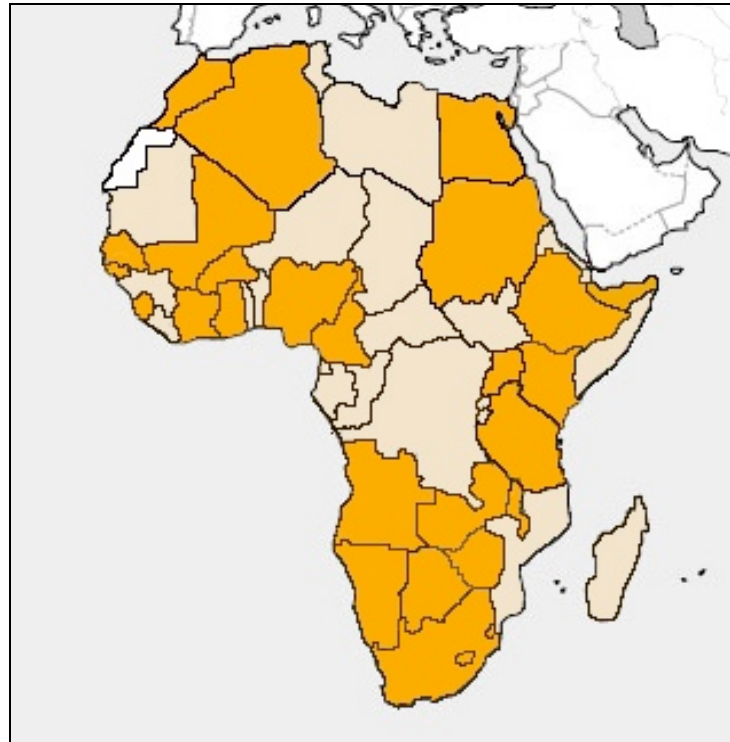


Figure 20 Map of State Parties included (in orange) in the ‘Africa’ regional study. State Parties in tan-colour are excluded from analysis, and colourless States are not associated with the region.

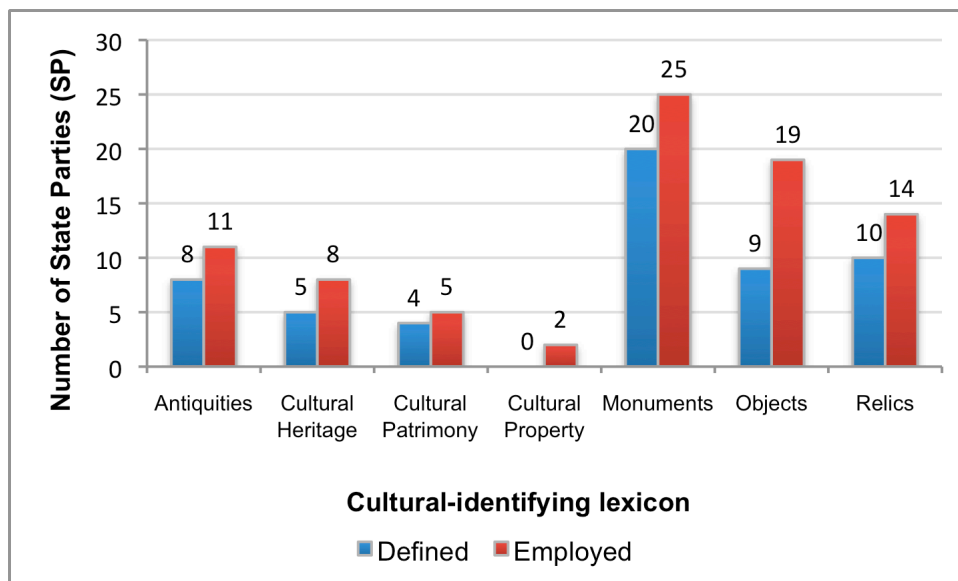


Figure 21 Distribution of defined and employed cultural-identifying terms within the ‘Africa’ region.

- a. Monuments;
- b. Architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of universal value from the point of view of history, art or science;

- c. Groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding value from the point of view of history, art or science;
- d. Works of humanity or the combined works of nature and humanity, and areas including archaeological sites which are of outstanding value from the historical, aesthetic, ethnological or anthropological point of view.

Kenya's domestic legislation also links objects of archaeological or paleontological interest, objects of historical interest and protected objects with *cultural heritage*. Similarly, Mali's *Decree No. 203 of 1985* (Art. 2) integrates "all the movable and immovable cultural properties which, for religious or secular reasons, are important for history, art, thought, science and technology" within the definition of *cultural heritage*. This includes "sites, monuments, archaeological properties, historical properties, ethnographic properties, architectural units, works of art, rare zoological, botanic, and mineralogical collections and specimens and objects of paleontological importance" (*Decree No. 203 of 1985*, Art. 3).

Interestingly, Mali is the only State to also define another *cultural* term. *Law No. 85-40 AN-RM of 1985* (Art. 2) refers to *cultural patrimony* as "the collection of moveable and immoveable goods that, because of religious or secular characteristics, assume an important aspect of history, art, thought, science or methodology." As seen above, the definition of *cultural heritage* is synonymous with that of *cultural patrimony*. Both definitions include *cultural property* and other similar terminology, suggesting the differences are due to subjective English translations. Algeria's *Law 98-04 of 1998* (Art. 2) integrates *cultural property* within the definition of *cultural patrimony* in a similar way:

All immoveable cultural property, furnishings, and moveable goods that are on or in the grounds of public property; certain relevant property belonging to private individuals; and relevant property in the subsoil of national interior or territorial waters that have been left by diverse civilizations dating from prehistory to modern day.

Algeria is the only State Party to reference *cultural patrimony* with underwater locations. Regionally, Mali and Kenya are the only two States to define more than one identifying heritage term, and although none of the assessed State Parties define *cultural property*, Burkina Faso, Angola and Mali utilise the term within their texts.

Arab States

The ‘Arab States’ region consists of 23 State Parties, geographically centred around the Middle East and Mediterranean (Figure 22). The sampling includes 13 (57%) of the regional State Parties, with 100% of assessed States being coastal. Five State Parties are associated with a second UNESCO-delineated region: 4 SP with the ‘Africa’ region and 1 SP with the ‘Europe and North America’ region. These States are statistically included in the analysis of both UNESCO groupings. Of the 13 State Parties assessed, 4 SP (31%) define more than one cultural identifier.

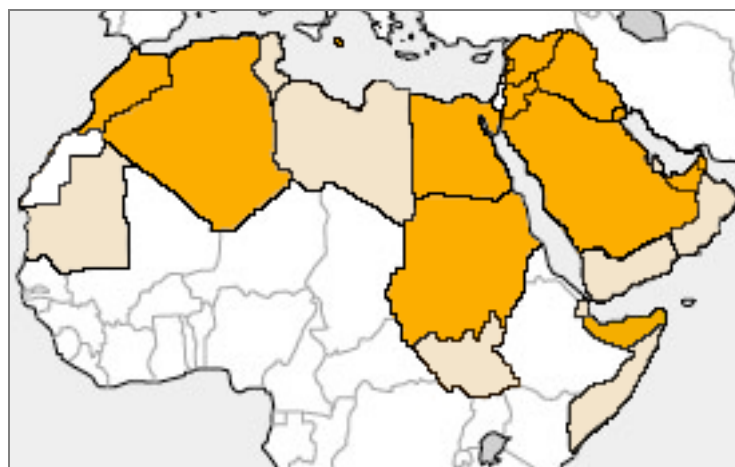


Figure 22 Map of State Parties from the ‘Arab States’ region. States in orange are included in the Study. State Parties in tan-colour are excluded from analysis, and colourless countries are not associated with the region.

Compared to the 89% employment of *monuments* in the previous region, and despite that 4 SP from the ‘Arab States’ region are also included the previous group, *monuments* is not the more commonly utilised or defined term across the ‘Arab States’ region (Figure 23). Of the 13 States, 62% employs *monuments*, however, only 2 SP reference *monuments* underwater. Bahrain is the only State to include an underwater location-marker, such as “in the territorial sea,” in the definition of *monuments* (*Decree Law No. 11 of 1995*, Art. 3.2) (see Appendix 1 for the regionally defined *monuments* derivatives).

Antiquities is referenced by 100% of the States assessed in the ‘Arab States’ region. Of these, 2 SP identify *antiquities* located underwater, but no legislation specifically includes underwater within a definition of the term.

Descriptions of *antiquities* vary greatly – ranging from anything produced by a person 40 years ago (Kuwait, *Ameer-Decree No. 11 of 1976*, Art. 3), to objects “made, written, inscribed, built, discovered or modified by a human being before the year AD 1750” (Jordan, *Law of Antiquities 1988*, Art. 2.7). Egypt extends the definition of *antiquity* to include:

Any movable or immovable property that is a product of any of the various civilizations or any of the arts, sciences, humanities and religions of the successive historical periods extending from prehistoric times down to a point one hundred years before the present, so long as it has either a value or importance archaeologically or historically that symbolizes one of the various civilizations that have been established in the land of Egypt or that has a historical relation to it, as well as human and animal remains from any such period (*Law No. 117 of 1983*, Art. 1).

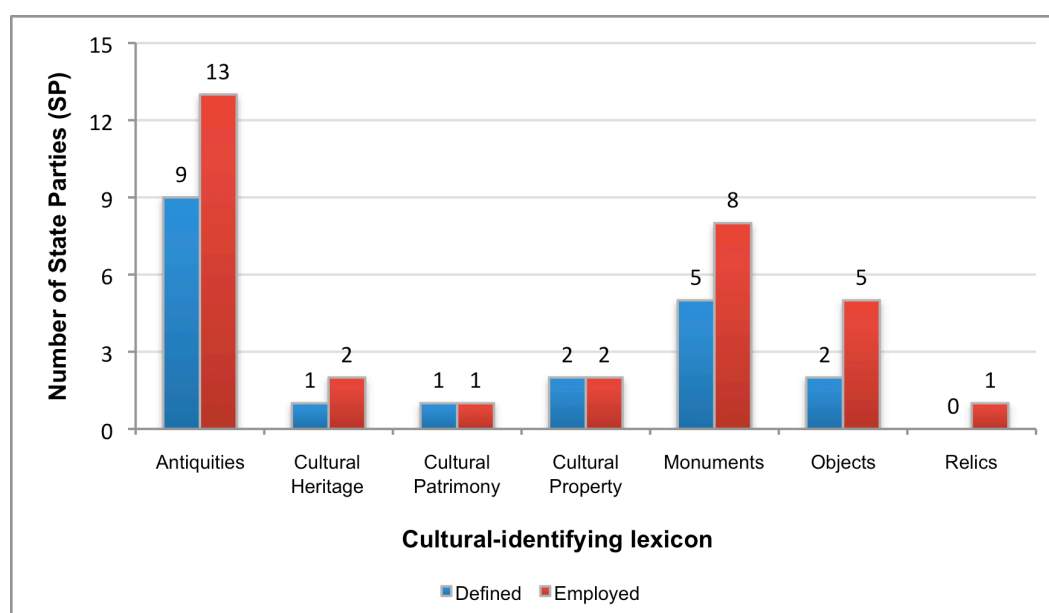


Figure 23 Distribution of defined and employed cultural-identifying terms in the ‘Arab States’ region.

Out of 13 State Parties analysed, Malta is the only one to define *cultural heritage*. In this example, similar language is utilised within the definition of *antiquities*. Malta’s *Cap. 445 of 2002* (Art. 2) defines *cultural heritage* as:

Movable or immovable objects of artistic, architectural, historical, archaeological, ethnographic, paleontological and geological importance and includes information or data relative to cultural heritage pertaining to Malta or to any other country. This includes archaeological, paleontological or geological sites and deposits, landscapes, groups of buildings, as well as scientific collections, collections of art objects, manuscripts, books, published material, archives, audio-visual material and reproductions of any of the preceding, or collections of historical value, as well as intangible cultural assets comprising arts, traditions, customs and skills employed in the performing arts, in applied arts and in crafts and other intangible assets which have a historical, artistic or ethnographic value.

Malta is also the only State – representing to 8% of the State Parties examined from this region – to include underwater *cultural heritage* within the context of the domestic legislation. Malta’s 2002 legislation also defines *cultural property* as “movable or immovable property forming part of the cultural heritage” (*Cap. 445 of 2002*, Art. 2). Lebanon utilises the term *cultural property*, and includes underwater location-markers within the definitions of both movable- and immovable-property (*Law No. 37 of 2002*, Art. 2).

Within the region, 1 SP (Algeria) defines *cultural patrimony* within the assessed domestic legislation, which is also inclusive of “relevant property in the subsoil of national interior or territorial waters” (*Law 98-04 of 1998*, Art. 2). The term *objects* is also only defined by 1 SP in the region (Lebanon), but four of the five States to reference *objects* associates the cultural identifier underwater. No State Party within the region defines *relics*, and Algeria is the only State to employ the term within its legislation.

Asia and the Pacific

In the UNESCO groupings, ‘Asia and the Pacific’ incorporates 48 State Parties. Legislation relating to heritage materials has been analysed from 34 of the 48 States (Figure 24). Of these, 29 SP are coastal and one State is lacustrine. Of the assessed States in the region, 23 SP (68%) define more than one cultural-identifying term, however, across the regional sampling, *objects* is more commonly referenced cultural-identifying. Seventy-four percent of the assessed States include *objects* within domestic legislation (Figure 25). This includes references with additional qualifiers of the term, such as *movable objects*, *immovable objects*, *historical objects*, *archaeological objects*, *protected objects* and *artefacts*. Of those to utilise an *objects* term, only 3 SP reference underwater. Interestingly, 35% of the region employ *antiquities* within the heritage-inclusive legislation, with nine States including *objects* within the definition of *antiquities*. Of the 12 SP to utilise *antiquities*, 5 SP do so in association with underwater locations.

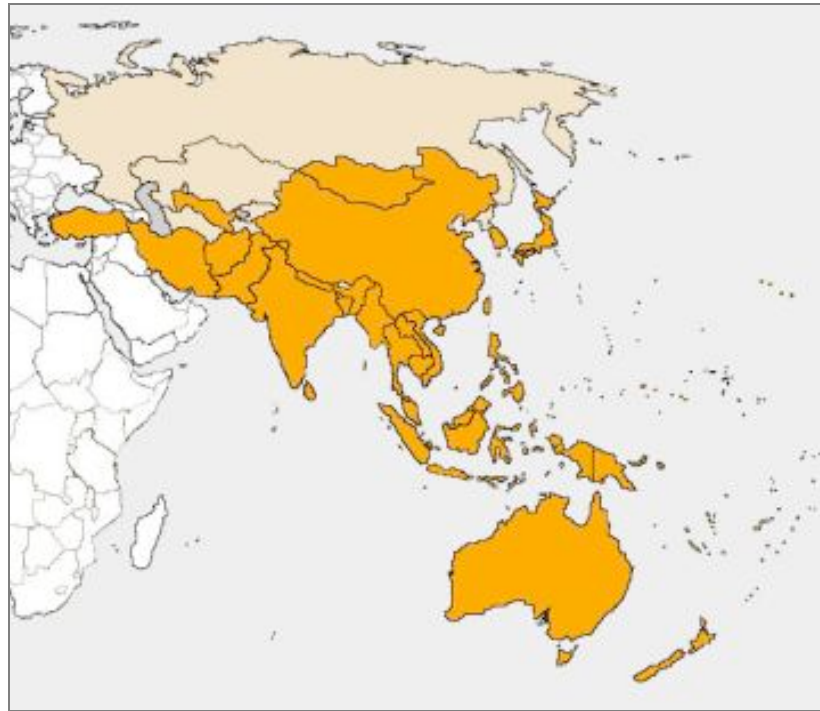


Figure 24 Map of ‘Asia and the Pacific’ region. Orange-coloured States are included in the study. State Parties in tan-colour are excluded from analysis, and colourless States are not included within the region.

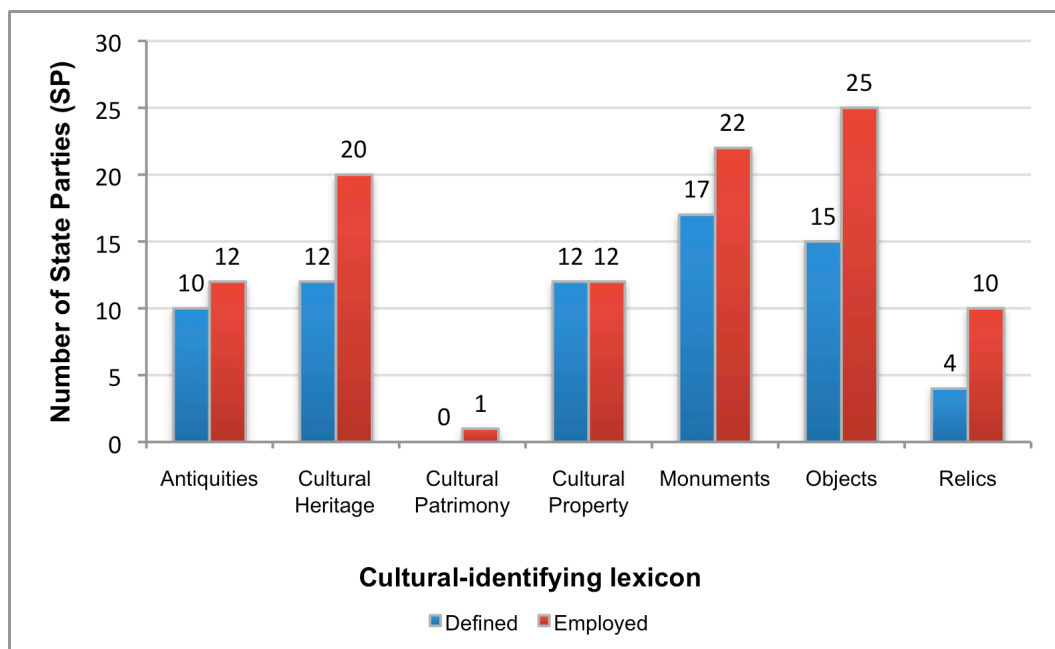


Figure 25 Distribution of defined and employed cultural-identifying lexicon within the ‘Asia and the Pacific’ region.

Sixty-five percent of the region refer to *monuments* within assessed domestic legislation. More commonly, the term is utilised in isolation, however additional qualifiers employed regionally include: *ancient monuments*, *national monuments*, *cultural monuments*, *historical monuments* and *archaeological monuments*. Three State Parties (9%) define more than one category of *monument*. Similarly, 3 SP equate *monuments* or an associated derivative with underwater locations.

Of the 35% to define *cultural heritage* in domestic legislation, only 3 SP (9%) include a reference to underwater location-markers within the definition. Of the 34 SP assessed in the region, Malaysia is the only State to specifically define *underwater cultural heritage* (*National Heritage Act 2005*, Sec. 2.1) (see subsection – Swimming with the fishes ‘Asia and the Pacific’ – below for the definition). Expressions of *national heritage* and *historic heritage* vary in specificity, ranging from widely ambiguous descriptions, such as “any aspect of the culture of the Republic as expressed in the oral traditions” (Marshall Islands, *Historic Preservation Act 1991*, Sec. 3.6), to more interpretive explanations.

Five State Parties utilise *cultural properties* to define *cultural heritage*, three of which also independently define *cultural property*. Papua New Guinea (PNG) however, is the only State to include *cultural heritage* within the definition of *cultural property*. PNG’s *National Cultural Property (Preservation) Act, 1965* (Sec. 1) specifies that:

Any property, movable or immovable, of particular importance to the cultural heritage of the country, and in particular (but without limiting the generality of the foregoing) includes–

- a. Any object, natural or artificial, used for, or made or adapted for use for, any purpose connected with the traditional cultural life of any of the peoples of the country, past or present; and
- b. Any mineral specimen or fossil or mammal remains of scientific or historic interest to the country; and
- c. Any other collection, object or thing, or any collection, object or thing of a class, declared to be national cultural property under Section 4; and
- d. Any collection of national cultural property.

Regionally, all of the State Parties to reference *cultural property* within the assessed domestic legislation also define the term, including the following qualified *property* derivatives: *historical property*, *immovable property*, *tangible cultural property*, *Aboriginal cultural property* and *national cultural property*. Among the definitions of *cultural property*, 9 SP employ *objects* (or an associated

derivative) when defining *cultural property*, and 3 SP (9%) in the region specifically include *objects* located underwater. By way of example, Cambodia’s *Sub-decree Respecting Implementation of Cultural Heritage Protection 2002* (Art. 4) states that *cultural property* refers to any artefact, moveable or immovable, belonging to a list of categories, including “archaeological material resulting from ground or underwater excavations... [and] properties of antiquity.” No State Party either defines or refers to *cultural patrimony* within the sampled legislation.

Table 10 Excerpts from Republic of Korea’s *Cultural Heritage Protection Amendment Act 2007* (Art. 2).

Categories of Korean cultural heritage
<ol style="list-style-type: none"> 1. Tangible cultural heritage: Tangible cultural products of great historical, artistic or academic value, such as buildings, records and books, ancient documents, paintings, sculpture and handicraft; and archaeological materials corresponding thereto; 2. Intangible cultural heritage: Intangible cultural products of great historical, artistic or academic value, such as drama, music, dance and craftsmanship; 3. Monuments: Those specified in the following items: <ol style="list-style-type: none"> a. Historic sites of great historical or academic value, such as temple sites, ancient tombs, shell mounds, ruins of fortresses, palace sites, pottery kiln sites, or relic-bearing strata and monumental facilities; b. Scenic places of great artistic value and outstanding scenic beauty; and c. Animals (including their habitats, breeding grounds and migratory areas), plants (including their natural habitats), minerals, caves, geological features, biological products and special natural phenomena which are of great historical, scenic or academic value; and 4. Folklore materials: Manners and customs regarding food, clothing and shelter, occupation, religious faiths, and annual rites, etc., and the clothing, implements, houses used therefore, which are indispensable for understanding changes in the life of the people.

Europe and North America

The UNESCO ‘Europe and North America’ region includes 52 States. Heritage-related legislation was analysed from 35 SP (67%) in the region (Figure 26). Of the included sampling, 27 SP (77%) are coastal States. One of the State Parties (Malta) within this sampling is also listed by UNESCO within the ‘Arab States’ region. Across the examined legislative texts from the ‘Europe and North America’ region, 28 SP (80%) define more than one cultural-identifying term; of these, *monuments* and *objects* are the most frequently defined (Figure 27).

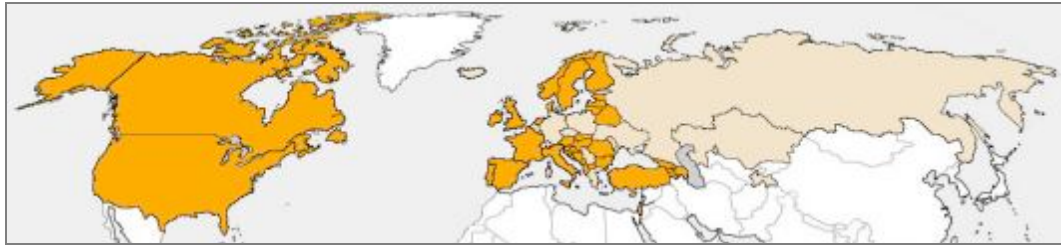


Figure 26 Map of State Parties included (in orange) in the ‘Europe and North America’ regional study. State Parties in tan-colour are excluded from analysis. Colourless States are not included within the region.

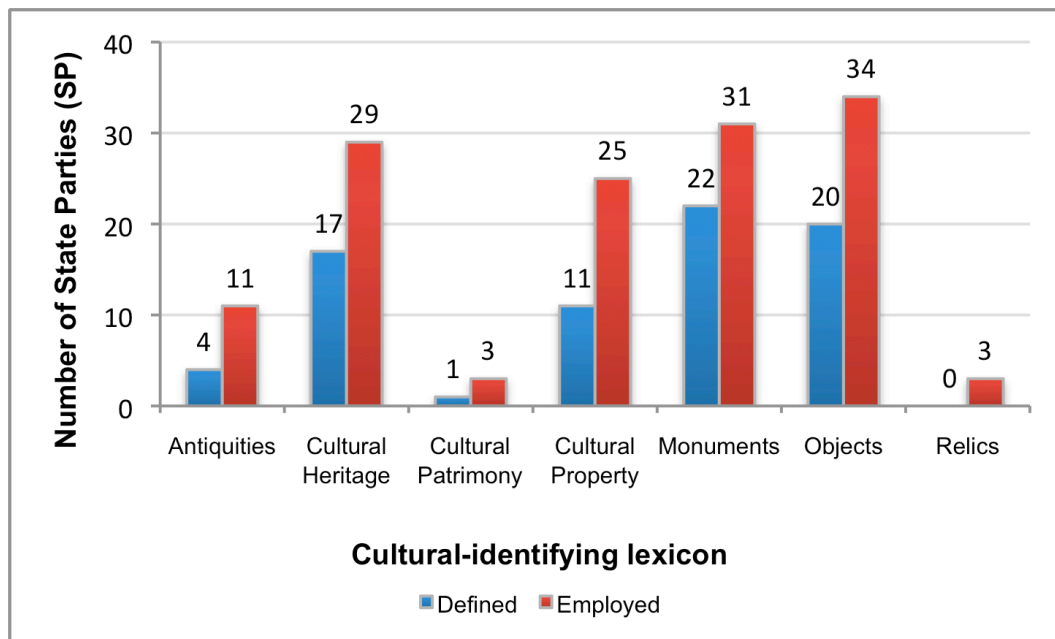


Figure 27 Distribution of defined cultural-identifying lexicon in the ‘Europe and North America’ region.

Ninety-seven percent of the regional sampling include *objects* or a qualify term – *archaeological objects*, *archaeological heritage objects*, *cultural objects*, *heritage objects*, *immovable objects*, *movable objects* and *objects of cultural heritage* – within assessed legislation. Nine State Parties (26%) include *objects* located underwater within the definition. *Archaeological items*, *finds*, *archaeological finds* and *ancient finds* are also employed within the region, however these terms are not included within this assessment. Similarly, *monuments*, or a derivative (*ancient monuments*, *national monuments*, *movable monuments*, *immovable monuments*, *cultural monuments*, *historical monuments* and *archaeological monuments*), are frequently employed in the region. Eight State Parties (23%) define two or more *monument* terms.

Of the States from the UNESCO ‘Europe and North America’ region to utilise *cultural heritage* within their legislative texts, totalling 83%, only 49% define the term. Bulgaria, for example, states that *cultural heritage* “refers to intangible and tangible movable and immovable heritage as a set of cultural values that bears a historical memory, national identity and have a scientific or cultural value” (*Cultural Heritage Act 2009*, Art. 2). In contrast, Azerbaijan’s *Law on the Protection of Historical and Cultural Monuments 1998* (Art. 2) specifies:

Historical and cultural heritage (hereinafter referred to as ‘heritage’) comprise archaeological and architectural sites, ethnographic, numismatic, epigraphic and anthropological materials, buildings related to certain historic events of persons, memorial places and subjects related to religious values of a nation.

Heritage may be movable (portable) and immovable (fixed). Movable heritage shall be protected in museums, archives, funds, exhibitions and other relevant places whereas fixed heritage, primarily archaeological and architectural sites shall be protected at the sites of their discovery or construction.

This text then proceeds to specifically define *archaeological heritage*, *architectural heritage*, *town-planning (urban) heritage*, *historic heritage* and *documentary heritage*. Azerbaijan’s 1998 Law is a good example of a more assertive legislation, in regards to its clarification of included terms. Other *heritage* identifiers defined by those State Parties sampled within the region include *movable heritage* and *national cultural goods*. Common terminology employed in conjunction with *cultural heritage* definitions can be examined in Appendix 1.

The phrasing and terminology employed within the definitions for *cultural heritage* often parallel those found in association with *cultural property*. Of the State Parties analysed from the ‘Europe and North America’ region, 71% reference *cultural property*, which includes *movable property*, *immovable property* and *maritime cultural property*. In its broadest definition, *cultural property* is used to indicate “movable or immovable property forming part of the cultural heritage” (Malta, *Cap. 445 of 2002*, Sec. 2). Italy’s *Code for Cultural and Landscape Heritage 2004* (Art. 10) describes *cultural property* more specifically as:

1. Cultural property consists in immovable and movable things belonging to the State, the Regions, other territorial government bodies, as well as any other public body and institution, and to private non-profit associations, which possess artistic, historical, archaeological or ethno-anthropological interest.

2. Cultural property also includes:
 - a. The collections of museums, picture galleries, art galleries and other exhibition venues of the State, the Regions, other territorial government bodies, as well as any other government body and institute;
 - b. The archives and single documents of the State, the Regions, other territorial government bodies, as well as of any other government body and institute;
 - c. The book collections of libraries of the State, Regions, other territorial government bodies, as well as any other government body and institute.
3. Cultural property shall also include the following (Table 11).

Five States equate underwater locations with *cultural property*, however, France is the only State to employ and define *maritime cultural property*: “sites, wrecks, remains or in general any property which represents a prehistoric or historic interest, [and] is situated in the maritime public domain or at the bottom of the sea in the adjacent area” (*National Heritage Code 2004*, Art. L532-1).

Table 11 Italy’s Code for Cultural and Landscape Heritage 2004, Art. 10.

Declared <i>cultural property</i> includes:
<ol style="list-style-type: none"> a. The things which pertain to paleontology, prehistory and primitive civilizations; b. Things of numismatic interest; c. Manuscripts, autographs, papers, incunabula, as well as books, prints and engravings with their relative matrixes, of a rare or precious nature; d. Geographical maps and musical scores of a rare and precious nature; e. Photographs, with their relative negatives and matrixes, cinematographic films and audio-visual supports in general, of a rare and precious nature; f. Villas, parks and gardens possessing artistic or historical interest; g. Public squares, streets, roads and other outdoor urban spaces of artistic or historical interest; h. Mineral sites of historical or ethno-anthropological interest; i. Ships and floats possessing artistic, historical or ethno-anthropological interest; j. Types of rural architecture possessing historical or ethno-anthropological interest as testimony to the rural economy tradition.

Of the 35 States assessed in the sampling, France is the only State to define *patrimony*; the term described however, is not *cultural patrimony* but rather *archaeological patrimony*. The *patrimony* derivative is presented as:

All vestiges and other traces of the existence of humanity, whose safeguarding and study, particularly through excavations and discoveries, may permit tracing the development of human history and its relationship with the natural environment constitute the archaeological patrimony (France, *National Heritage Code 2004*, Art. L510-1).

Only two other States in the region utilise *patrimony* within assessed legislative texts.

In addition to European domestic legislation, those State Parties associated with the European Union are also required to comply with EU Council

Resolutions, Directives and Recommendations. These documents are examined for their reference of identified terms of interest, however they are not included in the regional quantitative analysis because as they are not State-specific. Within the aforementioned Council documents, *archaeological heritage*, *cultural heritage* and *cultural object* are defined. Many of the EU State Parties have domestic legislation specifically relating to, or referencing the EU Council texts – these latter State-specific laws are included within the analysis.

Latin America and the Caribbean

The ‘Latin America and the Caribbean’ region, as defined by UNESCO, comprises 33 State Parties; 29 of these States (88%) are included within this study. Only 2 of the sample States are not coastal – Paraguay and Bolivia (Figure 28). Distribution of the defined cultural-identifying lexicon within the region is outlined in Figure 29. Of the State Parties assessed, 16 SP (55%) define more than one cultural-identifying term; *monuments* and *cultural property* being the two most commonly referenced by a single state. Similar to data from the previous UNESCO regions, *objects* is the most commonly referenced cultural-identifier, however, it has a lower percentage of States defining the term. Although not as frequently identified, more States defined *monuments* than any other identifying-term, including *historical monuments*, *national monuments*, *ancient monuments*, *prehistoric monuments* and *archaeological monuments*.

Sixty-two percent of the sample States analysed include *cultural property* within their associated texts. *Property* is defined by inclusion of *immovable property*, *movable property*, *national archaeological property*, *national cultural property*, *personal cultural property*, *real cultural property* and *tangible property*. *Tangible property*, for example, is identified as “the expressions of the cultures of indigenous peoples and communities with material manifestations” (Venezuela, *Law No. 39.115 of 2009*, Art. 9.3). A broader definition for *cultural property* used by Costa Rica includes:



Figure 28 Map of State Parties included (in orange) in the ‘Latin America and the Caribbean’ regional study. State Parties in tan-colour are excluded from analysis. Colourless States are not included within the region.

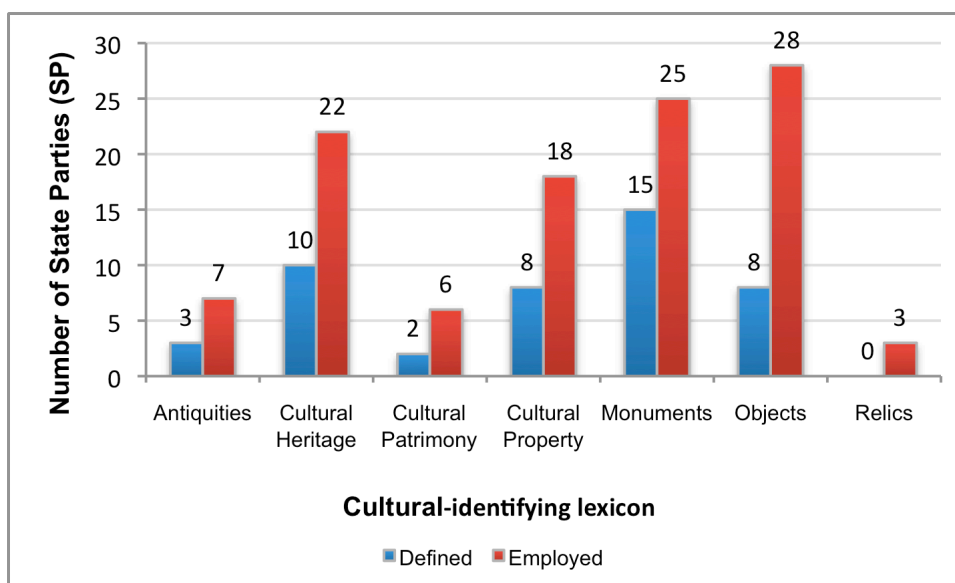


Figure 29 ‘Latin America and the Caribbean’ regional distribution of cultural-identifying lexicon.

Movable and/or real [immovable] property produced by indigenous cultures that preceded or were contemporary with the establishment of the Hispanic culture in the national territory, as well as human remains, flora and fauna related to those cultures (*law No. 6703 of 1981*, Art. 1).

More specifically, *cultural property* is considered materials “expressly recognized as such by the Ministry, whether it be anthropological, paleontological, archaeological, prehistoric, historic, ethnographic, religious, artistic, technical, scientific, philosophic, bibliographic, or documentary in nature” (El Salvador, *Decree No. 513 of 1993*, Art. 2). Within legislation from El Salvador, this classification further extends to:

1. The Nahuatl language and the other indigenous languages, as well as the traditions and customs;
2. Techniques and traditional craftsmanship; and
3. Contemporary plastic, musical, dance, theatrical and literary productions and any other cultural property that by the Ministry's criteria is a part of the National Treasure of El Salvador (*Decree No. 513 of 1993*, Art. 3).

In comparison, *cultural heritage* is employed by 76% of the sampled region, however, only Peru and Colombia (7%) specifically define *underwater cultural heritage* (see subsection – Swimming with the fishes ‘Latin America and the Caribbean’ – below for the definition). *Archaeological heritage*, *historical heritage*, *immovable heritage*, *indigenous cultural heritage* and *national heritage* are also defined by various State Parties. *Cultural heritage*, as defined in Brazil’s *Constitution* (1988, Art. 216), consists of “the assets of a material and immaterial nature, taken individually or as a whole, which bear [sic] reference to the identity, action and memory of the various groups” and include:

1. Forms of expression;
2. Ways of creating, making and living;
3. Scientific, artistic and technological creations;
4. Works, objects, documents, buildings and other spaces intended for artistic and cultural expressions; and
5. Urban complexes and sites of historical, natural, artistic, archaeological, paleontological, ecological and scientific value.

From the examined ‘Latin America and the Caribbean’ region, 21% reference *cultural patrimony*, however Peru and Ecuador define the term. Peru cites “archaeological fields and remains, constructions, monuments, collections, sites, art objects, tokens of historical value, expressly declared to be cultural assets and those provisionally presumed to be the same...whether they are privately or publicly owned” by way of defining *cultural patrimony* (*Constitution 1979*, Art. 21). More assertively, Ecuador’s *Law of Cultural Patrimony, 2004* (Art. 7) expands the definition to identify ten specified categories of materials

included within relevant State *cultural patrimony*. No State Parties within the region define *relics*, however 9% of the region – the Dominican Republic, Paraguay and Venezuela – utilise the term within their heritage legislation.

Identified managerial lexicon

Results for the global sampling identify that 17% of assessed States define *conservation*, 8% define *preservation* and 11% define *protection* (Figure 30) (Appendix 4). None of heritage-inclusive domestic legislation reviewed in this study defines an *in situ* managerial term. In total, however, 14 SP employ either *in situ* when discussing *conservation* or *preservation* or imply *in situ* management by describing that cultural-identified materials should be left in place (Figure 31). Notably, none of the laws from the 133 sample-States reference *in situ* protection. Given that the analysed legislative texts are aimed at the protection and management of culturally significant heritage materials, it is of significance to note the lack of specified detail regarding acceptable, prescribed methods to do so.

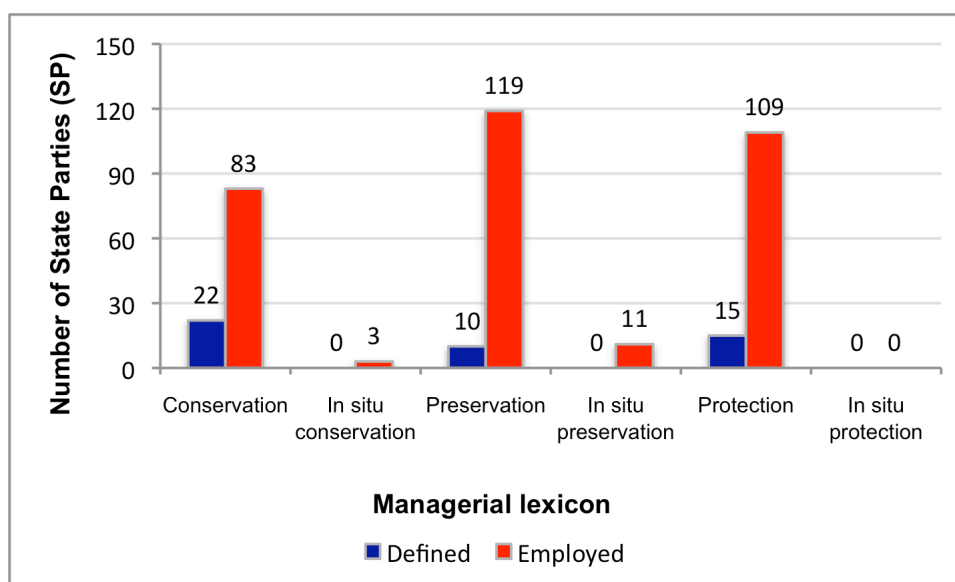


Figure 30 Global reference to, and definition of managerial lexicon and *in situ* derivatives

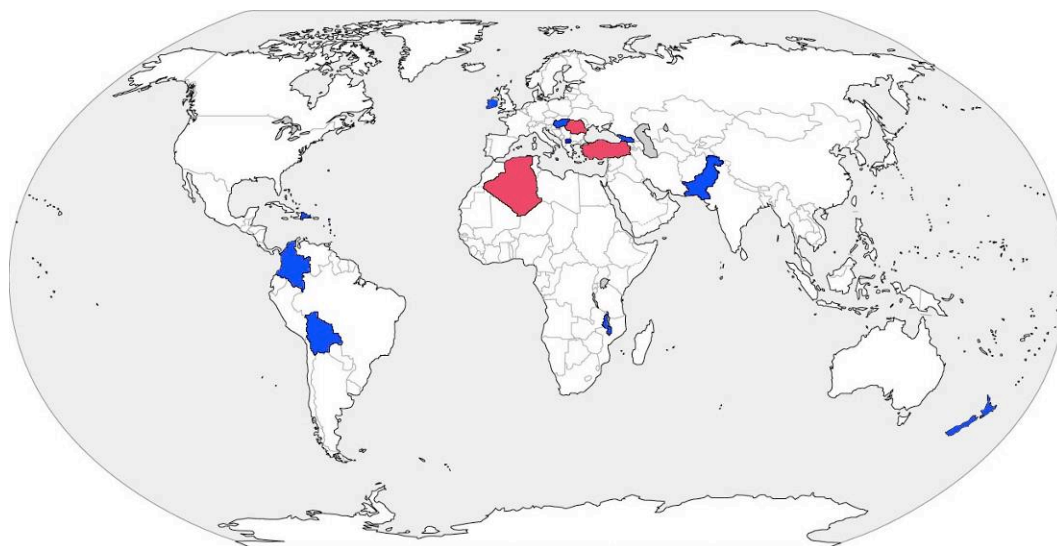


Figure 31 Map of State Parties employing *in situ* conservation (in red) or *in situ* preservation (in blue).

In a broad context, *conservation* is the “processes of looking after a place so as to retain its cultural significance” (ICOMOS Charter 1999, Art. 1.4). *Preservation*, in a cultural heritage context, maintains “the fabric of a place in its existing state” (ICOMOS Charter 1999, Art. 1.4), slows deterioration, and includes the:

Combination of study, expertise and physical intervention which aims at conserving every element of this heritage in the best possible condition. This actively involves proper maintenance, consolidation, repair, safeguarding and restoration, to prevent the deterioration and, at worst, the destruction of the national heritage (ICOMOS Charter 1982, Definition of Heritage and Preservation).

Protection, however, has two interpretations: one is the establishment of legislation to prevent human interference, and the other relates to “a physical or other *in situ* intervention that results in the slowing, halting or reversal of a process that is believed to be having a negative impact on an archaeological site” (Bowens 2009, p. 167). As will be demonstrated, these abovementioned definitions for the three managerial terms of interest differ by varying degrees to those observed during the global assessment. The data relating the managerial lexicon across the five UNESCO-delineated regions is presented in the corresponding sub-sections below.

Africa

Out of 28 State Parties assessed within the ‘Africa’ region, 46% reference *conservation*, 82% identify *preservation* and 68% include *protection* (Figure 32). Definitions for the managerial lexicon within the region are, however, limited. *Conservation* definitions from the sampled legislation are reproduced in Table 12. Commonly referenced terms within the description of *conservation* include *preservation*, *protection* and *maintenance*.

Although *maintenance* is not an identified managerial term of interest, it is applied by more than one State in association with the fencing, repairing, restoring and covering of the antiquity, monument, relic, or heritage (Ghana, *National Museum Decree, 1969*; Kenya, *National Museums and Heritage Act, 2006*; Nigeria, *National Commission for Museums and Monuments Decree, 1979*). *Covering* is of interest in regards to UCH management, given that the current international trend encourages *in situ* preservation, and as discussed in Chapter 4, includes reburial. Whether the term *covering* is considered to be synonymous with reburial – as an *in situ* preservation method – is unclear at this time. Ghana, Kenya, Malawi and Nigeria include *covering* within the definition of *maintenance*. Tanzania is the only other State to reference the term *covering*, which is expressed within the definition of *monument*.

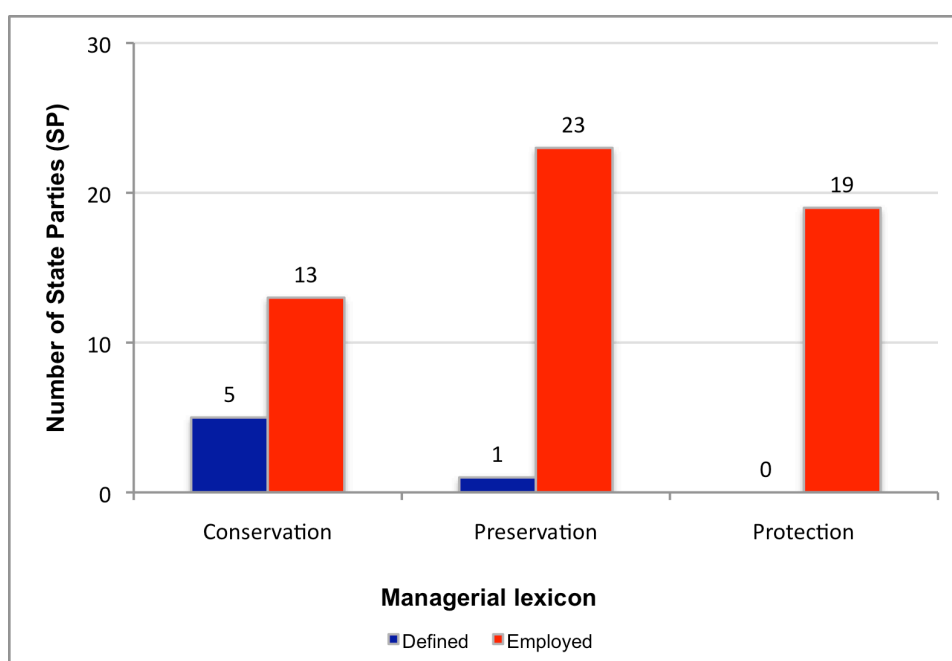


Figure 32 Number of State Parties in the ‘Africa’ region to define and employ managerial lexicon.

Table 12 ‘Africa’ region State Party definitions of *conservation* (bold emphasis added).

State Party	Legislation	<i>Conservation</i>
Ethiopia	<i>Cultural Heritage Proclamation, 2000, Sec. 3.10</i>	A general protection and preservation activity carried out on Cultural Heritage without changing its antique content.
Malawi	<i>Monuments and Relics Act, 1990, Sec. 2</i>	Measures taken to prevent destruction, deterioration or loss of cultural and natural heritage .
Namibia	<i>National Heritage Act, 2004, Sec. 1</i>	The retention of the heritage significance of a place or object ; and [] the protection , maintenance, preservation , restoration, reconstruction or sustainable use of a place or object ’
South Africa	<i>National Heritage Resources Act, 1999, Sec. 2</i>	Protection , maintenance, preservation and sustainable use of places or objects as to safeguard their cultural significance
Zambia	<i>National Heritage Conservation Commission Act, 1989, Sec. 2</i>	The professional care of any heritage so that it shall continue to play a useful role for present and future generations

Regionally, 3 SP utilise both *preservation* and *protection* in their definition of *conservation*, whilst an additional three States employ the terms *preservation* and *conservation* within the same context. Both Algeria and Burkina Faso use the phrasing ‘conservation or preservation’ in their heritage legislation, implying a difference but omitting an explanation of the implied discrepancy between terms. Algeria references the phrase in regards to the Minister of Arts executing “works of consolidation or repair or maintenance that he deems indispensable to the overall conservation or preservation of classified sites or monuments no matter their owners” (*Ordinance No. 67-291 of 1967, Art. 43*). Burkina Faso, however, references the phrase within the definition for *historic monuments* (*Law 85-04 of 1985, Art. 1*). Furthermore, Zambia’s *National Heritage Conservation Commission Act, 1989* (Part II.8.1) implies *conservation* within the legislative nomenclature but states that “the functions of the Commission shall be to conserve the historical, natural and cultural heritage of Zambia by preservation, restoration, rehabilitation, reconstruction, adaptive use, good management, or any other means;” no further definition for *conservation* is provided.

Out of 28 State Parties included in the regional sampling, all of the States except Cote d’Ivoire, Cameroon, Mali, Senegal and Sudan have domestic legislation inclusive of *preservation*. These listed States have, however, all signed onto an African Union national charter, either the *Cultural Charter for Africa*,

1976 (Africa Charter 1976) or the *Charter for African Renaissance, 2006* (Africa Charter 2006), both of which include *preservation* within its text. See Appendix 1 for signatory State Parties to both Charters.

The *Cultural Charter for Africa, 1976* (Art. 1.b) aims to establish a common resolve among African nations towards the promotion of African cultural development, and encourages “the rehabilitation, restoration, preservation and promotion of the African cultural heritage.” In 2006, the *Charter* was replaced with the *Charter for African Renaissance*. Of the 17 State Parties in this study to ratify the 1976 Charter, only nine signed onto the 2006 document. Cote d’Ivoire, Gambia and Sierra Leone also signed onto the 2006 Charter despite not ratifying the earlier text. Similar to the previous charter, the 2006 text aims to “preserve and promote the African cultural heritage through preservation, restoration and rehabilitation” (Africa 2006, Art. 3.d). Although the 1976 Charter was replaced, 10 States still adhere to the former Charter. Botswana, Lesotho, Morocco, Namibia, South Africa and Swaziland have not signed or ratified either of the African Union charters; Morocco, while included within the UNESCO-delineated ‘Africa’ region, is not listed as a member of the African Union.

Of the 23 State Parties inclusive of *preservation* within their domestic heritage laws, Malawi is the only State to define the term. In this context, *preservation* is regarded as “the taking of such actions, including salvage, as are designed to record and maintain the cultural and natural heritage” (Malawi, *Monuments and Relics Act, 1990*, Part 1.2). Malawi does not independently employ the term in isolation within the text; instead, *preservation* is utilised in conjunction with protection and *in situ* preservation. Out of the 28 State Parties assessed in the region, Malawi is again the only State to reference *in situ* preservation, in that “any demolition, alteration, or extension of” a listed monument (*Monuments and Relics Act 1990*, Part V.24.1), which must be approved by the Minister, can include “preservation of the features *in situ* or as salvage” (Part V.24.3.a). The only other State to legislatively acknowledge *in situ* management is Algeria, in which “the owners of the edifices in which the cultural goods were discovered are indemnified for any constraints ensuing from the *in situ* conservation of said cultural goods” (*Law 98-04 of 1998*, Art. 77). Unfortunately, the reference does not relate to heritage management. Neither *in situ* preservation nor *in situ* conservation is defined beyond their textual reference.

Of the remaining 22 State Parties, Egypt, Gambia, Mauritius, Seychelles and Zimbabwe are the only States to utilise *preservation* without any additional supporting managerial lexicon such as *conservation*, *protection* or *maintenance*. Within the domestic laws of these five States, *preservation* is utilised in a range of contexts, from a financial perspective to an obligation both for and by the people. None of the five States listed above specifically discuss acceptable methods or the extent of *preservation* within the context of their legislation. More commonly, *preservation* is presented as a qualifier for cultural heritage and property consisting of monuments, relics and antiquities in conjunction with the term *protection*; 12 States (43%) in the region utilise *preservation* and *protection* together.

Within the ‘Africa’ regional sampling, 68% employ *protection* within their cultural legislation, while no State defines the term. Other common vernacular associations with *protection* include *safeguarding* and *maintenance*. The application of *protection* within domestic legislation ranges from a mention in the preamble to inclusion in the aim of the law. For example, the ‘Preamble’ in Lesotho’s *Historical Monuments, Relics, Fauna and Flora Act, 1967* expresses that the Act is “to provide for the preservation and protection of natural and historical monuments, relics, antiques, fauna and flora for connected matters,” but the remaining text excludes reference to *protection*. Conversely, one of the objectives for Algeria’s *Law 98-04 of 1998* (Art. 1) is to “enact general rules for the protection’ of cultural patrimony of the nation,” which qualify how to classify movable and immovable property and concerns for protection. The 1998 legislation continues by stating that “classification is an authoritative means of protection” (*Law 98-04 of 1998*, Art. 16). Botswana’s *Monuments and Relics Act 2001*, Cote d’Ivoire’s *Law 87-806 of 1987*, Mali’s *Law No. 85-40 of 1985* and Morocco’s *Law No. 22-80 of 1980* provide similar classification criteria.

Arab States

The associated State Parties within the UNESCO-delineated ‘Arab States’ region generally exclude the definitions of managerial terminology from domestic legislation (Figure 33). Of the 13 SP assessed in the region, Malta is the only State to define a managerial term. *Conservation* is defined as:

Any activity required to maximise the endurance or minimise the deterioration of any cultural property as far as possible, and includes examining, testing, treating, recording and preserving any such cultural property or any part thereof (Malta, *Cap 445 of 2002*, Sec. 2).

The Malta also defines the terms ‘integrated conservation’ as:

The whole range of measures aimed at ensuring the perpetuation of the cultural heritage, its maintenance as part of an appropriate environment, whether man-made or natural, its utilization and its adaptation to the needs of society. Such an objective is to be achieved through the revitalization and integration of cultural heritage within the physical environment of present-day society and by assigning a social function to such cultural heritage compatible with its dignity and its setting (*Cap 445 of 2002*, Sec. 2).

Although *preservation* and *protection* remain undefined, *restoration* is presented in relation to *conservation* as:

A highly specialized activity to conserve the integrity of cultural heritage, and to reveal its cultural values and to improve the legibility of its original state, form and design, within the limits of still existing material. Such activity must be based on a critical and historical process of evaluation and not on conjecture (Malta, *Cap 445 of 2002*, Sec. 2).

Of the other seven States to utilise *conservation*, the lexicon commonly indicates the governing authority and the people have an obligation to *conserve* identified cultural materials of value. The *conservation* references are frequently presented in association with *preservation* or *maintenance*.

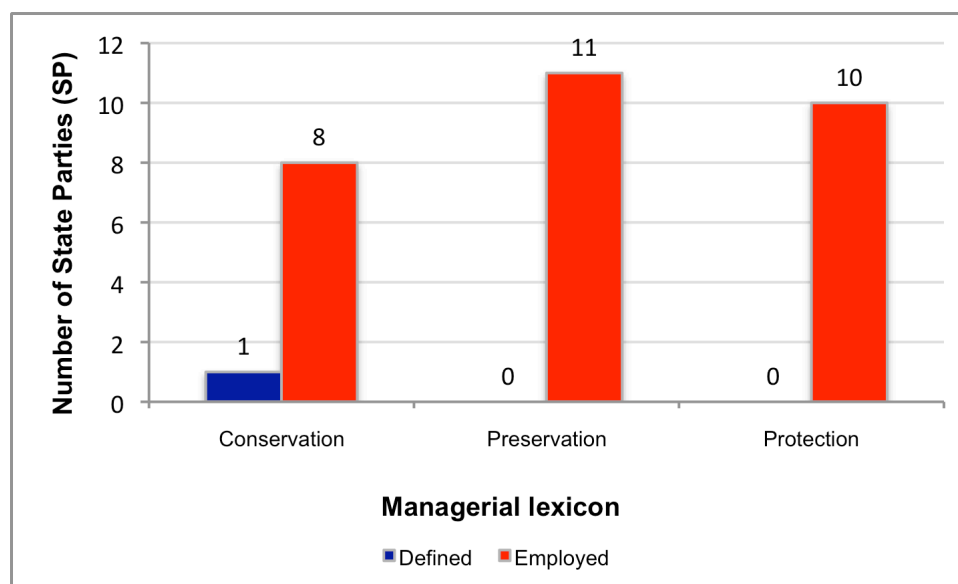


Figure 33 Number of State Parties in the ‘Arab States’ region to define and employ managerial lexicon.

In contrast to the ‘Africa’ region, *covering* is not included in any of the assessed regional domestic legislation from the ‘Arab States’ region. This

includes the 4 SP – Algeria, Egypt, Morocco and Sudan – that are included in both the ‘Africa’ and ‘Arab States’ regions. Comparatively, Algeria is the only State Party in the ‘Arab States’ region to include *in situ* conservation within its legislation (see above subsection for inclusion).

Although no State defines *preservation*, 85% incorporate the term within their legislation. The terminology most frequently associated with *preservation* includes *antiquities*, *cultural property* and *protection*. In regards to the *in situ* derivative, Malta is the only State to reference *in situ* preservation, and advises that:

The finder shall be bound to provide for the preservation of the antiquities so discovered, and to keep the same intact and in situ, pending an inspection thereof by the Director of the Museum or any other officer debuted by him for that purpose, within the time of six working days (*Antiquities Protection Act 1925*, Sec. 12.2).

Regionally, Morocco is the only State to identify *preservation* in relation to the underwater environment.

Among the 13 States assessed in the region, 77% employ the term *protection* or an associated derivative (i.e. protect or protecting) within the domestic legislation. Frequently, *protection* is referenced in association with *safeguarding*, *maintenance* and *conservation*. None of the State Parties include underwater-located cultural materials when directly discussing *protection*.

Asia and the Pacific

Of the 34 State Parties assessed in the ‘Asia and the Pacific’ region sampling, 59% reference *conservation* within their legislation, 76% reference *preservation* and 68% reference *protection* (Figure 34). Within the legislative texts analysed, however, a significant number of States omit a definition for the terminology. Definitions of *conservation* commonly include the following terms: *protection*, *maintenance*, *preservation* and *restoration*, or a combination of the aforementioned (Table 13). Of the 20 States utilising *conservation*, Turkey is the only State Party to specify *in situ* conservation, asserting that:

Immovable cultural property and its components shall be conserved in-situ. However, if transporting the immovable cultural property to another location is mandatory or necessary due to its characteristics, the Ministry of Culture and Tourism can undertake the transport with the consent of the Regional Conservation Council by taking the necessary security measures (*Law on the Conservation of Cultural and National Property 1983*, Art. 20).

Although *preservation* is the most frequently employed managerial term in the sample of this region, it is not the most commonly defined. See Table 14 for the definitions of *preservation* within the ‘Asia and the Pacific’ region; none of the definitions specify UCH or *in situ* methods. Australia, Indonesia and the Marshall Islands are the only States to legislatively associate *preservation* with UCH. Of the 26 State Parties to include this term, 15 SP associate the lexicon with *protection*; *conservation*, *maintenance* and *covering* are also commonly utilised in conjunction with *protection*.

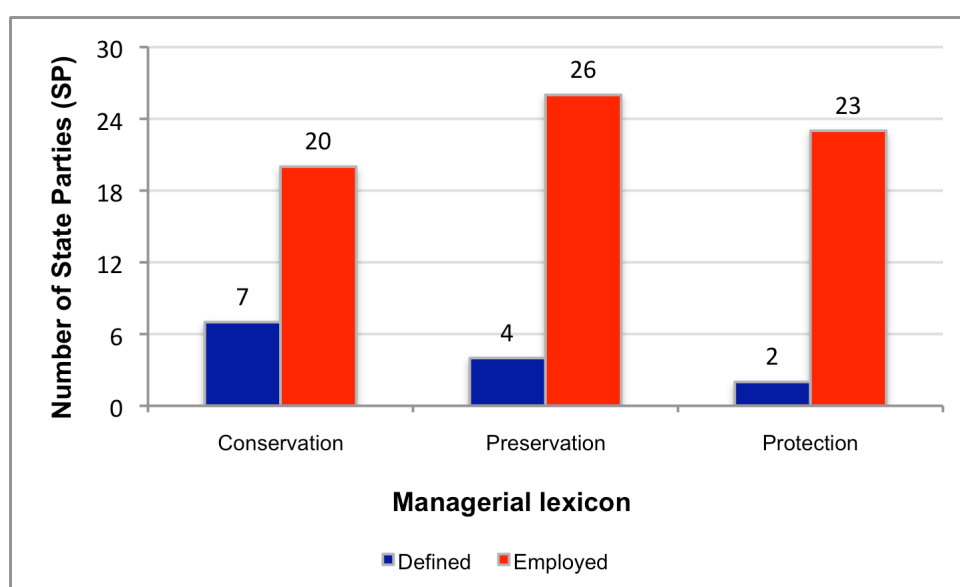


Figure 34 Number of State Parties in the ‘Asia and the Pacific’ region to define and employ managerial lexicon.

Indeed, 29% (10 SP) of the sample from the region incorporate the term *covering* within assessed laws. Throughout the region, this term is included within the definitions of *monument*, *maintenance*, *objects*, *archaeological sites* and *stabilisation*. Pakistan is the only State to associate *covering* with UCH (*Antiquities Act 1975*). What specifically constitutes *covering*, or whether it can be directly correlated with reburial of cultural materials, is not apparent, based on the application of the term within sampled domestic legislation.

Table 13 ‘Asia and the Pacific’ State Party definitions of *conservation* (bold emphasis added).

State Party	Legislation	<i>Conservation</i>
Australia	<i>Australian Heritage Commission Act 1995</i> , Sec. 3.1	In relation to the national estate, includes protection ; maintenance and preservation , and "conserve" has a corresponding meaning.
Lao, People's Democratic Republic of	<i>Law on National Heritage 2005</i> , Art. 3.10	Preserving the cultural, historical or natural value, the trails, [and] the colours of national heritage against loss or deterioration.
Malaysia	<i>National Heritage Act, 2005</i> , Sec. 2.1	Includes preservation , restoration, reconstruction, rehabilitation and adaptation or any combination.
New Zealand	<i>Historic Places Act 1993</i> , Sec. 2	Includes the processes of preserving , maintaining, and restoring historic places and historic areas so as to safeguard their historical and cultural values.
Philippines	<i>National Cultural Heritage Act 2009</i> , Art. II, Sec. 3.i	Refers to all the processes and measures of maintaining the cultural significance of a cultural property, including but not limited to, preservation , restoration, reconstruction, protection , adaptation or any combination thereof.
Turkey	<i>Law on the Conservation of Cultural and National Property 1983</i> , Art. 3.a.4	Mean all conservation , maintenance, restoration works and function modification of immovable cultural and natural property and the conservation , maintenance, repair and restoration works of movable property.
Uzbekistan	<i>Law on Preservation and Utilization of Objects of Cultural Heritage, 2001</i> , Art. 20	Complex exploratory, design and manufacturing activities spent in the purposes of preservation of site of a cultural heritage in a present view and preventing of an aggravation of symptoms of object.

Table 14 ‘Asia and the Pacific’ State Party definitions of *preservation* (bold emphasis added).

State Party	Legislation	<i>Preservation</i>
Indonesia	<i>Law No. 11 of 2010</i> , Art. 1.22	Is a dynamic effort to maintain the existence and value of heritage in a way to protect , develop, and exploit it.
Marshall Islands	<i>Historic Preservation Act, 1991</i> , Sec. 3.27	Means the identification, evaluation, recording, documentation, curation, acquisition, protection , management, rehabilitation, restoration, stabilization, maintenance, or reconstruction of a cultural and historic property, or any combination of the foregoing activities.
Malaysia	<i>National Heritage Act, 2005</i> , Sec. 2	Aiming to halt further deterioration, decay or a state of dilapidation and providing structural safety and well being but does not contemplate significant rebuilding and includes— a. Techniques of arresting or slowing the process of deterioration, decay or state of dilapidation of an item or structure; b. Improvement of structural conditions to make a structure safe, habitable, or otherwise useful; and c. Normal maintenance and minor repairs that do not change or adversely affect the fabric or historic appearance of a structure.
Nepal	<i>Ancient Monument Preservation Act 1956</i> , Sec. 2	The work such as sweeping, covering, repairing, cleaning, etc. done to keep the monument in its original form.

Sixty-eight percent of the States assessed reference *protection*, with only 3 SP (9%) identifying the term in association with UCH. Of these, the People’s Democratic Republic of Lao and Indonesia are the only two States (6%) to define the lexicon. The former defines the term as “the protection from theft, destruction, burning, natural causes of damage or illegal uses” (People’s Democratic Republic of Lao, *National Heritage Act, 2005*, Art. 3.9). Indonesia, however, describes *protection* as “an effort to prevent and control damage, destruction, or obliteration by rescue, safety, zoning, maintenance, and restoration of cultural heritage” (*Law No. 11 of 2010*, Art. 1.23).

Europe and North America

The assessment of domestic heritage-inclusive legislation from 35 State Parties within UNESCO’s ‘Europe and North America’ region demonstrates that 77% reference *conservation*, 100% reference *preservation* and 97% reference *protection* (Figure 35). Similar to the previous regions, very few States define the managerial lexicon in comparison to those utilising the terms. See Table 15 for the definitions of *conservation* in the region. Of the 10 SP to define *conservation*, 3 SP (9%) – France, Ireland and Turkey – reference UCH, and two States (6%) – Romania and Turkey – specifically include *in situ* conservation within the assessed legislation. Romania’s *Law No. 182 of 2000* (Art. 3.3.h) refers to

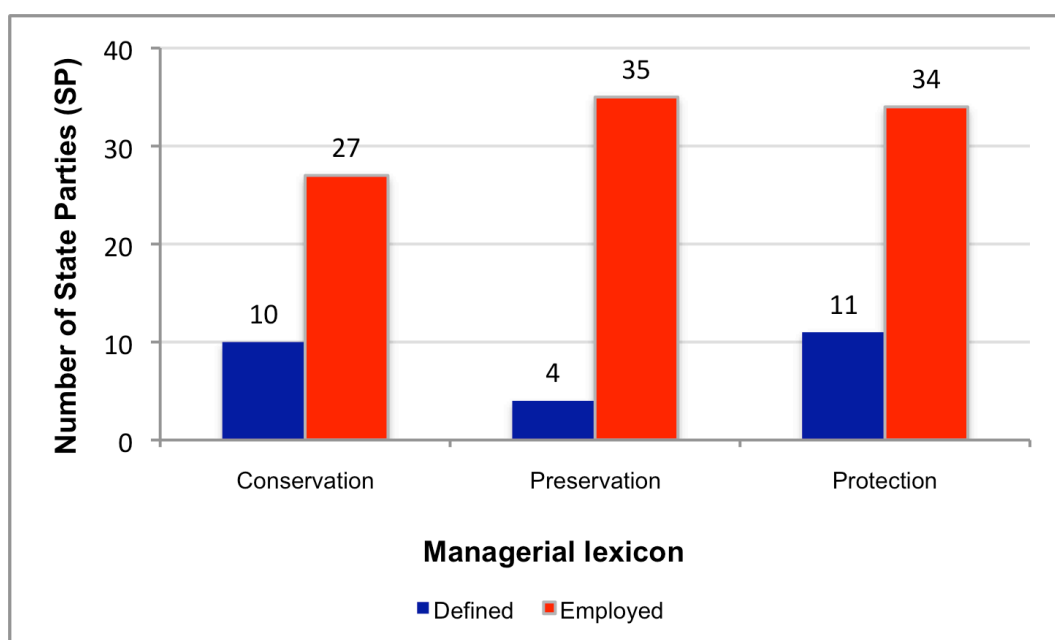


Figure 35 Number of State Parties in the ‘Europe and North America’ region to define and employ managerial lexicon.

ethnographic items of interest deemed to have “exceptional value such as...traditional buildings that are not conserved *in situ* or items resulting from the dismemberment of this.” *In situ* conservation, however, is not cited again within the text (see the above subsection for the application of *in situ* conservation within the context of Turkey). The 1992 EU *Convention on the Protection of Archaeological Heritage* (Art. 4.2) also references *in situ* conservation, within the context of *protection*, in that each State Party should “implement measures for the physical protection” through “the conservation and maintenance of the archaeological heritage, preferably *in situ*.”

Excluding EU conventions, resolutions and recommendations, 26% (9 SP) of the ‘Europe and North America’ region refer to *covering* within their legislative texts. Across the sampling, 4 SP utilise the term *covering* when discussing *preservation*, 6 SP in relation to *monuments* and 1 SP within the definition of *maintenance*. The 1992 EU Convention implies that the method of ‘covering’ may be employed in regards to *in situ* management, but does not explicitly reference the term. Instead, the convention sets out that heritage materials should not be “uncovered or left exposed during or after excavation without provision being made for their proper preservation, conservation and management” (EU Convention 1992, Art. 3.i.b)

All of the State Parties analysed within this UNESCO region legislatively reference *preservation*. However, only 11% define the term (Table 16). Twelve of the 35 State Parties to employ *preservation* also reference *protection* in the same article; *maintenance*, *conservation* and *restoration* are also identified in association with *preservation*. Of the 35 State Parties assessed, 6 SP (17%) reference UCH in conjunction with *preservation*, and 5 SP (14%) specify or imply *in situ* preservation (Table 17). Although not specific to *preservation*, France’s *Law No. 89-874 of 1 December 1989* (Art. 3) establishes that “any person discovering a maritime cultural asset shall leave it *in situ* and shall not cause damage to it.”

All of the State Parties in the ‘Europe and North America’ region – with the exception of Cyprus – include *protection* within the assessed legislation; of these, only 5 SP reference UCH in association with the term. See Table 18 for the defined lexicon across the region. Terminology frequently referenced in association with *protection* include: *preservation*, *maintenance* and *restoration*.

Table 15 Definitions for *Conservation* in the ‘Europe and North America’ region (bold emphasis added).

State Party	Legislation	<i>Conservation</i>
Azerbaijan	<i>Law on the Protection of Historical and Cultural Monuments 1998</i> , Art. 25	Implies reliable protective covering of open surfaces with a view to protecting them from mechanical, physical and chemical impact of the environment, protective measures for under-ground water impact, physical protection and fencing.
Belarus	<i>Law on the Protection of Historical and Cultural Heritage 1992</i> , Art. 43.3	Means the series of activities for the temporary or long-term preservation of the today's condition of the objects.
Estonia	<i>Heritage Conservation Act, amended 2011</i> , Sec. 24.3	A complex of works which prevents the further destruction of a monument or structure located on a heritage conservation area by technically securing its structural and decorative elements by not altering them and preserving the historical layers.
Georgia	<i>Law on Cultural Heritage Protection 2007</i> , Art. 3.w	Unity of measures implemented with the aim of preserving a listed property in its current shape or preventing irrevocable alterations. Preventive conservation of a listed property, entailing only initial, urgent and temporary measures before the rehabilitation of a listed property, is also admissible. The methodology of preventive conservation shall envisage the removal of the used material and facilities without damaging a listed property;
Italy	<i>Code for Cultural and Landscape Heritage 2004</i> , Art. 29.1	Is ensured by means of a consistent, co-ordinated and programmed activity of study, prevention, maintenance and restoration.
Lithuania	<i>Law on Protection of Movable Cultural Property 1996</i> , Art. 2.6	Means research-based activities aimed at stopping a destructive or harmful impact on an item of movable cultural property and reinforcing authentic features as well as protecting the item of movable cultural property against natural deterioration.
Macedonia, the Former Yugoslav Republic of	<i>Law on the Protection of Cultural Heritage 2005</i> , Art. 11.10	Means the procedure and the method of preservation of the protected good in genuine condition, i.e. in a condition that it was found without adding the elements, which were destroyed, or missing.
Malta	<i>Cap. 445 of 2002</i> , Sec. 2	Means any activity required to maximise the endurance or minimise the deterioration of any cultural property as far as possible, and includes examining, testing, treating, recording and preserving any such cultural property or any part thereof.
Slovenia	<i>Cultural Heritage Protection Act 2008</i> , Art. 3.5	Means a set of measures aimed at ensuring the continued existence and enrichment of heritage, as well as its maintenance, restoration, regeneration, use and revitalisation.
Turkey	<i>Law on the Conservation of Cultural and National Property 1983</i> , Art. 3.a4	Mean all conservation , maintenance, restoration works and function modification of immovable cultural and natural property and the conservation , maintenance, repair and restoration works of movable property.

Table 16 ‘Europe and North America’ State Party definitions for *preservation* (bold emphasis added).

State Party	Legislation	<i>Preservation</i>
Bulgaria	<i>Cultural Heritage Act 2009</i> , Art. 8.1	A systematic process of inquiry identification, documentation, conservation , restoration and socialization cultural heritage, which includes the training of specialists in the field.
Croatia	<i>Law on the Protection and Preservation of Cultural Goods 1999</i> , Art. 6.2	The implementation of measures for protection and preservation for the extension in the duration of the monument characteristics of the cultural good.
Macedonia, the Former Yugoslav Republic of	<i>Law on the Protection of Cultural Heritage 2005</i> , Art. 11.8	The systematic supervision of the protected goods condition, their covering, locating, storing, packaging and other type of care, regular handling, physically and technical saving against unregistered access or unauthorized use and harmful activities of any type, and insurance against risks that they were exposed on or could be exposed.
Slovenia	<i>Cultural Heritage Protection Act 2008</i> , Art. 3.1.42	Such treatment of the heritage which, by regular maintenance and restoration, conserves its heritage value and permits its continued use at least to a minimum extent.

Table 17 ‘Europe and North America’ regional references to *in situ* preservation (bold emphasis added).

State Party	Legislation	<i>In situ</i> Preservation references in text
France	<i>Law No. 89-874 of 1 December 1989</i> , Art. 3	Any person discovering a maritime cultural asset shall leave it <i>in situ</i> and shall not cause damage to it.
Georgia	<i>Law on Cultural Heritage Protection 2007</i> , Art. 12.1	With the aim of in-situ preservation of archaeological heritage and allowing its study by future generations with more advanced technologies, excavation of an archaeological object shall be permitted only if it is necessary for solving scientific issues and if archaeological heritage is threatened by the damage or destruction resulting from construction, agricultural, industrial and other kinds of activities or by natural processes.
Hungary	<i>Act LXIV of 2001</i> , Art. 10	The elements of archaeological heritage should be kept at their original sites, in their original condition and original relations as much as possible.
Ireland	<i>Planning and Development Act 2000</i> , First Schedule. Part IV.6	Protecting and preserving (either <i>in situ</i> or by record) places, caves, sites, features and other objects of archaeological, geological, historical, scientific or ecological interest.
Macedonia, Former Yugoslav Republic of	<i>Law on the Protection of Cultural Heritage 2005</i> , Art. 15.2	As archaeological items shall be considered also the findings which were discovered as independent creations or as residues of typical parts of antecedent buildings, which permanent regulation of such under the regime of movable cultural heritage has a scientific basis, except if reasons exist for their preservation on the spot (<i>in situ</i>) shall be a public interest of priority.
Malta	<i>Antiquities (Protection) Act 1925</i> , Sec. 12.2	The finder shall be bound to provide for the preservation of the antiquities so discovered, and to keep the same intact and <i>in situ</i> , pending an inspection thereof by the Director of the Museum or any other officer debuted by him for that purpose, within the time of six working days.

Table 18 ‘Europe and North America’ regional definitions for *protection* (bold emphasis added).

State Party	Legislation	<i>Protection</i>
Albania	<i>Law for the Cultural Heritage 2003</i> , Art. 3.15	The mean and way of legal aspect or not of the preservation , maintenance, restructuring or conservation of the cultural heritage.
Bulgaria	<i>Cultural Heritage Act 2009</i> , Art. 8.2	The protection of cultural heritage is a system of measures to ensure conservation in the public interest.
Croatia	<i>Law on the Protection and Preservation of Cultural Goods 1999</i> , Art. 6.1	The implementation of measures for protection of a legal and expert character prescribed in the provisions of this Law, and in accordance with the rules of the conservationist profession.
Georgia	<i>Law on the Protection of Cultural Heritage 1999</i> , Art. 3.E	A complex system of legal, institutional, registering, scientific, prospecting, technological, practical, controlling, informational, educational and other activities which serve to reveal care and preserve cultural heritage for the generations to come.
Hungary	<i>Act LXIV of 2001</i> , Art. 5.1	Involves a participation entitlement and co-operation obligation for state and local authority bodies, ethnic organisations, the churches, social and economic organisations as well as citizens.
Italy	<i>Code for Cultural and Landscape Heritage 2004</i>	Consists in the exercise of the functions and in the regulation of the activities aimed at identifying, on the basis of adequate investigative procedures, the properties constituting the cultural heritage and at ensuring the protection and conservation of the aforesaid heritage for purposes of public enjoyment.
Lithuania	<i>Law on the Protection of Movable Cultural Property 2005</i> , Art. 2.5	The totality of the technical and organisational means which are employed in the protection , for current and future generations, of movable cultural property.
	<i>Law on the Protection of Immovable Cultural Heritage 2004</i> , Art. 4	Consists of 1. Accounting; 2. Declaring protected; 3. Safeguarding – maintenance and use; 4. Knowledge, dissemination thereof; and 5. Rehabilitation.
Macedonia, Former Yugoslav Republic of	<i>Law on the Protection of Cultural Heritage 2005</i> , Art. 11.1	The research, identification, evaluation, re-evaluation, categorization, announcing, registration and designation of the cultural heritage, its preservation , respecting, concern, maintaining, conservation , restoration, reconstruction, dislocation and revitalization, as well as prevention, supervision, restitution, presentation, popularisation and any other form of immediate or indirect preservation of the cultural heritage which is attained in a public interest.
Romania	<i>Law No. 422 of 2001</i> , Art. 2.3	The ensemble of scientific, legal, managerial, financial, fiscal and technical measures meant to identify, research, register, classify, preserve , guard, consolidate, restore and enhance the historical monuments, as well as integrate them within the local communities’ socio-economic and cultural life
Slovakia	<i>Act 49 of 2001</i> , Art. 2.7	The summary of activities and measures aimed at the identification, research, documentation, conservation , regeneration, use and presentation of cultural heritage monuments and historic sites.
Slovenia	<i>Cultural Heritage Protection Act 2008</i> , Art. 2.2	The legal, administrative, organisational, financial and other measures available to the State, regions and municipalities, intended for the maintenance and enrichment of the heritage. Certain protection measures, other than legal and administrative, shall also be implemented by other protection entities;

Latin America and the Caribbean

Of the five UNESCO-delineated regions, ‘Latin America and the Caribbean’ present the lowest inclusions of defined managerial lexicon (Figure 36). In total, 66% State Parties reference *conservation* – commonly in association with *protection* – however, only one State defines the term. Guatemala regards *conservation* as “preventive, curative and corrective measures aimed at ensuring the integrity of the objects which are part of the Cultural Heritage of the Nation” (*Decree No. 26-97 of 1997*, Art. 42.k). No regional State Party references *in situ* conservation or identifies UCH in conjunction with *conservation*.

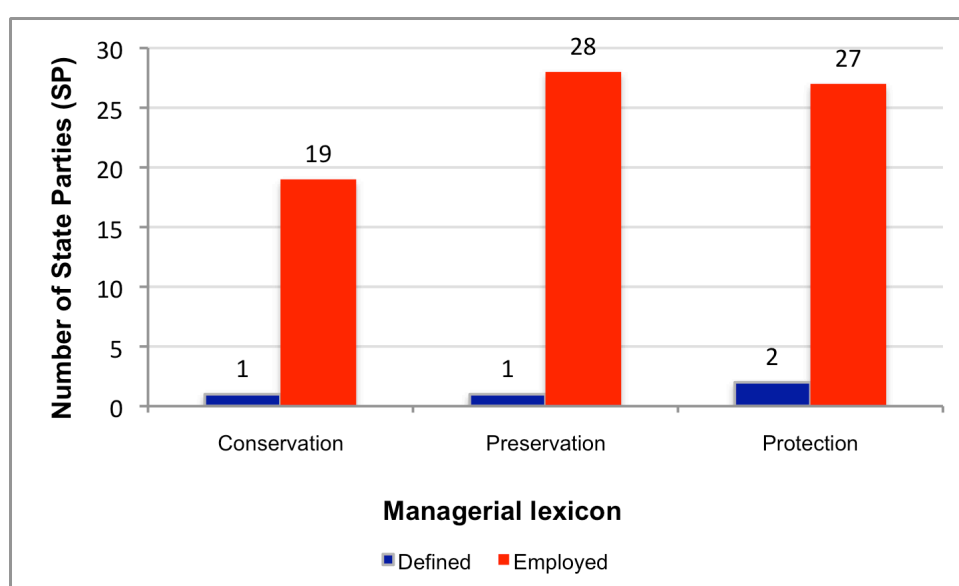


Figure 36 Number of State Parties in the ‘Latin America and the Caribbean’ region to define and employ managerial lexicon.

Although 97% of assessed State Parties analysed from the region utilise *preservation* within the context of heritage management, Colombia is the only State to define the terminology. In this context Colombia’s *Law No. 397 of 1997* (Art. 42) identifies two *preservation* terms – *preventative preservation* and *preservation – restoration*:

Preventive Preservation: It refers to strategies and measures of technical and administrative order geared towards avoiding or minimizing deterioration of the assets, and if possible, direct interventions. It comprises activities such as storage, handling, packing, transportation, control of environmental conditions, planning of emergencies, training of staff and awareness raising actions among the general public.

Preservation-Restoration: Direct actions on assets geared towards ensuring their preservation through stabilization of the material. It is carried out based on the

formulation of a restoration project. It includes urgent actions on assets whose physical and/or chemical integrity is in danger and/or in imminent risk, as a result of damages produced by natural agents or human actions, provisional protecting actions to stop or prevent greater damages, as well as periodical and planned actions geared towards maintaining the assets in excellent conditions.

Similar to trends from analysis of other UNESCO regions, *preservation* and *restoration* are commonly affiliated with expressions of *protection*. Additionally, 7 States (24%) within the sample from this region reference UCH when discussing *preservation*, while 3 SP (10%) identify *in situ* preservation within domestic legislation (Table 19).

Table 19 Context of *in situ* preservation within the ‘Latin America and the Caribbean’ region (bold emphasis added).

State Party	Legislation	<i>In situ</i> Preservation references in text
Bolivia	<i>Law of 1927</i> , Art. 3	Included in the prior article are archaeological pieces, documents, decorations, furniture, paintings, sculpture and other objects of artistic or historic interest that may be held by religious congregations, corporations or individuals, which are required to present them and show them before the commission or its agents in situ , maintaining these objects where they are, and are required to report any related sale or negotiation to said commission.
Colombia	<i>Law No. 397 of 1997</i> , Art. 9.2	Any method used for the exploration or removal of underwater cultural heritage should avoid the destruction of its cultural information, even if this means leaving it in place while other methods or technologies are found which would allow for its recovery or study without causing any damage.
Dominican Republic	<i>Resolution No. 416 of 1972</i> , Art. 5.d	Organizing the supervision of archaeological excavations, ensuring the preservation ‘in situation’ of certain cultural property, and protecting certain areas reserved for future archaeological research.

Comparatively, *protection* is utilised by 93% of States from this region, however, only 2 SP – Cuba and Guatemala – define the term. Cuba establishes *protection* as:

all legal and institutional actions, including technical, restoration and other actions, intending to keep the integrity of the cultural assets against different agents that might endanger the partial or total durability of the asset considered a Cultural Property of the Nation or museum piece (*Decree No. 118 of 1983*, Art. 27).

Interestingly, Guatemala’s *Decree No. 26 of 1997* (Art. 15) identifies that it shall “be the responsibility of the Cultural and Natural Heritage Bureau to define the area of influence and levels of protection.” *Preservation*, as previously mentioned, is employed in association with *protection* by 69% of the ‘Latin

America and the Caribbean' State Parties. Five State Parties (17%) in the region reference UCH when discussing *protection*. Similarly, 5 SP also cite *covering* within their legislation, four of which employ *covering* in conjunction with *monuments* and *protection*, and two with *maintenance*.

Swimming with the fishes: inclusion of UCH

Based on the data from the 133 State Parties assessed in this study, 65% (87 SP) reference cultural-identifiers with underwater locations (Appendix 1) (Figure 37). This includes 24 non-coastal State Parties (23 SP - inland, 1 SP – Lacustrine), seven of which include an underwater heritage-reference within assessed domestic legislation. See Figure 38 for regional inclusions and Figure 39 for the global distribution of general underwater-references and location-markers.

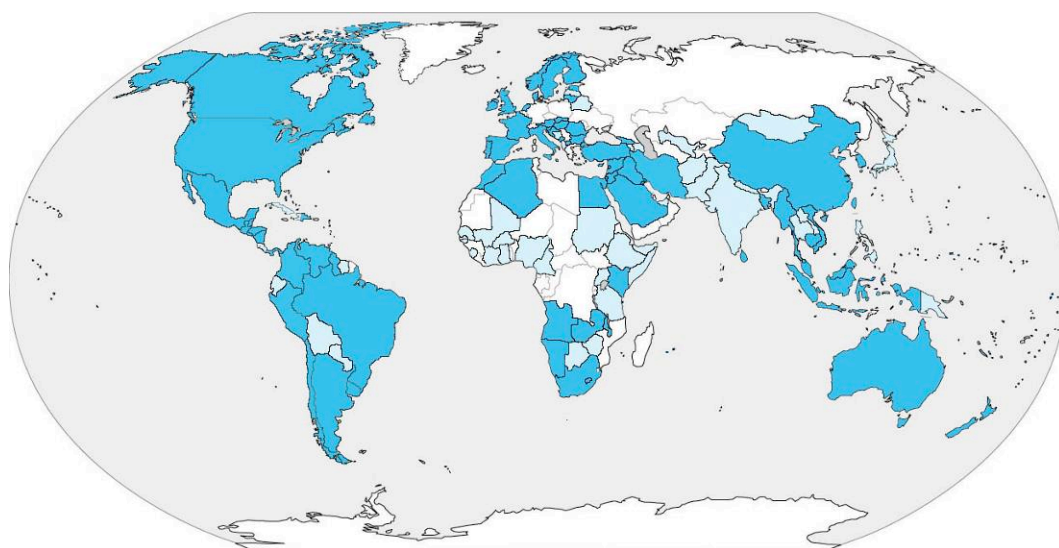


Figure 37 State Parties to reference UCH are in dark blue. Light blue relates to assessed State Parties omitting underwater references. Colourless States are not assessed in this study.

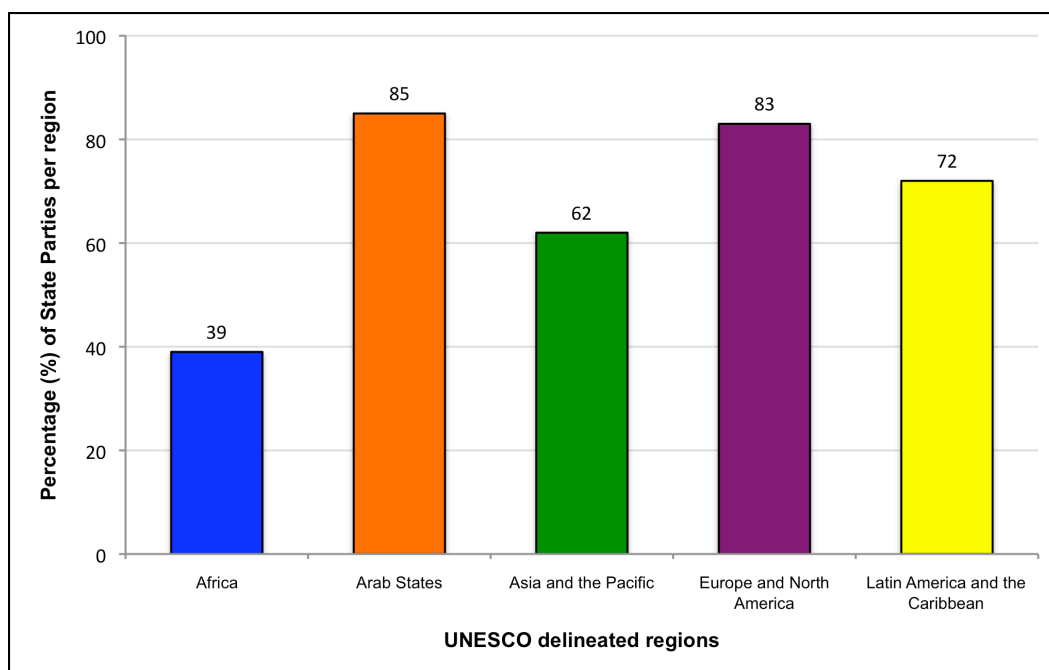


Figure 38 Regional inclusions of UCH references to non-descript ‘underwater’ locations or specific maritime zones.

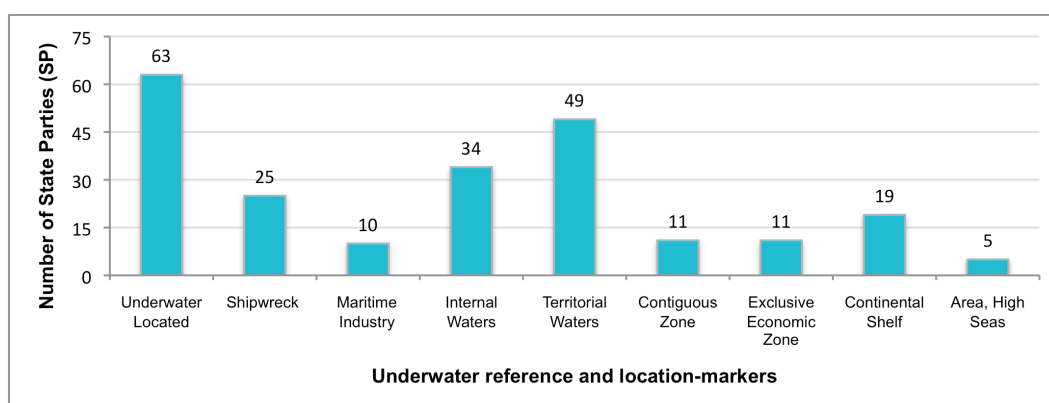


Figure 39 Number of State Parties to reference a non-descript ‘underwater’ location or specific maritime zones.

Africa

Of the 28 sample States from UNESCO’s ‘Africa’ region, 39% reference UCH, shipwrecks or related items of heritage value in an underwater jurisdictional boundary. Eight State Parties specifically reference ‘underwater’, or ‘land covered with water’, or ‘in the sea’, as location-markers in relationship to cultural materials and sites (see Figure 40 for the distribution of UCH references in delineated maritime zones).

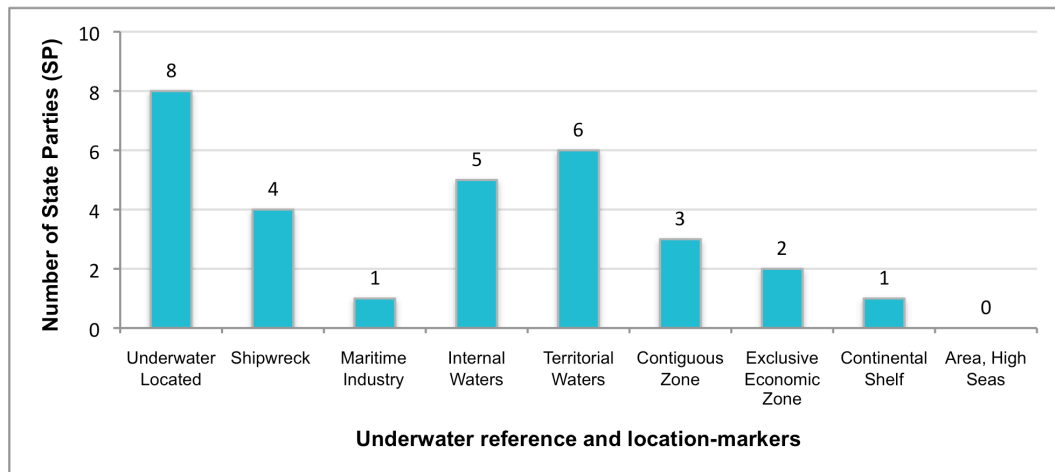


Figure 40 Distribution of underwater references in the 'Africa' region.

Eight State Parties (29%) have specific legislation pertaining to maritime zones that relate to the 1982 United Nations *Convention on the Law of the Sea*. Subsequent to the Convention, South Africa and Mauritius established a 'maritime cultural zone' within the delineated maritime zones. The cultural zone in South African jurisdictional waters is described as:

1. The sea beyond the territorial waters...but within a distance of twenty-four nautical miles from the baselines...
2. Subject to any other law the Republic shall have, in respect of objects of an archaeological or historical nature found in the maritime cultural zone, the same rights and powers as it has in respect of its territorial waters (*Maritime Zones Act, 1994, Art.6*).

Mauritius's *Maritime Zone Act 2005*, Part IX specifically addresses UCH in internal waters, archipelagic waters and the territorial sea, identifies the maritime cultural zone, as well as includes UCH located in the EEZ and continental shelf. The maritime cultural zone is established as "an area of sea coincident with the contiguous zone" (*Maritime Zone Act 2005, Sec. 25.1*).

The legislation of four States (14%) from the region is specifically inclusive of shipwrecks or a derivative thereof. For example Algeria's *Decree 69-82 of 1969* utilises "maritime wreckage" (Art. 1); South Africa includes a definition of a "wreck, being any vessel or aircraft, or any part thereof" (*National Heritage Resources Act, 1999, Sec. 2*); and both Kenya and Namibia employ the term 'shipwreck' in their legislation. Namibia's *National Heritage Act 2004* (Sec. 57) has the only domestic legislation to dedicate a section to 'Historic shipwrecks and shipwreck objects'. Of these four State Parties, Kenya is the only one to omit specific maritime zone-markers for the location of protected shipwrecks.

Uniquely, Zambia also references maritime-related activity when identifying “ancient heritage,” which includes “any dam, weir, bridge, ford, harbour-works, landing place or ancient slip-way or the remains of such” as well as “any bar made of sunken vessels” (*Act No. 23 of 1989*, Sec. 2). This is the only specific reference to maritime industry within the region. Comparably, 3 SP (11%) identify excavation underwater as a regulated activity.

As presented in the ‘Regional-identifying and defining lexicon’ section above, only one State in the ‘Africa’ region – Angola – references UCH in regards to *cultural heritage*. Similar values are associated with *cultural patrimony* located underwater. Six State Parties (21%) reference *objects* underwater – Algeria, Angola, Mauritius, Morocco, Namibia, and South Africa – while 2 SP (7%) – Malawi and Mauritius – refer to *monuments* underwater. Malawi is the only State Party to identify underwater *relics* in the region.

No domestic legislation in the ‘Africa’ region presents a direct association between *conservation*, *preservation* or an *in situ* derivative and underwater locations. One State (4%) – Namibia – associates *protection* directly with cultural materials located underwater.

Arab States

Within heritage-inclusive legislation from the sampled ‘Arab States’ region, 11 SP (85%) identify cultural materials in their jurisdictional waters (Figure 41). Of these, Malta is the only State to define the extent of protection for heritage materials beyond the territorial sea out to the continental shelf. Domestic legislation from across the region also commonly references ‘streams’ and ‘lakes’ as location markers for culturally significant materials. Included but less common terminology consists of: “pools” (Bahrain, *Decree-Law No. 11 of 1995*), “aquatic surveys” (Algeria, *Law 98-04 of 1998*), “marshes and regional water surfaces” (Iraq, *Law No. 55 of 2002*), “seabed” (Malta, *Cap 54 of 1925*), and “in watercourses” (Syria, *Decree Law No. 222 of 1999*).

The percentage of cultural-identifiers (i.e. *antiquities*, *objects*, *UCH*) associated with underwater locations varies across the region. Two State Parties (15%) are inclusive of *antiquities* underwater and 4 SP (31%) in the ‘Arab States’ region include *objects* underwater. Only one State (8%) – Malta – incorporates

cultural heritage sites underwater. Similarly, Algeria and Lebanon correlate the location marker ‘underwater’ with either *cultural patrimony* or *cultural property* respectively. Unlike sampled legislation from the ‘Africa’ region, there is a more frequent correlation between excavation and underwater sites: 9 States (69%) relate the two terms in legislation, and 5 SP (38%) include materials located underwater or underwater activities in the definition of *excavation*. The descriptions of the action commonly include: ‘digging’, ‘an aim of discovering/uncovering movable or immovable materials’, and identifies an underwater location (Table 20).

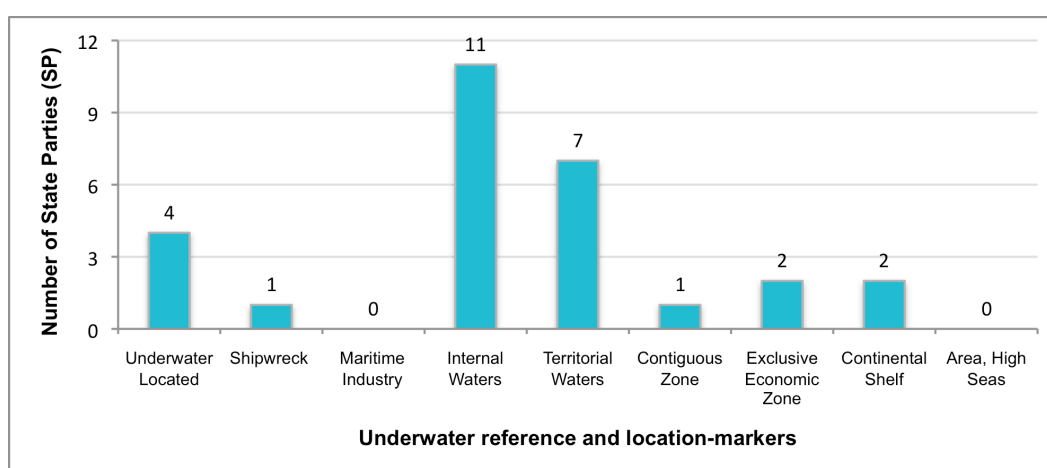


Figure 41 Distribution of underwater references in the ‘Arab States’ region.

Within the region, *preservation* is the only managerial term associated with underwater. Malta alone implies the term in relation to an underwater location. In this instance, the term *preservation* is not specifically employed, however it is within the context of *preserving* cultural heritage:

An object shall not be deemed to form part of the cultural heritage unless it has existed in Malta, including the territorial waters thereof, or in any other country, for fifty years, or unless it is an object of cultural, artistic, historical, ethnographic, scientific or industrial value, even if contemporary, that is worth preserving (Malta, *Cap. 445 of 202*, Art. 3).

Table 20 ‘Arab States’ State Party definitions of *excavation* inclusive of underwater locations.

State Party	Legislation	Excavation
Bahrain	<i>Decree Law No. 11 of 1995</i> , Art. 10	Works of digging, examining and investigation that aim at discovering movable and immovable antiquities underground or on land or in water streams, pool, qanats [sic] or territorial sea.
Iraq	<i>Law No. 55 of 2002</i> , Art. 4.10	The actions of digging or sensing and sounding those devoted to uncover the movable or immovable property in or under the surface of soil or in the bottom of Rivers, Lakes, Marshes and the Regional water surfaces.
Kuwait	<i>Princely Decree No. 11 of 1960</i> , Art. 24	All investigations carried out to discover movable and immovable antiquities by exploring or digging the surface of land or diving into the depths of Kuwait territorial Sea-waters.
Saudi Arabia	<i>Royal Decree of 3 August 1972</i> , Art. 54	All digging, sounding and searching activities which aim at finding movable or fixed antiquities below or above ground level, or in streams, lakes, or territorial waters.
Syria	<i>Decree Law No. 222 of 1963</i> , Art. 41	All the digging, probing and investigating works that aim at finding a movable or immovable antiquities interior the earth or on its surface, or in watercourses, lakes or territorial waters.

Asia and the Pacific

Sixty-two percent (21 SP) of the analysed heritage-inclusive legislation from the ‘Asia and the Pacific’ region identify UCH or some derivative of the term within jurisdictional waters. See Figure 42 for the regional utilisation of underwater references. In total, 47% of the region refers to non-descript underwater locations (i.e. ‘underwater’ or ‘in the sea’) when discussing location-markers for cultural-identified materials. Other water-related markers include: “land covered by water” (New Zealand, *Resource Management Act 1991*), and “underwater or at sea level” (Philippines, *National Cultural Heritage Act 2009*).

From the ‘Asia and the Pacific’ States assessed, 18% identify shipwrecks or a derivative thereof in their heritage-related legislation. Phrasing includes: “objects relating to seagoing exploration, transportation... ship’s gear, anchors, cargo and personal items from shipwrecks, sunken ships and landfalls, ships’ logbooks and other documents” (Australia, *Protection of Movable Cultural Heritage Regulations 1987*, Sec. 2.3); the “remains of a ship, to part of the remains of a ship, to an article or articles, or to part of an article, being situated in

waters” (Australia, *Historic Shipwrecks Act 1976*, Sec. 3.2); “vehicle, ship and boat, in part or in whole, whose production has ceased” (Brunei Darussalam, *Antiquities and Treasure Trove Act 1967*, Sec. 2); and “all ships, other vessels and aircraft” (Palau, *Historical and Cultural Preservation Act 1995*, Sec. 302). Other underwater-related terminology defined in the region includes *historic shipwreck* (Australia, *Historic Shipwrecks Act 1976*) and *vessel* (Australia, *Australian National Maritime Museum Act 1990*). *Shipwreck*, or a derivative of the term, is also included within the definitions of *historical objects* (Malaysia, *National Heritage Act 2005*), *archaeological sites* (New Zealand, *Historic Places Act 1993*), and *monument* (Singapore, *National Heritage Board Act 2004*). In contrast, Singapore implies an underwater location by establishing that a *monument* includes “any site comprising, or comprising the remains of, any vehicle, vessel, aircraft or other movable structure or part thereof” (*National Heritage Board Act 2004*, Sec. 46.10.c).

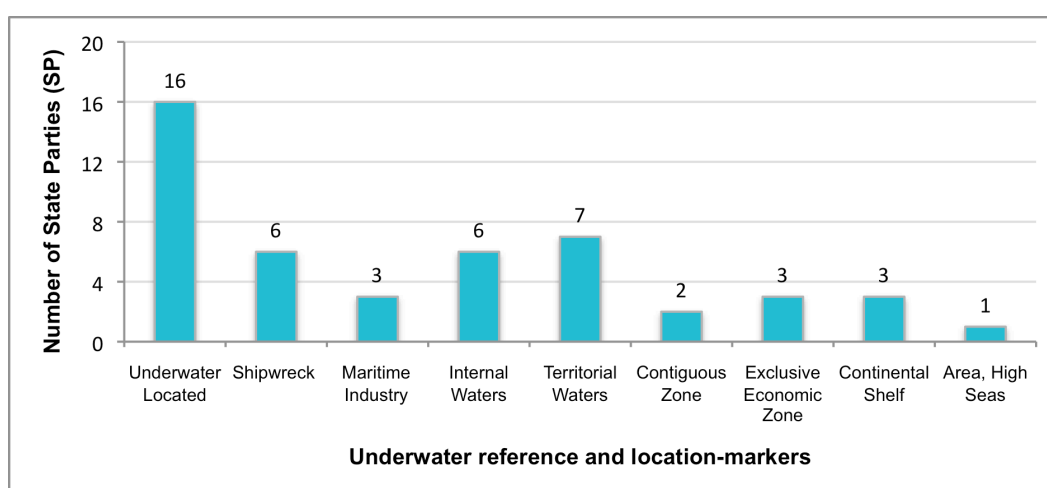


Figure 42 Distribution of underwater references in the ‘Asia and the Pacific’ region.

Three State Parties (9%) also identify maritime industry in the assessed legislation. These include: “objects relating to whaling and sealing” (Australia, *Protection of Movable Cultural Heritage Regulations 1987*, Sec. 2.3.i), “jetties, wells and springs” (China, *Regulations Governing Preservation of Scenic Resorts, Ancient Remains and Relics 1928*, Art. 2.A.3), and “lighthouses, small ports” (Philippines, *National Cultural Heritage Act 2009*, Sec. 3.f). Japan’s *Law for the Protection of Cultural Property 2007* (Art. 2.4) includes “sea-shores” as a

recognised component of *monuments* but does not specify or infer any other aspect of underwater cultural materials.

As previously referenced, 59% of the ‘Asia and the Pacific’ sampling identify underwater cultural materials within domestic legislation. This includes at least one reference for each cultural-identifier; Vietnam and Brunei identify more than term underwater within domestic legislation. Among the States assessed in this UNESCO region, 5 SP (15%) reference *cultural heritage* underwater, three of which do so in the definition of the term. Three States (9%) also independently define *underwater cultural heritage*. Among these, the Marshall Islands refer to UCH as *submerged resources*. This definition is congruent with the definitions of *underwater cultural heritage* within other legislative texts in the region. See Table 21 for the classification of *underwater cultural heritage*.

Table 21 ‘Asia and the Pacific’ State Party definitions of *underwater cultural heritage*.

State Party	Legislation	<i>Underwater cultural heritage</i>
China	<i>Regulations for Underwater Relics</i> 1989, Art. 2	The human cultural heritage that has historic, artistic and scientific values and that remains in the following waters: <ol style="list-style-type: none"> 1. All the cultural relics of Chinese origin, or of unidentified origin, or of foreign origin that remain in the Chinese inland waters and territorial waters; 2. Cultural relics that are of Chinese origin or of unidentified origin that remain in the sea areas outside the Chinese territorial waters but under Chinese jurisdiction according to the Chinese law; 3. Cultural relics of Chinese origin that remain in sea areas outside the territorial waters of any foreign country but under the jurisdiction of a certain country, or in the high seas.
Malaysia	<i>National Heritage Act</i> 2005, Sec. 2	All traces of human existence having a cultural, historical or archaeological character which have been partially or totally under water, periodically or continuously, for at least one hundred years such as – <ol style="list-style-type: none"> 1. Sites, structures, buildings, artefacts and human remains, together with their archaeological and natural context; 2. Vessels, aircraft, other vehicles or any part thereof, their cargo or other contents, together with their archaeological and natural context; and 3. Objects of prehistoric character.
Marshall Islands	<i>Historic Preservation Act</i> 1991, Sec. 3.31	Prehistoric or historic sites and artefacts located in the intertidal or sub-tidal zone within the internal, archipelagic or territorial waters of the Republic.

Of the 20 SP to reference underwater-locations, Sri Lanka is the only State Party to specify *antiquities* located “in any river or lake” (*Antiquities Order 1956*, Sec. 2.3). Throughout the analysed legal texts from this region, other terminology associated with internal waters includes: “in any river or in the sea” (Malaysia, *National Heritage Act, 2005*), and “inland waters or territorial seas” (China, *Order No. 76 of 2002*).

In regards to underwater industrial activities among States sampled from this region, 9 SP (26%) reference underwater locations and/or materials with *excavation* (Table 22). This number includes three States (9%) specifying underwater locations within their definitions of the term. Comparatively, Pakistan is the only State in the regional grouping to associate *covering* with an underwater activity. The State’s *Antiquities Act 1975* (Sec. 2.g.iii.4) identifies that “such portions of land or water adjoining the site of an immovable antiquity as are reasonably required for fencing or covering or otherwise preserving such antiquity.”

Table 22 ‘Asia and the Pacific’ State Party definitions of *excavation* inclusive of underwater associations.

State Party	Legislation	Excavation
Cambodia	<i>Sub-Decree Respecting the Implementation of Cultural Heritage Protection 2002</i> , Art. 17	All research work carried out for the purpose of discovering artefacts of an archaeological nature or studying archaeological material or sites, regardless of whether such research includes digging into the soil or exploring systematically the surface of the soil, or whether it is performed on the bed or in the subsoil of inland or territorial waters.
China	<i>Administration of Archaeological Activities 1991</i> , Art. 5.3	Refers to such activities conducted for the purpose of obtaining archaeological materials and information, as scientific discovering and archaeological recording of sites and ancient culture, ancient tombs and other underground and underwater cultural relics as well as collecting of cultural relics and natural specimens.
Pakistan	<i>Archaeological Excavation Rules 1987</i> , Sec. 2.1.b	Any research aimed at the discovery of an antiquity, whether such research involves digging of the ground or is carried out on the bed or in the sub-soil of inland or territorial waters of Pakistan.

In this region, *preservation* and *protection* are both employed in conjunction with sites and cultural materials located underwater. Three State Parties reference *preservation* underwater, and similarly, 3 SP associate

protection underwater. None of the domestic legislation analysed include *in situ* or *conservation* in relation to UCH materials or jurisdictional maritime zones.

Europe and North America

Twenty-nine of the 35 analysed State Parties (83%) from the ‘Europe and North America’ region include underwater cultural materials within their domestic legislation (Figure 43). Within the region, 63% (22 SP) employ non-descript underwater locations, such as: underwater (Hungary, *Act CXL of 1997*), underwater zones (Croatia, *Law on the Protection and Preservation of Cultural Goods 1999*), from the sea (Cyprus, *Antiquities Law 1935*), at sea (Malta, *Cap. 445 of 2002*), water or in the sediment of a body of water (Estonia, *Heritage Conservation Act, 2011*), watercourses (Denmark, *Executive Order No. 1505 of 2006*), above or below the surface of the water (Bulgaria, *Cultural Heritage Act 2009*), above or below water (UK, *Dealing in Cultural Objects (Offences) Act 2003*), on the seabed (Denmark, *Executive Order No. 1505 of 2006*), subaquatic environments (Portugal, *Law No. 107 of 2001*), and embedded in the submerged lands (US, *Abandoned Shipwreck Act 1987*). Out of the five UNESCO groupings, the ‘Europe and North America’ region contains the greatest range of inclusive maritime zones, with 9% specifically referencing underwater cultural materials in the Area or High Seas.

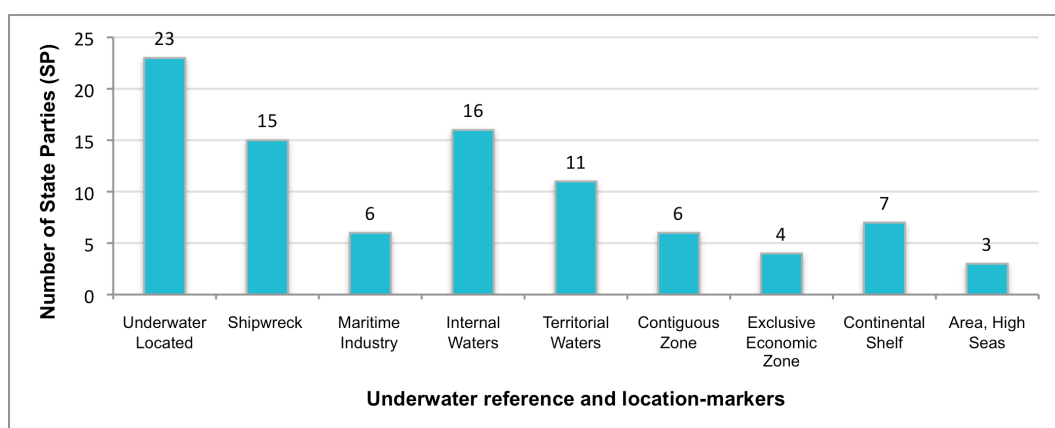


Figure 43 Distribution of underwater references in the ‘Europe and North America’ region.

Additionally, all of the cultural heritage identifiers have at least one State Party referencing the term with an underwater association: 1 SP (3%) identifies

antiquities, relics and cultural patrimony underwater, 8 SP (23%) reference *monuments* underwater, and 23 SP (66%) specifically identify *objects* underwater. Excluding the EU legislation, 12 State Parties (34%) relate *cultural heritage* with underwater references, however, only 3 SP (9%) include a specific underwater location marker in the definition of *cultural heritage*. Portugal is the only State assessed of this regional group to independently define *underwater cultural heritage* (Table 23). In contrast, 5 States (14%) reference *cultural property* with ‘underwater’ or ‘maritime’ locations, and three of these include the location indicator within the definition of the term.

Table 23 Portugal’s definition of *underwater cultural heritage*.

Decree Law No. 164 of 1997, Art. 1
<p>Underwater cultural heritage is made for all movable and immovable property and surrounding areas, evidence of human presence, possessed of historical, artistic or scientific, located entirely or in part through underwater, soaked, or wet:</p> <ol style="list-style-type: none"> a. The territorial sea, its bed and banks; b. In streams, their beds and margins; c. In lakes, ponds and lagoons, and their beds margins; d. The piers and ditches, their beds and margins; e. In the waters subject to tidal influence in rivers, lakes, ponds and lagoons, their beds and margins; f. In the marshes; g. In groundwater; h. In the waters of wells and reservoirs; i. In areas flooded regularly or currently silted, their beds and margins.

Although 83% (29 SP) of the region references *excavation* within domestic legislation, only 16 States (46%) – excluding European Union legislation – reference excavations conducted underwater within their texts. More specifically, 5 SP (14%) identify underwater locations when defining *excavation* (Table 24). While EU-prescribed legislation refers to underwater excavations, the texts do not define the action. Within the ‘Europe and North America’ grouping only one State addresses *moving* within their heritage laws. Within its *National Heritage Code 2004* (Art. L532-8), France asserts “excavations, probes, prospecting, moving and sampling must be executed under the effective direction of the person who has requested and obtained the authorization.” Unlike legislation from the other regions, domestic laws analysed from ‘Europe and North America’ do not demonstrate an association between *covering* and underwater.

In regards to the managerial lexicon, while 3 SP (9%) reference *conservation* in underwater locations, there is no use of underwater location markers within any definition of *conservation*, nor in association with the *in situ* derivative. Similarly, there is no direct relationship made between *in situ* preservation and underwater locations. However, six State Parties (17%) associate *preservation* with UCH identifiers and 5 SP (14%) recognise *protection* underwater.

Table 24 ‘Europe and North America’ State Party definitions of *excavation*.

State Party	Legislation	Excavation
Austria	<i>Federal Law No. 170 of 1999</i> , Sec. 11.1	Research by altering the surface of the earth or the ground under water.
Georgia	<i>Law on Cultural Heritage 2007</i> , Art. 3.e	Earth and underwater work performed with the aim of uncovering or scientific study of archaeological objects.
Hungary	<i>Act LXIV of 2001</i> , Art. 7.1	All excavation involving earthwork that explores the elements of archaeological heritage. Excavation also includes archaeological excavation on the water and in caves.
Portugal	<i>Law No. 107 of 2001</i> , Art. 77.2	The removal of earth in the topsoil, subsoil or sub-aquatic environments and that, in accordance with archaeological methodology, are carried out with the aim of discovering, learning about, protecting and enhancing archaeological heritage.
Spain	<i>Law No. 16 of 1985</i> , Art. 41.1	Earth moving on the surface, under ground or under water that is carried out for the purpose of discovering and investigating all types of historical or palaeontological remains and the geological components related to them.

Latin America and the Caribbean

Twenty-one of the 29 State Parties (72%) assessed from this region legislatively include reference to cultural-identifying terminology located underwater (Figure 44). Notably, unlike the other UNESCO-regional groupings, ‘Latin America and the Caribbean’ States not only reference maritime zones in accordance to UNCLOS III, but also employ the phrases ‘jurisdictional waters’ (7 SP, 24%) and ‘national jurisdiction’ (1 SP, 3%) within domestic legislative texts.

Within this region, all of the cultural-identifiers discussed in this study have at least one State Party referencing the term with an underwater location-marker. Specifically, 2 SP (7%) equate *antiquities* underwater, 5 SP (17%) *monuments* underwater – each within the definition of the term – and 8 SP (28%)

reference *objects* underwater – two of which include underwater in the definition of the term. In regards to *cultural heritage*, while 5 States (17%) correlate the term with underwater locations, only 2 SP (7%) independently define *underwater cultural heritage* as a specific term (Table 25). Venezuela defines the term *sub-aquatic sites* within its heritage-inclusive legislation, regarding these as “aquatic spaces and islands of the Republic which may contain properties of archaeological value” (*Administrative Decision No. 012 of 2005*, Art. 14). The only State to utilise *cultural patrimony* within its domestic legislation also equates the term with immovable property “submerged in underwater spaces within the national territory” (Peru, *Law No. 28296 of 2004*, Art. 1). Four State Parties (14%) identify *cultural property* within water-related environments, three of which include an underwater location indicator within the definition of the term.

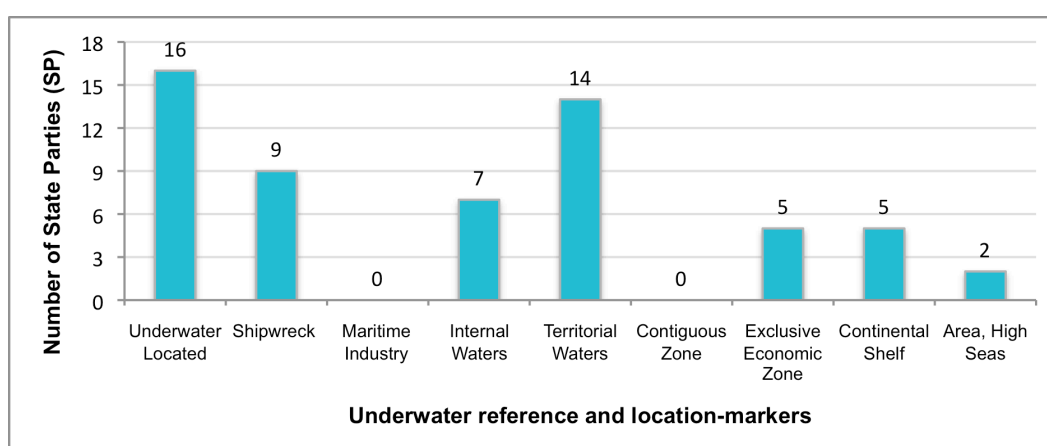


Figure 44 Distribution of underwater references in the ‘Latin America and the Caribbean’ region.

The activities of both *covering* and *excavation* are included within some of the domestic legislative texts analysed from the ‘Latin America and the Caribbean’ region, however, *covering* is not specifically employed in the context of underwater environments by any State. Twenty-three State Parties (79%) reference *excavation*, with 8 SP referring to underwater excavation specifically. Three States from the regional sampling define the term, however, the Dominican Republic is the only State to mention the underwater environment within the expression of *excavation* (Table 26).

Table 25 ‘Latin America and the Caribbean’ State Party definitions of *underwater cultural heritage*.

State Party	Legislation	<i>Underwater cultural heritage</i>
Colombia	<i>Law No. 397 of 1997, Art. 9</i>	Any cities or cemeteries from any group of people which no longer exists, human remains, shipwrecks meaning the vessel or its provisions or any part thereof, and any other moveable asset found therein, or scattered at the bottom of the sea, whether they are on the seabed or subsoil of inland waters, territorial waters, the continental shelf or exclusive economic zone, whatever their nature and state may be and whatever may have been the cause or era in which the submersion, shipwreck, or jettison occurred belong to the cultural or archaeological heritage of Colombia because of their historical or archaeological value. Any remains or parts of vessels, provisions, or objects found in similar circumstances, shall also be classified as shipwrecked.
Peru	<i>Executive Order No. 011-2006 Annex, Art. 71</i>	<p>All property that has the importance, value and significance granted...which are submerged underwater partially or totally, periodically or continually, for at least 50 years in the Peruvian territorial waters, lacustrine or riparian areas and other aquatic areas in the national territory, amongst others:</p> <ol style="list-style-type: none"> 1. The sites, structures, edifices, objects and human remains, together with their archaeological or historical context. 2. Vessels, airships or other means of transportation or any part of them, their load or other content, together with their archaeological or historical context, and, 3. Paleontology objects. Cables, pipes or facilities located underwater and which are currently in use are not considered underwater Cultural Heritage.

Table 26 ‘Latin America and the Caribbean’ definitions of *excavation* incorporating an underwater association.

State Party	Legislation	Excavation
Dominican Republic	<i>Regulation No. 4195 of 1969, Art. 15</i>	The deliberate and methodological removals of land with respect to which there is evidence of existing archaeological deposits, whether these are remains of constructions or relics. Likewise, excavations shall be understood to be the works of archaeological searches of a speleological or submarine nature and other similar ones.

In regards to managerial terms assessed in this study, no States equate *conservation* or *in situ* conservation with underwater location indicators. Both *preservation* and *in situ* preservation are, however, linked with UCH: 7 SP (24%) describe UCH in the context of *preservation*, while 1 SP (3%) (Colombia) includes *in situ* preservation ‘underwater’ (Table 19). *Protection* is presented in

conjunction with underwater location-markers in 17% (5 SP) of the sampled States; however, *in situ* protection is not employed.

Summary

The data collated from the information presented above demonstrate that the most commonly employed cultural identifier is *monuments*, rather than *cultural heritage*, *cultural patrimony* or *cultural property*. In regards to underwater specific recognition, on average, 68% of each sampling from the five UNESCO-delineated regions identifies heritage or other culturally significant materials in context with a non-descript ‘underwater’ identifier or underwater location-markers. Only eight States, representing 6% of the total international sample, independently define *underwater cultural heritage* or a derivative of the term – this figure does not include States Parties that only provide specific definitions for shipwrecks or vessels. In regards to the assessed managerial lexicon, less than a quarter of all States included in this analysis define one or more of the terms frequently utilised (Figure 45). Moreover, only 11% of all State Party domestic legislation analysed reference an *in situ* managerial term, and none of the assessed States include specific methods affiliated with either *in situ* conservation or *in situ* preservation.

Conclusion

The data collected within this chapter incorporates the utilisation of regionally employed cultural-identifiers and managerial lexicon for comparison within and across UNESCO-delineated regions. Most notably, a vast spectrum of language and terminology is used within State Party legislation that relates to and impacts cultural heritage material. More specifically, cultural heritage located underwater is often under-represented or excluded from the legislation, making the process of validated decision making and the application of a universal best practice or UCH management more difficult and open to interpretation. The oscillation among preferred cultural-identifying terminology not only internationally, but within each UNESCO region, demonstrates the lack of

standardisation of the legislative lexicon related to identification and management of UCH. Based on the data, the observation of discordance among domestic legislative texts applies to the utilisation of specific definitions for both internationally, but within each UNESCO region, demonstrates the lack of

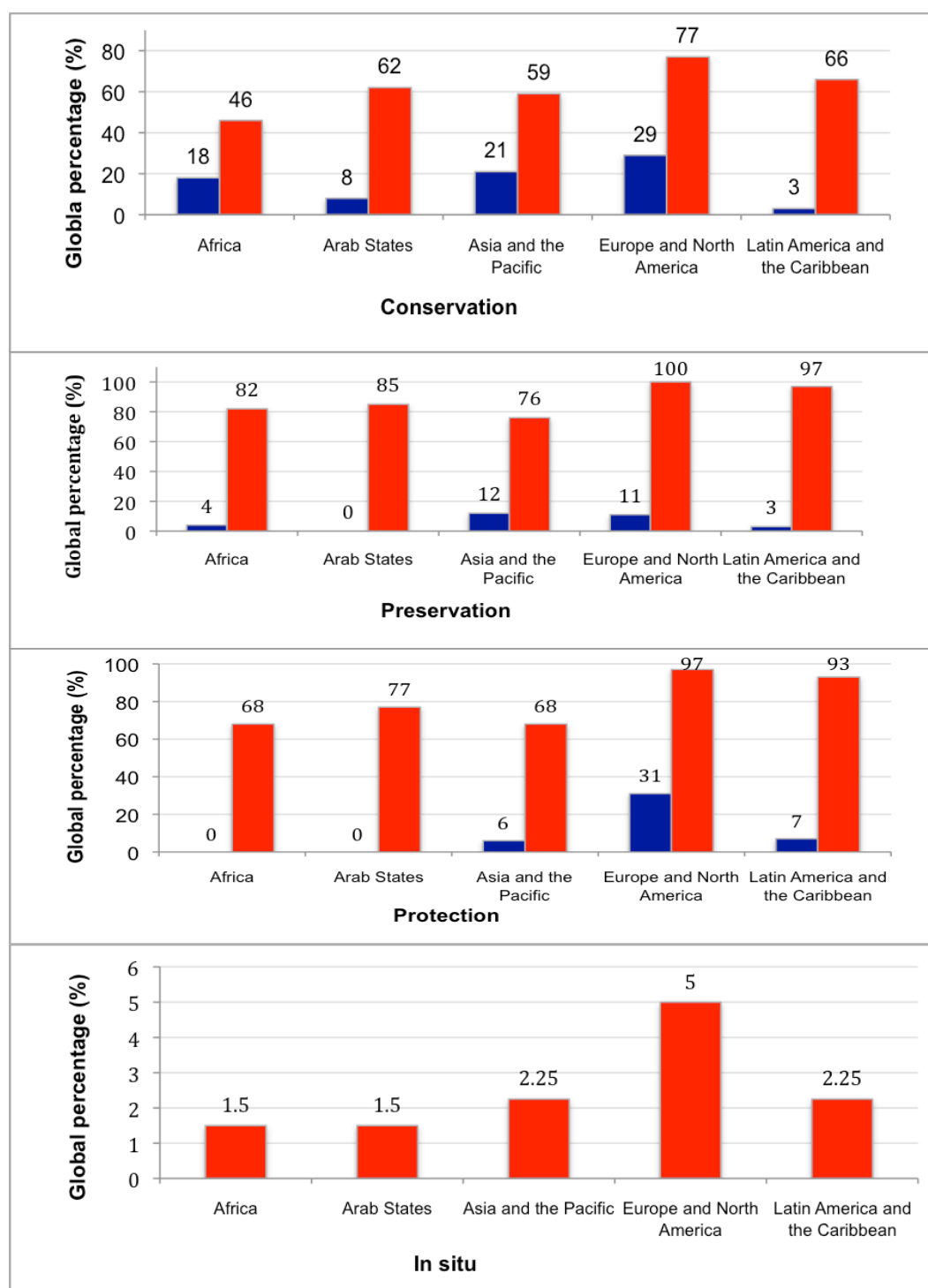


Figure 45 Global comparison of defined and employed managerial terminology per UNESCO-delineated region. Red represents employed terminology and blue represents defined terminology.

standardisation managerial terminology and cultural-identifiers. This observation points to the relevance of developing a more uniformly recognised working lexicon to identify and protect UCH. Given that *conservation*, *preservation* and *protection* are terms with a more universal application within domestic heritage-inclusive legislation, there is, arguably, a clear need for the development, endorsement and inclusion of standard criteria for these specific managerial terms.

7

Clearing the deck: a comparative analysis

The information presented within this thesis comprises a range of sources – from practitioners’ perspectives on UCH management and *in situ* preservation to both international and domestic heritage-related legislation and guidelines. After the independent analysis and discussion of each data sources in previous chapters, this Chapter collates and discusses the datasets in order to provide a more comprehensive analysis of UCH management within a global setting. Firstly, data obtained in Chapter 5, regarding identified terminology of interest within international conventions and guidelines, and the information extracted in Chapter 6, pertaining to similar terms utilised and defined within domestic laws, is examined and contextualised. This information is then integrated into a discussion demonstrating limitations among practitioners’ perspectives regarding *in situ* preservation, extending the discourse from Chapter 4, and addressing how these perspectives fit within the framework of the current legislative vocabulary. The assessment concludes with an analysis of how current legislative parameters impacts the five case studies introduced in Chapters 3 and 4 to provide context to the relationship between international and domestic laws and practitioners’ applied methodologies.

Legislative identification

In accordance with the 1969 *Vienna Convention on the Law of Treaties*, terminology employed within a legislative document can remain ambiguous as

long as the interpretation of the text is in good faith and in accordance with the ordinary meaning of the term. This enables State Parties to customarily interpret international documents in accordance with domestic laws. However, although both international and domestic legislation frequently include ambiguous provisions regarding ‘heritage’, it is necessary to clarify inclusive items within the subject matter, otherwise items not specifically identified may fall outside of the provisions of the law. Indeed, it can be demonstrated that indistinct phrases and undefined terminology employed in analysed legislation from both Chapter 5 and Chapter 6 have impacted the UCH management globally.

After decades of vague UCH inclusions within international heritage law, the UNESCO *Convention on the Protection of the Underwater Cultural Heritage 2001* became the primary legislative text relating to UCH identification and management. Unfortunately, in order to incorporate the vast interests and domestic inclusions of member States and stakeholders, the text still mimics preceding laws and establishes ambiguous articles. Nonetheless, despite the Convention’s somewhat broader managerial allowances, due to the difficulties of amending domestic legislation, some State Parties are still unable or unwilling to amend current domestic law to align with the 2001 Convention. This therefore limits the application of the 2001 Convention, as of January 1, 2013, to the 41 State Parties that have ratified or accepted the convention.

In place of formal adoption of the 2001 UNESCO Convention’s entire content, every negotiating State that participated in the development of the convention accepted the Rules of the Annex, “without exception” (Prott 2006, p. 146). Importantly, this includes Rule 1, which coincides with best practice for UCH management, and establishes that *in situ* preservation should be the ‘first option’ when managing UCH. As such, this ‘option’ remains undefined across any international text assessed, and thus it is critical for the international heritage community to agree upon an accepted definition of *in situ* preservation, inclusive of recognised and acceptable techniques, which can then be employed as a supplemental component of the Annex and be used in lieu of specific inclusion within domestic law.

Cultural-identifiers

A key component of any heritage legislation is the identification of what classifications of tangible or intangible heritage the text applies to, whether *cultural property*, *cultural heritage*, *objects* and so on. In regards to the international documents assessed in this study, the *cultural*-identifying component is not consistent. As demonstrated in Table 27, within assessed UN and UNESCO conventions, although the terms *cultural heritage* and *objects* are employed in numerically more laws, *cultural property* is the most commonly defined identifier of value. All of the eight international laws except those associated with UNCLOS I, II, and III reference *cultural heritage*, however only one convention defines the term. Arbitrator and legal expert Guido Carducci (2002b) argues that this is because the characterisation of each term is to be expressed uniquely by each State. Therefore, lexical interpretations are to be made according to State-specific criteria and within identified jurisdictions, which makes developing “a uniform definition in an international instrument rather problematic” (Carducci 2002b, p. 150). Consequently, the oscillation of applied cultural-identifiers demonstrates a pattern of inconsistency paralleled by managerial lexicon.

Table 27 Employment of identified terms within analysed international texts. Delineations in bold refer to defined terminology.

International Texts	Antiquities	Cultural Heritage	Cultural Patrimony	Cultural Property	Monuments	Objects	Relics
1954 First Protocol		x		X	x	x	
1958 Continental Shelf Convention							
1958 High Seas Convention							
1958 Territorial and Contiguous Zone Convention							
1964 Venice Charter					X		
1970 Convention	x	x	x	X	x	x	
1972 Convention		X			X		
1982 Convention						x	
1990 Charter		X			x		
1996 Charter							
1999 Second Protocol		x		X			
2001 Convention		X				x	

The variations in inclusivity regarding identifying terms of interest are demonstrated in the first few international laws assessed in Chapter 5. Across the 1954 and 1999 Hague Conventions and the 1970 Convention, UNESCO utilises the term *cultural property*, and establishes that it includes “movable or immovable property of great importance to the cultural heritage of every people” (UNESCO Convention 1954, Art. 1.a). The 1954 (and subsequently 1999) definition specifically identifies monuments, archaeological sites, groups of buildings, works of art, scientific collections and important documents as examples of *cultural property*. As noted, *cultural heritage* is employed in conjunction with the definition of *cultural property*. The 1970 Convention introduces a more in-depth definition of *cultural property*, which specifies items of interest and associated dates of significance (see Table 9 for the definition). It omits, however, the expression *cultural heritage* from *cultural property*. Overall, the examination of the international conventions demonstrates that neither the UN nor UNESCO offer a consistent definition for *cultural property*.

As discussed, international usage of terminology has very little impact on inclusions within domestic legislation. Legal scholars identify that the legal characterisations of *cultural property* are often “‘unilaterally oriented’ and usually understood by each State according to its own criteria for the legal and material protection of the objects in its territory” (Carducci 2002a, p. 422). Should this ‘unilaterally orientated’ principle be applied to the domestic interpretations of managerial lexicon, it may impede the establishment of a global-uniform definition of the ‘first option’ for UCH management.

As shown, between the 1950s and early 1970s, international legislation inconsistently varied between the employment of *cultural heritage* and *cultural property*. As a result, not only do the definitions vary across the assessed conventions, but also there is no uniform application of cultural-identifying lexicon throughout a text. Interestingly, although the international conventions and charters assessed more commonly define *cultural property*, more recent documents associated with UNESCO, as provided on the organisation’s website, such as the UNESCO Database of National Cultural Heritage Laws Glossary (UNESCO 2009), omit a specific definition for *cultural property* and instead equate the *property* term to *cultural heritage*.

Of the 133 State Parties examined in this study, 57 SP (43%) reference *cultural property*, however, only 26 SP define the term. Comparatively, from the global legislative sampling, it is demonstrated that of the 26 defining SP, 21 have also signed onto one or more of the assessed international conventions containing a definition for *cultural property*. The remaining 5 SP to define the lexicon have only ratified the 1972 Convention and the Law of the Sea Convention; neither convention references the *property* lexicon. Indeed, although *cultural property* is the most commonly defined cultural-identifying term within the assessed international laws, the choice of this cultural-identifying lexicon is not reflected in domestic legislation. As demonstrated in Figure 46, the most frequently referenced term within domestic legislation is *monuments*, with *objects* and *cultural heritage* also more readily identified.

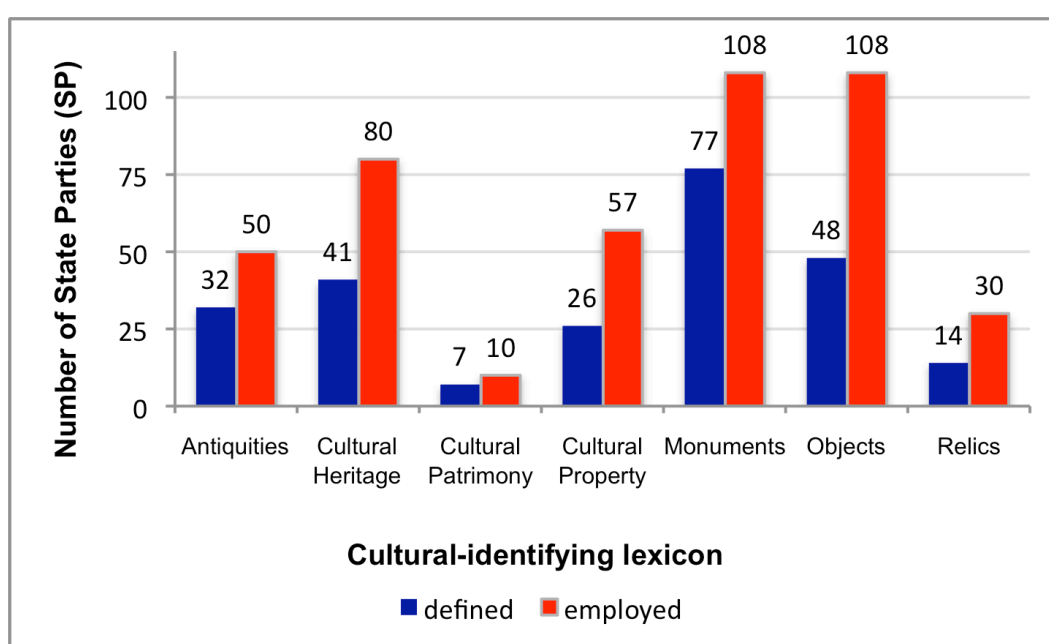


Figure 46 Global representation of cultural-identifying terminology employed and defined within assessed domestic legislation.

While UNESCO's Resolutions (1950, Sec. II, Part III, D.2) define *cultural heritage* as works, monuments and documents, what constitutes these items is not specifically detailed. It is not until 1972 that the components of the 1950s definition are established. The World Heritage Convention independently identifies 'monuments', 'groups of buildings' and 'sites' as individual components of the term (see Chapter 5 for the complete definition). In this study, the 1972 text is the only UNESCO convention analysed to define *cultural*

heritage. More contemporarily, the term is also included and described in the UNESCO Institute of Statistics (UIS) Glossary (UNESCO n.d., ‘cultural heritage’) as “the heritage that includes artefacts, monuments, a group of buildings and sites that have a diversity of values including symbolic, historic, artistic, aesthetic, ethnological or anthropological, scientific and social significance.” This definition is analogous to the 1972 text, but is more inclusive and comprises a higher level of specified criteria. As the aim of UIS is to monitor trends at domestic and international levels and to compile information in order to provide a global perspective on the areas of education, science and technology, culture, and communication, this definition can be regarded as a dynamic and relevant global representation of *cultural heritage* (UNESCO n.d.). The UIS Glossary, however, is not considered a formal UNESCO-derived text.

In much greater detail, the UNESCO Database of National Cultural Heritage Laws glossary (UNESCO 2009) independently defines *immovable cultural heritage* and *movable cultural heritage*; see Table 28 and Table 29 for the classification of each term. This particular online glossary is presented in association with the UNESCO Cultural Heritage Law website, but includes a disclaimer establishing that the facts presented in the glossary ‘are not necessarily those of UNESCO and do not commit the Organization’ (UNESCO 2009, p. 1). Therefore, the 1972 definition remains the only legally established UNESCO definition for *cultural heritage*.

Table 28 Definitions of *cultural heritage* derivate from UNESCO (2009, p. 3) Database of National Cultural Heritage glossary.

Immovable Cultural Heritage
Monuments, such as architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science; groups of buildings, such as groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science; and sites, such as works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal from the historical, aesthetic, ethnological or anthropological point of view.

Table 29 Definitions of *cultural heritage* derivate from UNESCO (2009, p. 3) Database of National Cultural Heritage glossary.

Movable Cultural Heritage
Property which, on religious or secular grounds, is specifically designated by each State as being of importance for archaeology, prehistory, history, literature, art or science and which belongs to the following categories: rare collections and specimens of fauna, flora, minerals and anatomy, and objects of palaeontological interest; property relating to history, including the history of science and technology and military and social history, to the life of national leaders, thinkers, scientists and artist and to events of national importance; products of archaeological excavations (including regular and clandestine) or of archaeological discoveries; elements of artistic or historical monuments or archaeological sites which have been dismembered; antiquities more than one hundred years old, such as inscriptions, coins and engraved seas; objects of ethnological interest; property of artistic interest, such as: pictures, paintings and drawings produced entirely by hand on any support and in any material (excluding industrial designs and manufactured articles decorated by hand); original works of statuary art and sculpture in any material; original engravings, prints and lithographs; original artistic assemblages and montages in any material; rare manuscripts and incunabula, old books, documents and publications of special interest (historical, artistic, scientific, library, etc.) singly or in collections; postage, revenue and similar stamps, singly or in collections; archives, including sounds, photographic and cinematographic archives; and articles of furniture more than one hundred years old and old musical instruments.

Nearly 100% of State Parties assessed in this study have ratified the 1972 Convention; of these 130 SP, 31% (40 SP) have domestic legislation defining *cultural heritage*. The only States in this sampling yet to ratify the World Heritage Convention are the Republic of Korea, Singapore and the Bahamas; however, the Republic of Korea defines *cultural heritage* within its own domestic legislation.

Underwater cultural heritage is not defined in an international legislative text until the 2001 UNESCO Convention. The description provided is in keeping with the earlier outlined *cultural heritage*, in that it includes “all traces of human existence having a cultural, historical or archaeological character,” but extends the criteria to include items in connection with water for at least 100 years (UNESCO Convention 2001, Art. 1.a). This definition also specifies “sites, structures, buildings, artefacts and human remains,” as well as vessels, aircraft, other vehicles and associated cargo, and “objects of prehistoric character” (UNESCO Convention 2001, Art. 1.a). Interestingly, submerged cultural landscapes are not specifically identified within the definition of UCH unless assumed a component of ‘sites’. A ‘site’ according to the UNESCO (2009, p. 9) Database of National Cultural Heritage Laws Glossary includes:

The ground or area upon which a building, town, etc., has been built, or which is set apart for some purpose. Also, a plot, or number of plots, of land intended or suitable for building purposes, and, in wider use, a piece of ground or an area which has been appropriated for some purpose; the scene of a specified activity.

In comparison, *cultural landscape* is defined by the UIS Glossary as “combined works of nature and by humans,” which should “express a long and intimate relationship between people and their natural environment” (UNESCO n.d., ‘cultural landscape’).

Although the 2001 Convention is the only analysed international text to define UCH, an equivalent term is referenced within the 1996 ICOMOS Charter and indirectly implied within previous legislative texts. Strati (1995) argues that the definition of *cultural property* in the 1970 UNESCO Convention is sufficient enough to assume inclusion of UCH within territorial waters if the underwater sites or artefacts are designated by the State. This argument also applies to ethnographic objects, which would contemporarily be associated with artefacts, submerged in inland waterways. While the World Heritage Convention does not specifically address UCH within its text, sites considered of ‘universal value’, whether underwater or terrestrial, can be protected as World Heritage, as long as the ‘valued’ site is located within a State’s territory. This means that significant heritage sites beyond a State Parties maritime jurisdiction cannot fall under the protection of this convention.

At the time of this study, 41 State Parties have ratified the 2001 UNESCO Convention – 30 of the ratifying States (75%) are included in this study. Among these, 21 SP have underwater references to cultural-identifying lexicon within assessed domestic legislation; the remaining States, however, rely on the 2001 text to outline UCH within their jurisdictional boundaries. Additionally, of the ratifying States, only one – Portugal – independently defines *underwater cultural heritage* (Table 23). Comparatively, across the 133 SP sampling, eight States (6%) define the *underwater* lexicon. Of these, only three State Parties extend custodial and managerial jurisdiction over UCH beyond the 12 nautical mile breadth of the territorial sea.

More broadly, only 16 SP (12%) from the overall global-sampling have heritage laws relating specifically to underwater cultural-identifying lexicon (i.e. China, *Regulations for Underwater Relics* 1989, US, *Abandoned Shipwreck Act* 1987). This includes: 9 SP with shipwreck-specific legislation, 7 SP with references to general UCH or submerged resources, and 1 SP specifying underwater relics (Figure 47). As demonstrated in the previous chapter, 87 SP contain reference to ‘heritage’ located underwater (Figure 37). The 65% global-

inclusion versus the 12% with specific underwater-located heritage legislation suggests it is more prevalent among States to identify ‘heritage’ within delineated maritime zones than it is to legislatively derive separate laws for ‘terrestrial heritage’ and ‘underwater heritage’. Given that all 100 States involved in the formation of the 2001 UNESCO Convention agreed to the terms of the Annex, the fact that proportionately few States are specifically inclusive of UCH in domestic legislation would indicate that many State Parties claiming jurisdictional boundaries beyond the territorial sea rely heavily on the Rules of the Annex for legal direction when managing UCH.

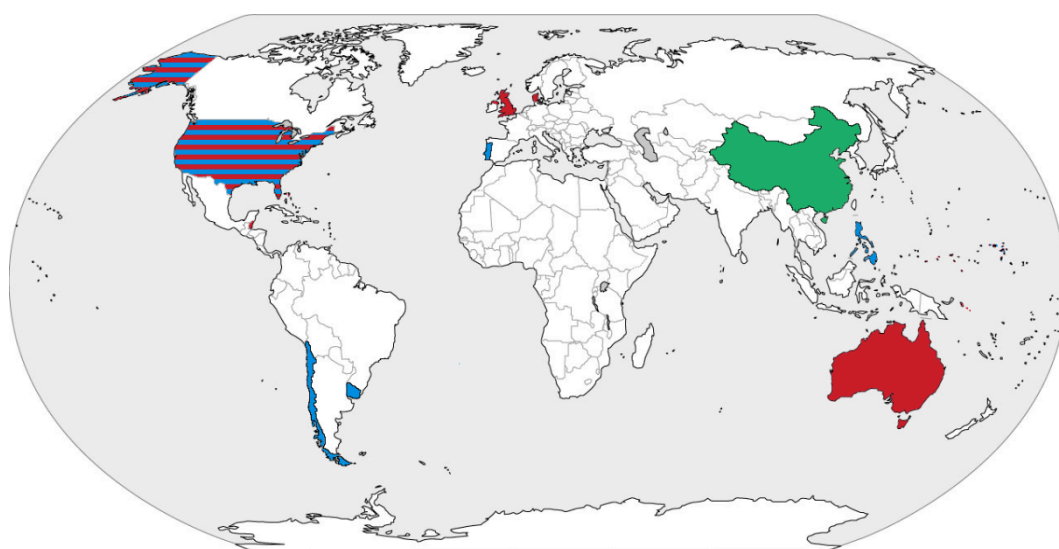


Figure 47 State Parties with UCH specific legislation. Red denotes *shipwreck*; green - *underwater relics*; blue - *underwater cultural heritage*. Striped State Parties include more than one of the represented UCH terminology.

Beyond *underwater cultural heritage*, the only other reference to underwater-located ‘heritage’ within international legislation can be found in the 1982 *Law of the Sea*, which refers to *objects* but does not detail specific inclusions within the related articles. Of the eight international conventions assessed, four refer to *objects* (Table 27) – two with underwater-associated markers and two with terrestrial associations; none of the ICOMOS charters address *objects*. No assessed international law or guideline defines the term. Comparatively, a global assessment of *objects* within domestic legislation demonstrates 81% of State Parties utilise the term, with 38% (41 SP) including an underwater reference.

Although not a legislatively bound definition, the UNESCO (2009) Database of National Cultural Heritage Laws Glossary provides the following definition of *archaeological objects or sites*:

Any place where objects, features, or ecofacts manufactured or modified by human beings are found. A material thing that can be seen and touched. Belonging to, having reference to, or dealing with archaeology. Any material remains of the past which offer potential for archaeological investigation and analysis as a means of contributing to the understanding of past human communities.

As noted, however, the glossary acknowledges the description is not derived from UNESCO texts, but instead is extracted from a range of sources including practitioners' publications and dictionaries.

Of the eight UN and UNESCO conventions analysed, only one – the 1970 Convention – refers to *antiquities*. In this context, the term is included in the definition of *cultural property* and is classified as inscriptions, coins and engraved seals that are at least 100 years old (UNESCO Convention 1970, Art. 1). Data presented in Chapters 5 and 6 further establish that although *antiquities*, *objects*, *relics* and *cultural patrimony* are cultural-identifiers employed and defined within domestic legislation they are omitted from the UN, UNESCO and ICOMOS documents assessed in this study. This further corresponds to the 'unilaterally orientated' perspective regarding the domestic identification of items of cultural significance.

In addition to *cultural property* and *cultural heritage*, *monuments* is the only other identified term of interest independently defined within the analysed international texts. *Monuments* is introduced as early as Article 1 in the First Protocol of the Hague Convention in reference to *cultural property*, but the term is not defined within an international heritage law until 1972. The World Heritage Convention (1972, Art.1) defines *monuments* as a component of *cultural heritage*, rather than *cultural property*, and articulates the term as “architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value.” Of the 130 State Parties to ratify, accept, approve or accede to the 1972 Convention, 59% (77 SP) independently define *monuments* within their domestic legislation – 14 States include reference to *monuments* located underwater. No other cultural-identifying term within this

assessment demonstrates such a comparably high usage between international and domestic legislation.

Across the international guidelines assessed, the Venice Charter also introduces a variation of *monuments*, referencing and defining the term *historic monument*. It is the only independently defined international usage of this term, without being in association with another cultural-identifier (i.e. as a component of *cultural heritage*). A *historic monument* is characterised as:

Not only the single architectural work but also the urban or rural setting in which is found the evidence of a particular civilization, a significant development or a historic event. This applies not only to great works of art but also to more modest works of the past which have acquired cultural significance with the passing of time (ICOMOS Charter 1964, Art. 1).

Practitioners argue that *monuments*, as a cultural-identifying term, is particularly important in the European context because “the word took on particular registers of power, greatness, and beauty during the seventeenth century and came to affirm a sense of grand public schemes and aesthetic sensibilities” (Choay 2001 in Smith 2006, p. 19). This argument is supported by evidence produced from the analysis of domestic legislation, which demonstrated that 63% (22 SP) of the ‘Europe and North America’ regional sampling define one or more *monuments* derivative. Globally, 108 SP utilise the term *monuments* within domestic laws, again demonstrating the significance of the lexicon within heritage-inclusive legislation. The common employment of this term across the global sampling, however, is not reflected within international legislative texts.

Cultural-identifying synopsis

In general, the data obtained relating to the use of cultural-identifiers within heritage-related legislation demonstrates a discontinuity between international and domestic texts, both in terms of lexical definitions and application. This suggests that individual State Party cultural-identifying terminology is less reliant on international legislation, and more customarily State-specific. In regards to UCH, the range of vocabulary used to identify heritage materials within domestic law is broad, and as highlighted, does not tend to be consistent among nations. Examples of identified UCH include: shipwrecks, associated shipwreck cargoes, aircraft and other transportation vessels located underwater, relics, objects and submerged cultural landscapes.

Consequently, State Parties do not directly extract lexicon or associated definitions from agreed upon global documents unless specific domestic laws are enacted as a direct result of the international legislation (i.e. domestic laws pertaining to the World Heritage Convention and the Law of the Sea). However, if a State Party ratifies an international heritage law that specifies a cultural-identifier, and a unilaterally-orientated, customary interpretation of this term is not available, the State must rely on the international rules and regulations discussed previously for definitions of the terms. This is demonstrated by those States that have ratified the 2001 UNESCO Convention but do not have a domestic UCH-inclusive legislation.

Managerial lexicon

Among the eight international conventions and three charters analysed, five employ the term *conservation*, five *preservation*, and seven *protection* (Table 30). Of these, the Venice Charter (1964, Art. 6) is the only text to define *conservation*. Specifically, this action means:

Preserving a setting which is not out of scale. Wherever the traditional setting exists, it must be kept. No new construction, demolition or modification which would alter the relations of mass and colour must be allowed.

Although none of the assessed UN or UNESCO conventions define the term, there are three UNESCO affiliated documents presented under the ‘Culture’ heading on the organisation’s website that do define *conservation*: the Database of National Cultural Heritage Laws Glossary, the UIS Glossary and the UNESCO *Manual on Activities Directed at Underwater Cultural Heritage*. Firstly, the Database Glossary describes *conservation* as:

Preservation from destructive influences, natural decay, or waste. The preservation of the environment, esp. of natural resources. The maintenance of essential ecological processes and life-support systems, the preservation of genetic diversity, and the sustainable utilization of species and ecosystems (UNESCO 2009, ‘conservation’).

Secondly, the UIS Glossary defines the term as:

The measures taken to extend the life of cultural heritage while strengthening transmission of its significant heritage messages and values. In the domain of cultural property, the aim of conservation is to maintain the physical and cultural characteristics of the object to ensure that its value is not diminished and that it will outlive our limited time span (UNESCO n.d., ‘conservation’).

Table 30 Employment of managerial lexicon within international texts. Bold refers to defined terminology.

International Texts	Conservation	<i>In situ</i> Conservation	Preservation	<i>In situ</i> Preservation	Protection	<i>In situ</i> Protection
1954 First Protocol			x		X*	
1958 Convention: Continental Shelf						
1958 Convention: High Seas						
1958 Convention: Territorial and Contiguous Zone						
1964 Venice Charter	X		x			
1970 Convention			x	x	x	
1972 Convention	x				x	
1982 Law of the Sea			x		x	
1990 Charter	x			x	x	x
1996 Charter	x			x		
1999 Second Protocol					X*	x
2001 Convention	x		x	x	x	

* Term identified and defined in both the 1954 and 1999 Hague Convention is ‘safeguarding’

Finally, the UNESCO (2012b, Rule 24) *Manual on Activities Directed at Underwater Cultural Heritage* defines *conservation* as a practice that “encompasses all measures and actions aimed at preserving cultural sites and artefacts in view of stabilizing their existing state while ensuring their accessibility to present and future generations.” This includes actions that “can be divided chronologically into preventive conservation and curative conservation” (UNESCO 2012b, Rule 24). The 2012 Manual sets out that *preventative conservation* comprises:

All indirect measures and actions aimed at avoiding and minimizing future deterioration or loss of materials or artefacts. It is carried out in situ within the context and surroundings of an object or a group of objects, or in the excavation laboratory. It should be undertaken regardless of the age and condition of the artefacts concerned (UNESCO 2012b, Rule 24).

‘Curative conservation’ is described as: “all actions directly applied to an object or group of objects and is aimed at arresting damaging processes,” and when possible includes, “stabilizing their condition against further deterioration” (UNESCO 2012b, Rule 24).

Notably, none of these four definitions are officially UNESCO supported. However, interestingly, three of the four definitions of *conservation* include the term *preservation* or a derivative thereof in the explanation of *conservation*. Should the implied meanings of the four presented definitions be integrated and applied to UCH, *conservation* thus aims to prolong the stability of the UCH, prevent further deterioration, and maintain the structure, character and aesthetic of the heritage-materials for present and future generations within the limitations of environment, knowledge and resources.

In situ conservation is neither employed nor defined in any of the assessed international texts. Of the reviewed non-UNESCO derived texts provided on the organisation’s UCH webpage, the UNESCO (2012b) Manual references *in situ* in the definition of *preventative conservation*. As such, the *conservation* derivative is not independently described. *In situ* conservation also appears in the heritage-related domestic legislation of three State Parties (2% of the sample globally); however, none of the States – Algeria, Turkey and Romania – define the term (See Chapter 6 for legislative reference). Algeria’s (*Law No. 98-04 of 1998*, Art. 77) inclusion is directed at the “owners of the edifices in which the cultural goods were discovered,” acknowledging that they will be recompensed for any limitations arising from the *in situ* conservation of cultural materials. Domestic legislation from Turkey specifies reference to immovable cultural property and its components, but notes that, should transport be necessary and in the interest of protecting the property, a move is acceptable under appropriate consent. Finally, heritage laws in Romania reference the term under the subheading of Movable Cultural Heritage. This categorisation specifically relates to ethnographic items of interest. As these three cases demonstrate, the associations with *in situ* conservation are not synonymously presented, none specify or relate to UCH, and the contexts of the term neither present nor infer associated acceptable methodologies. Therefore, *in situ* conservation, from both an international and domestic heritage-related legislative perspective, remains globally undefined.

Interestingly, although *preservation* is employed the same number of international texts as *conservation*, *preservation* – or any derivative of the term – remains undefined throughout assessed UN, UNESCO and ICOMOS conventions and charters. Similarly, *preservation* is not defined in either the UNESCO (2009) Database Glossary or the UNESCO (2012b) Manual. The UIS (UNESCO n.d., ‘preservation’) does however include the term within its glossary, stating:

The aim of preservation is to obviate damage liable to be caused by environmental or accidental factors, which pose a threat in the immediate surroundings of the object to be conserved. Accordingly, preventive methods and measures are not usually applied directly but are designed to control the microclimatic conditions of the environment with the aim of eradicating harmful agents or elements, which may have a temporary or permanent influence on the deterioration of the object.

Comparatively, the Australian ICOMOS (1999, Art. 1.6) Burra Charter defines *preservation* as maintaining “the fabric of a place in its existing state and retarding deterioration.” While both definitions present similar themes, the UIS definition more prominently describes a proactive approach to preservation, where the latter implies more intrusive preservation techniques, such as removal or relocation, would not be considered synonymous with *preservation*. Amalgamated, the aim of *preservation* is to mitigate damage and degradation caused by chemical, physical, biological and anthropogenic factors by employing techniques within the site environment that will not cause further damage to the materials or to the context of the site. This can range from passive, non-intrusive approaches through to proactive methods, as long as the chosen technique is employed to most effectively and efficiently prevent further deterioration.

In regards to the international texts reviewed in this study, *in situ* preservation is first referenced in the 1970 UNESCO Convention, in association with protecting cultural property. Within the context of the convention, State Parties must organise “the supervision of archaeological excavations, ensuring the preservation *in situ* of certain cultural property, and protecting certain areas reserved for future archaeological research” (UNESCO Convention 1970, Art. 5.d). What specifically qualifies ‘certain cultural property’ remains ambiguous throughout the Convention and is therefore subject to interpretation by State Party governments. Two decades later, the term is re-introduced in the 1990 ICOMOS Charter (Art. 6), recalling “the overall objective of archaeological heritage management should be the preservation of monuments and sites *in situ*.” This

perspective is later encouraged in the 1996 ICOMOS Charter and the 2001 UNESCO Convention, with both emphasising *in situ* preservation as the ‘first option’ for managing UCH. Eleven States, totalling 8% of the assessed 133 SP, employ *in situ* preservation within domestic legislation, however none include a definition of the term, nor do they specify acceptable techniques associated with the term. Moreover, none of the States referencing the *preservation* derivative have ratified the 2001 Convention. Therefore, at the time of this study, 75% of the State Parties to ratify the 2001 Convention exclude a reference to the ‘first option’ within their domestic legislation.

As the previous assessment of cultural-identifying lexicon has demonstrated, the intentional ambiguity within international texts affords State-specific unilateral interpretation. However, in response to the overall acceptance of the Annex by member States involved in the drafting of the 2001 Convention, and to concerns expressed by heritage practitioners regarding the clarification of details within the Rules of the Annex, UNESCO released the *Manual for Activities Directed at Underwater Cultural Heritage*. The Manual establishes that Rule 1 is encouraged because the significance of the site is “based on the recognition of the importance of the interplay between the site, its story and its context” (UNESCO 2012b, ‘Techniques for in situ preservation’). The Manual continues to present reasons for and against *in situ* preservation (Table 31). As demonstrated in Table 31, the last rationale offered for employing an *in situ* preservation approach – “many sites cannot be preserved in situ” – is inconsistent with the aim of the ‘first option’ and thus suggests an error in editing (UNESCO 2012b, ‘In situ preservation is the first option because’). The Manual also includes suggestions regarding methods for identifying acceptable *in situ* preservation techniques, however they are not listed under *in situ* preservation but rather *in situ* protection; these will be discussed shortly.

Interestingly, although Rule 1 addresses *in situ* preservation as the ‘first option’, text throughout the Manual oscillates between referencing *in situ* preservation and *in situ* protection. Moreover, although the majority of *in situ* techniques referenced by UCH managers, as presented in Chapter 4, are listed under ‘Techniques for in situ preservation’, there is concern regarding more intrusive *in situ* management. Specifically, the broader topic of underwater repositories is restricted to “under water depots in proximity to the endangered

sites, in order to stock timbers while avoiding their extraction from under water” (UNESCO 2012b, ‘Techniques for in situ preservation’). Should this expression of underwater repositories be interpreted as *the* use for storage depots, the limiting factor could deter the application of more effective management of non-timber UCH. These variations in referenced terminology and methodology could prove to be detrimental to the future of UCH management. Given that the Manual is presented as the guidebook to the Annex’s Rules, continuity in presentation should be afforded. Indeed, an expression of associated methodologies for the ‘first option’ is warranted, however, the provided guidelines to best practice within the Manual should not limit already established, effective techniques for UCH management.

Table 31 Excerpt from UNESCO (2012b, Rule 1) *Manual for Activities Directed at Underwater Cultural Heritage*. Explanations for and against *in situ* preservation of UCH.

Reasons for <i>in situ</i> preservation	Reasons against <i>in situ</i> preservation
<ul style="list-style-type: none"> • The site of a historic event is authentic, • Context defines significance, • Heritage is finite, and • Many sites cannot be preserved in situ [sic].* 	<ul style="list-style-type: none"> • There are external factors that are prohibitive, and • There are substantive reasons to excavate partially or completely.

* NOTE: This table represents materials presented on the UNESCO website. Typos on the website have not been amended for demonstrative purposes.

Out of the 11 international documents examined, the First and Second Protocol to the Hague Convention are the only texts to define *protection*, or rather ‘safeguarding’ under ‘General provisions regarding protection’. The First Protocol of the Hague Convention (1954, Art. 2) specifies “the protection of cultural property shall comprise the safeguarding of and respect for such property.” The Second Protocol (1999, Art. 5) extends the expression of ‘safeguarding’ to include “the provisions for adequate *in situ* protection.” Figure 48 expresses the regional distribution of assessed signatories to the 1954 First and 1999 Second Protocols. Interestingly, none of the analysed States from the ‘Africa’ or ‘Arab States’ UNESCO-delineated regions define *protection* within their legislation, even though a significant percentage of the ‘Arab States’ region have ratified the 1954 Convention. Similarly, only two State Parties (6%) of the

‘Asia and the Pacific’ regional sampling have defined the term, but from this grouping, only one has signed onto the 1954 First Protocol.

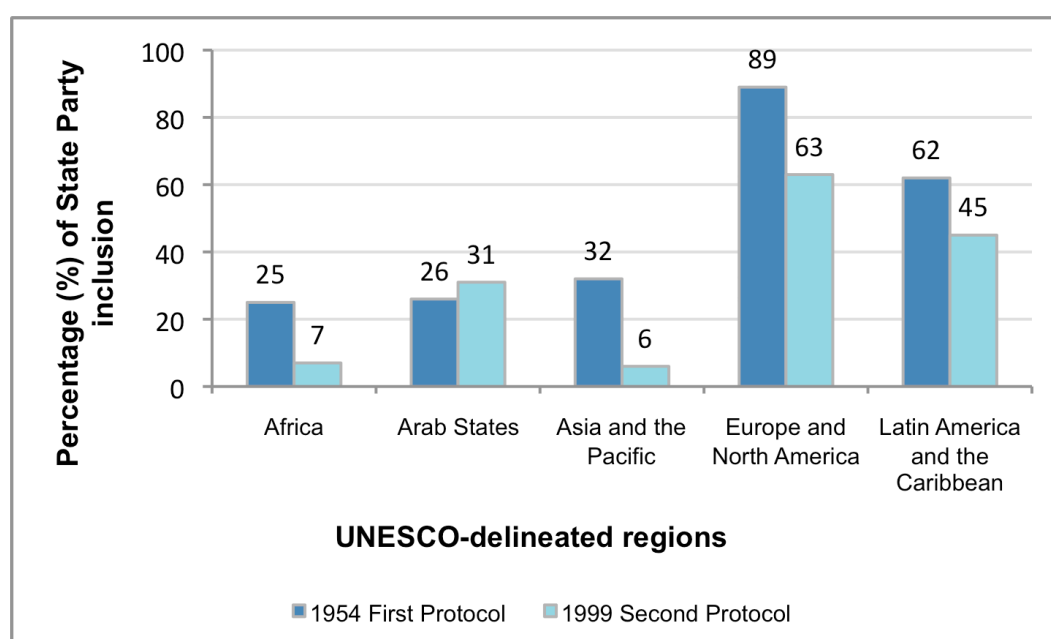


Figure 48 Regional distributions of signatories to the First Protocol of the 1954 Hague Convention.

The ‘Europe and North America’ region demonstrates the largest ratio of States to ratify the Hague Conventions. All of the 11 SP (31%) from the regional sampling to define the term *protection* have ratified both the First and Second Protocols to the Hague Convention, with the exception of Albania, which has yet to become a signatory to the 1999 Convention. Comparatively, only Cuba and Guatemala (7% of the region) from the remaining ‘Latin America and Caribbean’ region define *protection* in domestic legislation, with both States agreeing to the 1954 international law, but only Guatemala ratifying the latter Convention. Notably, although ambiguity is accepted within international texts in order to afford State Parties customary interpretation of significant terminology, there is no correlation between signatories to international conventions and inclusion of terms within domestic legislative texts.

While not legally endorsed by UNESCO, none of the UNESCO-associated glossaries reviewed in this analysis define *protection* in isolation. The *in situ* derivative, however, is provided on the UNESCO UCH website and within the UNESCO Manual. This is the only *in situ*-associated term to be defined within any assessed text in this study. According to UNESCO’s UCH website, *in*

situ protection means “the preservation of underwater cultural heritage in its original location” (UNESCO 2012c, ‘Protection’, sub-s ‘In situ protection’). Curiously, UNESCO defines *in situ* protection on the webpage pertaining to the 2001 Convention, however the *protection* derivative is not referenced within either the UCH law or the associated Annex.

The only international text to employ *in situ* protection is the 1999 Hague Convention (Art. 5), which does not directly relate to UCH. Moreover, this term is excluded from all domestic legislation assessed in this study. Comparatively, the 1970 UNESCO Convention and 2001 Convention and Annex reference *in situ* preservation, with a demonstrated 8% of member States employing the term. Therefore, the decision to define *in situ* protection as the ‘first option’, rather than emphasising the *preservation* derivative is questionable. As such, implication that *in situ* preservation is *in situ* protection can be contradicted by customary interpretation, as many State Parties (see Chapter 6) utilise *protection* in conjunction with *preservation*, rather than presenting the terms as synonymous.

UNESCO’s Manual provides nine examples of site stabilisation and *in situ* protection (Table 32); of these, eight reference *in situ* preservation techniques discussed in Chapter 4, including sacrificial anodes. The last recommendation refers to underwater depots specifically for timber storage, and implies by exclusion that an underwater repository method is not an applicable strategy to store other categories of material artefacts. As previously discussed, this concept conflicts with *in situ* storage depots established in States such as Croatia, Spain, Sweden, Egypt and Australia, which not only contain materials other than dismantled wooden hull structure, but are not all in close proximity to the original site. Of note, the ‘Protection’ sidebar on UNESCO’s UCH webpage contains five subheadings, three of which are: ‘In situ protection’, ‘Protection and Management’, and ‘Preservation’. The first subheading encourages protection *in situ* before considering recovery, but then later establishes that:

Nevertheless, *in situ* reservation is not always the best choice. A recovery can be authorized for the purpose of making a significant contribution to protection or knowledge or enhancement of underwater cultural heritage (UNESCO 2012c, ‘In situ protection’).

Table 32 Excerpt from UNESCO (2012b, ‘Objectives & Techniques’, sub-s ‘Working methods and techniques’) *Manual for Activities Directed at Underwater Cultural Heritage* .

Techniques for <i>in situ</i> preservation
<p>In deploying a policy for the protection of underwater cultural heritage, it is sometimes useful to temporarily consolidate an important site. A lot can be achieved with very simple techniques, but more extensive measures may be necessary if the aim is to consolidate a site for longer periods or to make sure that public access is compatible with protection and management. Examples of techniques used for site stabilization and <i>in situ</i> protection are sandbags, polypropylene debris netting, specific hands-on solutions, sand deposition, road barriers, artificial sea grass and the covering with geo-textiles. Artificial metal cathodes have been tested to stop metal corrosion. It is also possible to establish under water depots in proximity to the endangered sites, in order to stock timbers while avoiding their extraction from under water. All of these techniques have their advantages, but also their limitations. Sandbags may change currents, textiles may block biological gas and thought should be given to these issues beforehand. Changes should be monitored that might occur in the condition of the site, in order to measure the effectiveness of the chosen <i>in situ</i> protection strategy and to be able to act upon any possible detrimental changes. The methodology for management projects should be well-chosen and should be as non-intrusive as possible.</p>

This latter statement is repeatedly reiterated throughout the website and the 2012 Manual. As research discussed has demonstrated, not all sites should remain untouched and in place. Interestingly, within the text provided under the ‘In Situ protection’ subheading on UNESCO’s website, the terms *in situ* protection and *in situ* preservation are equally referenced and interchanged without specific differentiating between the two. Moreover, the same webpage also establishes the “special significance of heritage as testimony of a historic event as well as the attraction of the underwater environment can only be fully preserved by opting for *in situ* conservation” (UNESCO 2012c, ‘In situ protection’). Similar to *in situ* preservation, *in situ* conservation is neither independently defined on the website nor in other assessed literature provided in association with the online site.

The second subheading of interest relates to the “practical measures and control” required by UCH managers, and refers specifically to the 2001 Convention and associated Annex for guidelines and ethical working standards (UNESCO 2012c, ‘Protection and Management’). This section of the webpage also asserts that *protection* of UCH “aims to control damage from human intrusion and environmental factors” (UNESCO 2012c, ‘Protection and Management’). In order to do so, the following are associated with ‘Operational Site Protection’: “survey and establishment of inventories,” and “*in situ* protection” ((UNESCO 2012c, ‘Protection and Management’). Here, *in situ* protection incorporates long-term site protection, and includes:

Site supervision and the physical protection of sites may dissuade intrusion or damaging of submerged archaeological sites. It may also limit the damage incurred by environmental factors, such as bacteria, shipworms or storms (UNESCO 2012c, 'Protection and Management', sub-s 'Operation Site Protection').

Accordingly, actions associated with *in situ* protection encourage active techniques, i.e. 'physical protection' for site stabilisation and protection.

The subheading 'Preservation' does not discuss or introduce the term *preservation* but rather again focuses on 'Site Protection,' and sets out that "the safeguarding of submerged archaeological sites needs effective site supervision and often also physical protection" (UNESCO 2012c, 'Site Protection'). 'Physical protection' is expounded to include reburial with layers of sand, sandbags, fabric covers and nets, protective metal nets, and cage protection (see Chapter 4 for the UNESCO descriptions on each method). These examples partially correlate to the *in situ* protection techniques described in the 2012 Manual, however a number of examples from the Manual are also omitted on the website (Table 32).

Managerial lexicon synopsis

The above section demonstrates there is no correlation between managerial terminology defined in domestic legislation and State Party ratification of international conventions. Additionally, the data suggest the vocabulary referenced in either domestic or international law is independent of the other, rather than employed in parallel. Considering ambiguous international conventions are provided to enable a broader application for State-specific unilaterally-orientated legislation, if the domestic law does not present a definition for associated managerial lexicon, and neither does the international text, a practitioner-based, internationally agreed-upon glossary for best practice management is recommended to mitigate the discontinuity.

This is of specific interest, as the 'first option' for UCH management is excluded from the majority of domestic laws assessed in this study, and remains undefined within international legislation. Should *in situ* preservation continue to be encouraged as the legislative managerial term of choice – as established by the 1996 ICOMOS Charter and 2001 UNESCO Convention, it is concerning that there is no consistent utilisation within the international legislative body. Indeed, this enables the application of *in situ* preservation to be open to domestic

interpretation, however, the varying references to *in situ* terms within the UNESCO *Manual for Activities Directed at Underwater Cultural Heritage* and the UNESCO UCH website detracts from the significance of the term *in situ* preservation as the ‘first option’. In these situations, the provisions of an established definition for *in situ* preservation, which is inclusive of associated methodologies, coupled with an understanding of their application in different environments, would provide heritage practitioners with more robust support and direction in management decision-making when referencing the 2001 Convention and/or its Annex. The author acknowledges the aim of the UNESCO Manual is to do just this, however, the variation in employment of *in situ* preservation and *in situ* protection, and the questionable reference to timber depots, minimises the effective impact the Manual can have on driving best practice of UCH management.

Case studies

In order to investigate further discontinuity between international conventions, domestic legislation and practitioners’ methods of UCH management, five case studies have been selected for an analysis of managerial techniques employed on site. These include HMS *Colossus*, *James Matthews*, *Clarence*, the former Hovell Pile Light, and the Reburial and Analyses of Archaeological Remains project. The purpose of this section is to discuss if and how the practitioners’ actions fit within the definitions of managerial lexicon provided by the international texts and State specific legislation assessed in this study. Should no definition be provided within the international conventions or guidelines, the 2012 UNESCO Manual is referenced for comparison. For details on the managerial methodologies employed at each site see Chapter 4.

United Kingdom

Domestic legislation in the UK includes the *Protection of Wrecks Act 1973*, *Ancient Monuments and Archaeological Areas Act 1979*, *Protection of Military Remains Act 1986* and *National Heritage Act 2002*. The 1973 Act is the only legislation specifically designed for the protection of shipwrecks in the UK

and is employed on a case-by-case basis, requiring sites to be independently designated under the Act. Currently, there is no blanket protection of wrecks in the UK. Under the *Protection of Wrecks Act*, exploration and survey is via a permitting system, and protection for sites is ensured through the establishment of restricted areas that prohibit unauthorised access to the site, making it illegal to damage, alter or remove any component or artefact from the site or the surrounding seabed. The Act also manages diving and salvaging activities on the site.

The *Ancient Monuments and Archaeological Areas Act 1979* can refer to sites and monuments located within territorial waters but it is primarily a land-based law and “is not easily applicable to the underwater cultural heritage” (Ferro 2002, p. 337). The 1979 Act allows for the scheduling of *monuments* that are of national importance, which includes, but are not limited to, cave or excavation, vehicle, vessel, aircraft or other movable structures. Once an underwater monument has been scheduled it becomes an offense to demolish, destroy, alter or repair the site without appropriate consent; this, however, does not hinder public access to the archaeological remains.

Although the *Protection of Military Remains Act 1986* does not impact management of HMS *Colossus*, the 1986 Act is inclusive of vessels and aircraft that crashed, wrecked or were stranded while in military service. Under the provisions of this law, this includes any site or area that is either in UK jurisdictional waters or in international waters, and enables a site to be designated as a “controlled site” for the “purpose of protecting or preserve those remains” (*Protection of Military Remains Act 1986*, Sec. 1.5). The Act further establishes that a license is required in order to excavate, dive or salvage in ‘controlled sites’ and on vessels and aircraft identified in association with the military.

Within the UK, the 2002 Act places responsibilities for UCH along England’s coastal and jurisdictional waters under management from the independent State agency English Heritage. This allows the government institution to act in securing the preservation of ancient monuments, promoting the public’s enjoyment of, and advancing their knowledge of ancient monuments, in, on, or under the seabed within jurisdictional waters. As a result, English Heritage also manages the *Protection of Wrecks Act 1973*.

England – HMS *Colossus*

The 74-gun warship HMS *Colossus* sank in the Isles of Scilly in 1798. In 1975, a portion of the wreckage – most likely the bow – was identified and designated under the *Protection of Wrecks Act 1973*. The designation meant that the shipwreck and “any objects contained or formerly contained in it which may be lying on the sea bed in or near the wreck” were protected from “unauthorised interference” (*Protection of Wrecks Act 1973*, Sec. 1.1.b). Under the Act, the Secretary of the State granted a licence to Roland Morris, “a marine salver [sic] and proprietor of the Penzance Maritime Museum,” for the purposes of survey and salvage of the wreckage and associated items strewn on the seabed (Camidge 2008, p. 8).

In 1984, the designation of HMS *Colossus* was revoked and the site was once again open to inquiring divers. Maritime archaeologists from the Joint Nautical Archaeology Policy Committee (1989, p. 5) argue the 1973 Act “is hampered by the lack of a system for the identification, definition and charting of historic wreck sites of national importance, and a lack of a method of securing their preservation.” The retraction of the site designation does not deter from the site significance, however, without legislative acknowledgement, there is nothing to legally protect *Colossus* from being looted.

Within UK heritage-inclusive legislation, none of the managerial terms are defined, nor are the *in situ* derivatives employed. Moreover, nothing within the 1973 Act suggests protection requires active techniques for site preservation. Instead, protection is established by designating the site a prohibited area to a determined distance according to the location and significance of the shipwreck. Therefore, it is not legislatively mandated to apply methods of deterring site degradation. The UK has, however, agreed to adopt the Annex to the 2001 UNESCO Convention and is therefore ethically bound to mitigate further degradation. The managing governmental institution can thus request that licensees employ proactive managerial methods to mitigate site degradation.

Although the previously identified structural remains of *Colossus* no longer falls under legislative protection, in 2001, the stern of the vessel, which had been previously buried and thus remained unknown, became exposed and was subsequently designated. Shortly thereafter, in 2003, English Heritage commissioned a two-year stabilisation trial near the stern section of *Colossus*

aimed at investigating which *in situ* technique would be most effective in protecting the wooden stern within its current environment. The trial included artificial seagrass mats, Terram 4000 mats and synthetic mesh. After the two year trial, it was determined that the Terram 4000 mats were most promising, prompting English Heritage to request a trial on the stern itself. Subsequently, a small portion of the stern was surveyed and then covered with the Terram matting to monitor the long-term efficacy of the technique (Camidge 2005) (Figure 49).

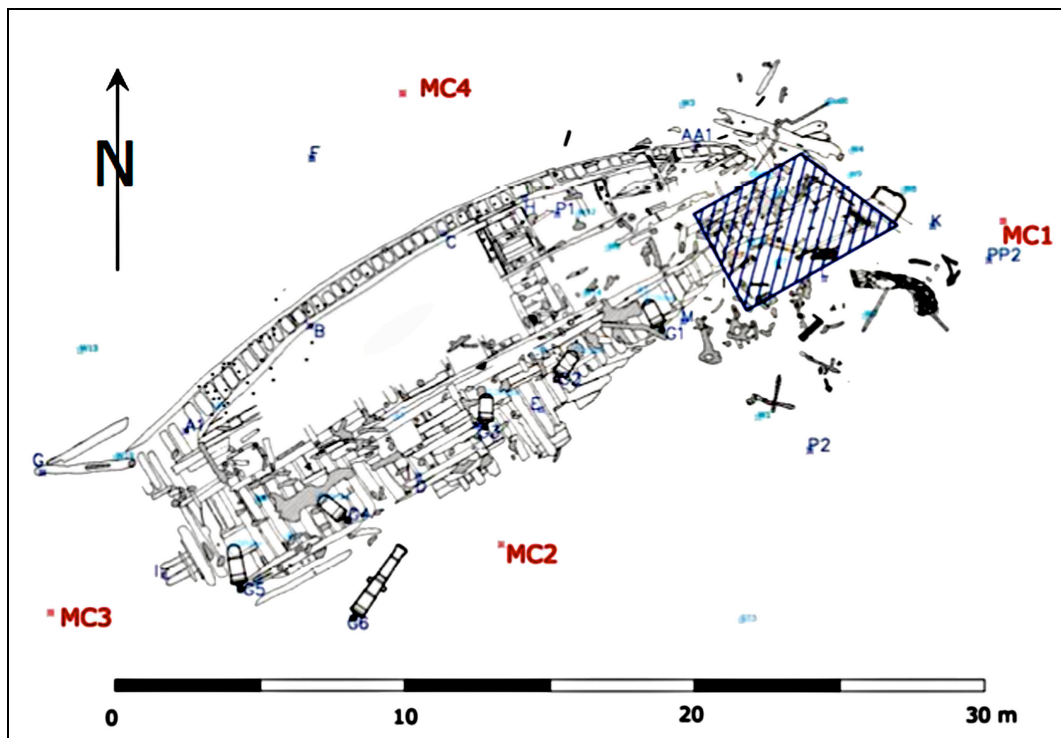


Figure 49 Site plan of HMS *Colossus* area to be protected with Terram 4000. Reproduced from Camidge 2008, p. 11.

In the case of the HMS *Colossus* project, the *in situ* techniques employed comply with Rules established within the Annex and are in accordance with practitioners' expressions of *in situ* preservation and thus best practice (see Chapter 4). However, the project is professionally driven, and not legislatively mandated, thus demonstrating a discourse between practice and law. This case study further identifies that heritage practitioners, under contract with a governmental agency, are looking beyond their domestic legislation towards the application of best practice, including the Rules established in the Annex.

Australia

Underwater cultural heritage in Australia is subject to both Commonwealth and Australian State legislation. Nationally, the Commonwealth government enacted the *Historic Shipwrecks Act 1976* in response to looting of the Dutch Vereenigde Oost-Indische Compagnie (VOC) vessels located in Western Australia in the 1960s; these were found to be beyond jurisdictional State waters and thus not managed by Western Australia's State laws (O'Keefe & Prott 1996). The 1976 Commonwealth legislation protects historic shipwrecks over 75 years old, along with their associated artefacts located within Australian jurisdictional waters – from the seaward limit of State and Northern Territory coastal waters to the outer edge of the continental shelf – as dictated by the *Seas and Submerged Lands Act 1973* and the *Maritime Legislation Amendment Act 1994*. Should shipwrecks be submerged for less than 75 years, the 1976 Act allows for protection through specific site declaration. Under the *Historic Shipwrecks Act*, heritage managers are able to restrict access to selected historic shipwreck sites by declaring a protected zone of up to 100 hectares, which can only be implemented within Commonwealth waters. The 1976 Act does not, however, protect other types of archaeological sites and artefacts found in Australian waters, including aircraft and submerged cultural landscapes.

In general, the intention of the legislation is to minimize human impact to historic shipwrecks caused by indiscriminate looting and deliberate human disturbance. Although it is not a prescribed methodology, management of sites is carried out primarily by means of *in situ* techniques including passive management, restricting access, site interpretation, publicity and education programs encouraging visitation to sites by SCUBA divers. Where necessary, surveillance and enforcement programs employed in accordance with legislation can be implemented to prevent and discourage looting.

In 2010, the Commonwealth government introduced the *Australian Underwater Cultural Heritage Intergovernmental Agreement*, which clarifies the roles and responsibilities of the Commonwealth and State Territory governments in relation to the management of UCH in accordance with the Annex of the 2001 UNESCO Convention. The Agreement is not a legally binding contract but rather a document to articulate the “obligation for the identification, protection,

management, conservation and interpretation of Australia's underwater cultural heritage" (Australian Commonwealth 2010, p. 5), ensuring that there is a cohesive national approach to managing Australia's UCH. The 2010 Agreement was put into effect after national discussions were held to amend domestic legislation in order to ratify the 2001 UNESCO Convention. Some Australian States and Territories employ general heritage laws inclusive of UCH located inland and out to three nautical miles from the designated baseline (i.e. New South Wales and Victoria). Other States employ laws specifically aimed at managing historic shipwrecks located in State jurisdictional waters (i.e. Western Australia and South Australia), which consist of internal waters out to the first three nautical miles of the territorial sea, including lakes, rivers, harbours, bays, and water leeward of territorial waters, which are managed by State and provincial heritage managers and marine officers.

In addition to the 1976 Act and State heritage legislation, a number of additional federal heritage laws are not directly UCH specific but can be considered applicable to UCH materials. These include the: *Navigation Act 1912*, *Archaeological and Aboriginal Relics Preservation Act 1972*, *World Heritage Properties Conservation Act 1983*, *Environment Protection and Biodiversity Conservation Act 1999*, *Protection of Moveable Cultural Heritage Act 1986*, and the *1972 Agreement Between Australia and the Netherlands Concerning Old Dutch Shipwrecks* (ANCODS).

The *Navigation Act 1912*, inclusive of more modern amendments, identifies the significance of historic wrecks and their associated relics, and defines the materials in accordance with the *Historic Shipwrecks Act 1976*. The 1912 Act (Sec. 316) also disassociates the interpretation of the law in regards to Part VII (regarding Wrecks and Salvage) from any salvage operation impacting "maritime cultural property of prehistoric archaeological or historical interest" located on the seabed. More generally, in 2006 the Commonwealth government enacted the *Environment and Heritage Legislation Amendment Bill 2006* to consolidate and amend previous laws such as the *Environment Protection and Biodiversity Conservation Act 1999*, *Australian Heritage Council Act 2003*, *Environment Protection Act 1978* and *Migration Act 1958*.

The 2006 Bill references World Heritage property and establishes identifying criteria for World and National Heritage values. Although there is no

specific reference to UCH, the implications are present under outlined criteria. The world heritage references stem from Australia's ratification of the 1972 UNESCO Convention and the enactment of the *World Heritage Properties Conservation Act 1983*. The 1983 Act (Sec. 3A.2.b) identifies that "the protection or conservation of the [World Heritage] property by Australia is a matter of international obligation," and focuses on property which is of aesthetic, historic, scientific or of social significance, or is internationally or nationally reputable. No management criteria associated with the 'protection or conservation' of heritage materials are established.

Moreover, a number of the objectives outlined in the *Environment Protection and Biodiversity Conservation Act 1999* include the obligation to protect and promote the environment. This also pertains to promoting the sustainability of the ecology, conservation of the biodiversity, and requirements relating to World and National Heritage. The 1999 Act (Sec. 12.3) specifies that:

A property has *world heritage value* only if it contains natural heritage or cultural heritage. The *world heritage values* of the property are the natural heritage and cultural heritage contained in the property.

This definition of *cultural heritage* presented is synonymous with the World Heritage Convention. The 1999 Act also dictates that no work, industrial or private, can be conducted on *National Heritage* property unless there is authorisation to do so. This applies to items considered to have National Heritage value, Indigenous Heritage value, or considered a National Heritage Place. Heritage value is defined as "a place [that] includes the place's natural and cultural environment having aesthetic, historic, scientific or social significance, for current and future generations of Australians" (*Environment Protection and Biodiversity Conservation Act 1999*, Sec. 528). The 1999 Act continues with management principles for National Heritage Places and World Heritage, paralleling the 1972 UNESCO Convention. The principles and criteria set out in the Act are used to identify places of cultural heritage importance for the purpose of establishing and maintaining a National Heritage List. A 'place,' however, may only be included in the National Heritage List if it is within the Australian jurisdiction and "has one or more National Heritage values" (*Environment Protection and Biodiversity Conservation Act 1999*, Sec. 324C.2); this List is not a legislative instrument.

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Sec. 3.1) extends its jurisdiction to areas of submerged lands out to “the territorial sea and any sea on the landward side of that territorial sea; the territorial sea of an external Territory and any sea on the landward side of that territorial sea; or the sea over the continental shelf of Australia,” and protects objects and areas of Aboriginal tradition. Pointedly, this legislation does not pertain to the Australian case studies examined, but is useful in establishing legislative precedent in regards to Australian jurisdictional boundaries.

The final Commonwealth legislation of concern is the *Protection of Movable Cultural Heritage Act 1986*, which references movable objects deemed significant within internal waters, extending out to the continental shelf. These objects include indigenous artefacts, ethnographic art or ethnography, military items, decorative art, fine art, objects of scientific or technological importance, written texts and other graphic documents, recordings and movies, and “any other prescribed categories” (*Protection of Movable Cultural Heritage Act 1986*, Sec. 7). The use of *protection* in the title implies control over the export and import of these objects of interest; however, no specific definition or associated *protection* methodology is presented within the Act.

In 1972, the ANCODS was signed by the Netherlands and Australia, specifically in relation to four VOC shipwrecks located off the Western Australian coastline. This document outlines guiding principles for the disposition of materials from the Dutch shipwrecks. Although the Agreement is not law, it has greatly influenced the establishment of shipwreck legislation in Australia. To date, a designated committee meets every three to five years to make decisions on the status of the VOC collection. During the 1970s, the collection was divided into three unequal parts, with the bulk of the disarticulated artefacts remaining at the Western Australian Museum. The remaining collection was apportioned between the Dutch government – housing the collection at the Rijksmuseum in Amsterdam – and the Commonwealth government – housing the materials at the Australian National Maritime Museum. This kind of division is now an out-dated approach; all of the distributed materials were returned to WAM in 2011.

Importantly, Australia follows a long history of ratifying most of the ocean-related international conventions (i.e. those pertaining to: the law of the sea, sea transportation, marine pollution, safety at sea). It is therefore expected,

based on previous UNESCO ratifications, the Commonwealth government will similarly ratify the 2001 Convention. This assumption is supported by the government's relatively recent review of contemporary UCH domestic legislation (Australian Commonwealth 2009).

Western Australia – James Matthews

The initial impetus for State government involvement in the protection of UCH stemmed from concern that artefacts from VOC wreck sites were being salvaged for private sale. The Western Australian government consequently employed the *Museum Act (Amendment Act)* of 1964, which was later replaced in 1969 to protect case-specific shipwrecks (e.g. *Vergulde*). Shortly thereafter, it was noted that certain aspects of the *Museum Act 1969* “were inconsistent with the scheme established” by ANCODS (O’Keefe & Prott 1996, p. 469). As a result, in 1973, the first serious attempt to formulate legislation specifically designed to protect shipwrecks in Australia occurred in Western Australia under the *Maritime Archaeology Act 1973*. This law afforded protection of all maritime archaeological sites – not just shipwrecks – pre-dating 1900. The Act includes shipwrecks protected under ANCODS, shipwrecks and associated artefacts in internal waters, on land, and in State waters, shipwreck survivor camps, maritime infrastructure on land (i.e. ports, harbours, whaling and pearling camps, jetties, piers), and terrestrial sites associated with maritime exploration. Under the 1973 Act, the Western Australian Museum is recognised as the managerial authority.

In July 1973, members of the avocational Underwater Explorers Club located the wooden remains of a nineteenth-century brig in two to three metres of water off the southern coast of Fremantle, Western Australia (Green et al. 2004; Henderson 2009, 1976). The site was reported to WAM and later identified as the ex-slave transport vessel *James Matthews*, which wrecked in 1841. The archaeological site comprises a range of artefacts and materials, including the wooden hull structure, iron deck knees, copper alloy fasteners, copper sheathing and slate cargo (Winton & Richards 2005). At the time of location, the majority of the site was buried under the seabed, with minimal exposure of iron knees and a mound of slate (Winton & Richards 2005). Over four field seasons, from 1973 to 1977, staff from WAM excavated the site, and at the end of each field season the shipwreck was reburied to mitigate impacting environmental factors.

In 1990, the Western Australian government enacted the *Heritage of Western Australia Act* to provide for, and to encourage, the conservation of places with significance to the cultural heritage of the State. The scope of the Act is inclusive of those maritime archaeological sites described in the 1973 Act. Within the 1990 Act (Sec. 3.1), a ‘place’ means “an area of land sufficiently identified by survey, description or otherwise as to be readily ascertainable,” and includes sites located within internal waters and any area of land situated below the low water mark on the seashore or bank of tidal waters. The definition also incorporates “as much of the land beneath the place as is required for the purposes of its conservation” (*Heritage of Western Australia Act 1990*, Sec. 3.1). *Conservation* in accordance with the law is defined to mean:

- In relation to any place, the management of that place in a manner that will –
 - a. Enable the cultural heritage of that place to be retained; and
 - b. Yield the greatest sustainable benefit for the present community without diminishing the cultural heritage significance of that place,and may include the preservation, stabilization, protection, restoration, reconstruction, adaptation, and maintenance of that place in accordance with relevant professional standards, and the provision of an appropriate visual setting (*Australia, Heritage of Western Australia Act 1990*, Sec. 3.1).

After reburial of the *James Matthews* site in 1977, the shipwreck remained relatively buried and stable within its environment. In the late 1990s, it was noted that industrial works near the coastline in the area were impacting sedimentation, causing an increase in exposure of the site. In 2003, due to the decreased sedimentation affecting the archaeological material, WAM staff decided that proactive preservation and conservation was required to help stabilise *James Matthews*. Interestingly, *preservation* is not defined in any of the examined Western Australian state legislation, however it is the term most commonly referred to in WAM publications regarding actions taken to manage *James Matthews* (Green et al. 2004; Richards et al. 2007; Winton & Richards 2005). Beyond the definition of *conservation*, no other managerial lexicon is defined in the Western Australian heritage-inclusive laws, nor are the criteria for the ‘preservation, stabilization, protection’ or other affiliated terminology expressed. Actions regarding *conservation*, inclusive of protection and preservation, are up to the discretion of regulations established by the Governor or managing institution, and thus fall under the Western Australian Museum.

As discussed in previous chapters, a range of *in situ* management techniques have been employed, and are currently being trialled on and in

association with the *James Matthews* site. These methods include sandbags, sacrificial anodes, application of shade cloth, and the trials of artificial seagrass and crash barrier units near the site. The *in situ* techniques, in conjunction with previous excavation and site reburial, demonstrate innovative thinking and initiative in regards to site management. WAM staff, in accordance with enacted laws, employed and trialled a range of proactive *in situ* management methods consistent with the definition of *conservation* within the 1990 Act and in accordance with techniques referenced in the 2012 UNESCO Manual.

As this site is one of the few known slave transport vessels in the world, the early excavation was warranted given the significance of the site. However, the subsequent *in situ* preservation techniques applied demonstrate an ever-evolving heritage management project. The methodology employed in association with *James Matthews* is an example of how supportive domestic legislation, in conjunction with available resources, can integrate investigation, excavation and *in situ* management – inclusive of *in situ* conservation (i.e. sacrificial anodes) and *in situ* preservation (i.e. sandbags, shade cloth).

Victoria – Clarence

Victoria's state-specific *Historic Shipwrecks Act 1981* enabled heritage practitioners to manage shipwreck sites with a range of acceptable methods, "from passive monitoring for less significant sites, to the complete prohibition of access to sites that are considered to be highly significant and sensitive to disturbance" (Heritage Victoria 2010, p. 3). This law, however, only applied to shipwrecks and associated objects. The State also enacted the *Aboriginal and Torres Strait Islander Heritage Protection Act 1972*, which is inclusive of Indigenous UCH; however, this legislation does not directly pertain to this case study.

In 1982, the Maritime Archaeology Association of Victoria (MAAV) located a wooden shipwreck approximately 300 metres offshore, at a depth of four metres in the Coles Channel of Port Phillip Bay. The discovery of the site was reported to the Victorian Archaeological Survey, Maritime Archaeology Unit (MAU). Once the shipwreck was identified as the nineteenth-century wooden vessel, *Clarence*, MAU began implementing a long-term, multiphase project that included further historical research, a pre-disturbance survey and excavation.

During regular monitoring of the site between 1982 and 1985, staff from MAU noted no evidence of increased deterioration, suggesting the site had reached a relative state of equilibrium within the Bay environment. Unfortunately, local fisherman and scuba divers were aware of the recent discovery and the site was therefore in danger of disturbance and looting.

As a result, on September 11, 1985, *Clarence* was designated as a 'Historic Shipwreck' under the 1981 Act, and as per Section 12.1, a 3.1-hectare protection zone was declared around the site to deter boating and fishing activities directly above the cultural materials. Unfortunately, the area is not regularly policed and frequent anchoring over the wreckage has resulted in severe damage to the site. This is of great concern to heritage managers, given that *Clarence* is the earliest and best-preserved example of an Australian-built trading vessel located in Victoria.

When MAAV first located *Clarence*, it was covered in marine growth and was surrounded by a sandy bottom interlocked with weed and seagrass. In 1985, a non-disturbance survey was conducted, which identified that while some of the site remained buried in the seabed, much of the ships' components were exposed. These included the forward and starboard bulkheads (protruding one metre above the seabed), paired frames along the starboard side, elements of the Baltic pine decking and wooden deck knees along the starboard side, and the breast hook was still *in situ* (Harvey 1989, 1986). Overall, all but the stern-quarter of the vessel was exposed.

Due to the age and significance of the site, in 1987, MAU began a test excavation using volunteers from the local dive community. The aim of the project was to minimise further exposure of the wreck, monitor sediment levels on site and extract a sample of artefacts for further analysis (Harvey 1989). No additional *in situ* preservation techniques were employed after excavation other than standard backfilling of the excavation trenches. Additional environmental assessments were also conducted on site at this time, providing ample baseline data for future research.

As part of the ongoing site monitoring, in 1993, MAU again noted there was a considerable loss of sediment over the wreck. At this time, managing staff placed artificial seagrass mats on the bow of *Clarence* (Pers. Comm. Peter Harvey 2012). As discussed in Chapter 4, shortly after deployment, this method proved

unsuccessful due to the fouling of the mats caused by anchors from local fisherman.

In 1995, content of Victoria's *Historic Shipwrecks Act 1981* was incorporated into a broader state heritage law, the *Heritage Act 1995*. The 1995 Act protects shipwrecks and their associated objects which have been situated in State waters for a minimum of 75 years. This law also allows State managers to establish protected zones around a site up to 100 hectares, should the site prove too vulnerable or historically significant for human impact through visitation. These parameters apply to "any remains of a ship or articles [that] have been removed from Victorian waters at any time" (*Heritage Act 1995*, Sec. 100.6), and applies 'regardless of whether or not the existence or location of the remains or articles is presently known' (*Heritage Act 1995*, Sec. 100.5). Moreover, under this law, any artefact associated with a historic shipwreck site, whether *in situ* or removed from the water, remains protected by the State.

Not until 2012 was another *in situ* preservation approach applied on the *Clarence* site. At this time, *Clarence* was selected as the site for the Australian Historic Shipwreck Preservation Project (AHSP), funded by the Federal Government's Australian Research Council. This historic shipwreck was chosen for the reburial project because of the extensive monitoring and baseline data available from the previous work conducted during the late 1980s and early 1990s.

The aim of AHSP was to develop a best practice strategy for the *in situ* preservation and reburial of historic shipwrecks at risk of accelerated degradation due to natural or anthropogenic impact. Methodology included a biological assessment of the site, excavation of a portion of the vessel, survey of exposed artefacts and hull structure, extraction of artefacts for *ex situ* documentation including cataloguing, cleaning, photographing, and X-ray imaging if required, and wrapping in geotextile and shade cloth in preparation for reburial (Figure 50). Project results are expected to help develop a new national policy and technical guidelines for UCH management prior to the amendment of the Commonwealth *Historic Shipwrecks Act 1976* and ratification of the 2001 UNESCO Convention. Based on the number of artefacts exposed during excavation and the minimal sediment cover over *Clarence*, project leaders decided to rebury the recovered organic materials (including the components of wooden casks, elements of rope,

pieces of leather, bone and other loose wood) less than 10 m south of the wreck, at an approximate depth of 1 m below the seabed. This reburial depth is based on results obtained from the RAAR project in Marstrand, Sweden, and similar reburial research projects occurring concurrently internationally.



Figure 50 Sequence of methodology for the rapid recording and preparation for reburial of artefacts extracted from *Clarence*. Upper left: photograph and record. Upper right: cover each individual artefact with geotextile. Bottom left: keep materials wet. Bottom right: wrap materials in shade cloth. Courtesy of AHSPP.

So that the materials could be effectively reburied to the required depth without the walls of the trench collapsing, a polyethylene circular water tank was cut to height and dredged into the sediment. Although a square device would be preferable for this application – as the curvature of the tank juxtaposed the straight lines of the wrapped artefact packages – the round tank established a semi-permanent *in situ* storage depot within the protected zone, and provided the organic materials the optimal reburial depth. Similar reburial methods were initially intended for the ferrous and non-ferrous artefacts obtained from the excavation; however, there were not a large number of recovered items, and

therefore they were reburied within the hull structure. These objects were sorted by metal type and wrapped in geotextile and shade cloth prior to reburial on site, along with the organic artefacts. According to the Victorian *Heritage Act 1995*, the placement of artefacts in an underwater repository, whether near the site or in a different underwater location, does not detract from their legal protection. Additionally, while *in situ* management techniques are not specifically referenced in the definition of *conservation*, the *in situ* preservation conducted on *Clarence* adheres to the Act's definition which includes "the retention of the cultural heritage significance of a place or object; and any maintenance, preservation, restoration, reconstruction or sustainable use of a place or object" (*Heritage Act 1995*, Sec. 3).

According to the UNESCO Manual and the Annex of the 2001 Convention, the *in situ* techniques employed during AHSPS predominantly comply with the suggested practice. The Manual specifies that storage underwater applies to wooden timbers placed near the site, and AHSPS extends the repository concept to include other organic objects, with the initial intention to have a similar, but separate underwater repository for metal objects. Other than the amended application of the placement of repository items, the sandbags and shade cloth placed over the excavated site after exposure and around the objects after *ex situ* examination, fall under acceptable practice for UCH management under the Annex.

Victoria – the former Hovell Pile Light

The same heritage legislation applying to the *Clarence* shipwreck site also impacts the former Hovell Pile Light. Unlike the Victorian site discussed above, fHPL did not have a protection zone extended around the archaeological remains. Moreover, as discussed in Chapter 4, the site was going to be impacted by the Port Melbourne Channel Deepening Project and, therefore, in response to potential damage to a site listed on the Heritage Register, the managing Agency, Heritage Victoria, hired a consulting company to survey, record, excavate and relocate the remains.

Practitioners engaged in the survey assert that the methods employed for site excavation, relocation and reburial are in accordance with the 2001 Convention and associated Annex – not just regarding the protection afforded the

UCH but also in terms of the ‘first option’ management (Coroneos & Raupp 2009; Raupp et al. 2009). However, in regards to the UNESCO Manual’s interpretation of *in situ* preservation – as it is currently presented – and a number of other previously discussed definitions for the *in situ* term, the relocation of fHPL should not be considered an *in situ* technique because the archaeological remains are no longer *in place*.

Heritage practitioners involved in the relocation and reburial of fHPL argue “certain environments are capable of slowing deterioration, such as the anaerobic environment,” and that the goal should be to recreate an oxygen-free location to help stabilise the site (Raupp et al. 2009, p. 82). Therefore, the specific location for re-deposition was based on the understanding that the designated South East Dredged Material Ground (DMG) would place up to 4.5 m of dredged sediment above the UCH (Raupp et al. 2009, p. 83); thus enabling a sufficient reburial depth in accordance with the above-discussed 1 metre depth. By keeping the materials in conditions similar to their pre-exposure environment, the applied management approach promotes preservation and thus meets the ‘first option’ principle, as much as is practical in the context of factors affecting the site. Currently, however, until practitioners agree upon associated techniques for *in situ* preservation – inclusive of relocation and reburial – questions remain as to whether the methods applied to fHPL should be considered an example of ‘first option’ management.

Sweden

This study identified five domestic cultural heritage laws in Sweden: the *Heritage Conservation Act 1988*, *Heritage Conservation Ordinance 1988*, *Act on the Protection Against the Export of Certain Ancient Articles of Cultural Heritage 1985*, *Planning and Building Act 1987*, and *Environmental Code 1999*; not all of the Acts are inclusive of UCH. The 1988 Act is the primary cultural heritage law, which protects place names, ancient remains, archaeological finds, historic buildings, ecclesiastical monuments and the export of antiquities. This Act includes shipwrecks more than 100 years old, along with remnants of maritime industry, and not only pertains to the physical remains of the cultural materials but also “includes a large enough area of ground or on the seabed to preserve the

remains and to afford them adequate scope with regard to their nature and significance” (*Heritage Conservation Act 1988*, Sec. 2). Moreover, if culturally significant heritage items are discovered during a project or private enterprise, it becomes the economic responsibility of the permitted developers to cease activities while assessment is taking place. Should these materials require relocation for protection and/or conservation, the National Heritage Board and the County Administrative Board can give permission to facilitate action (*Heritage Conservation Act 1988*, Sec. 7). Underwater cultural heritage in Sweden is also protected from negative impact of human engagement under the 1985 Act (Part 15), asserting that, among other restrictions, metal detectors cannot be “carried on or near shipwrecks” unless employed in an archaeological examination.

The General Provisions of the *Environmental Code 1999* (Ch. 1, Sec. 1.2) establish that “valuable natural and cultural environments are protected and preserved.” This includes areas of national interest that may contain significant natural or cultural environments (*Environmental Code 1999*, Ch. 3, Sec. 6). The Code also identifies that the purpose of an environmental impact assessment “is to establish and describe the direct and indirect impact of planned activity or measure on ...the cultural environment” (*Environmental Code 1999*, Ch. 6, Sec. 3). None of the legislation assessed in association with Sweden define any of the managerial lexicon or the *in situ* derivatives addressed in this study.

Marstrand Harbour – Reburial and Analyses of Archaeological Remains project

As discussed in Chapter 4, the RAAR project assesses various reburial conditions and outcomes for archaeological materials, including the modern materials and techniques employed as part of the reburial process. A key component of the project is that this management technique “seeks to emulate a pre-excavation (*in situ*) environment that has been benign for the preservation of archaeological remains for centuries,” and that the application of the technique does not require the reburial to take place in the original location (Bergstrand & Nyström Godfrey 2006, p. 7). In this regard, those involved in the RAAR project present a different set of associations with the concept of *in situ* management, that emphasises the *in place* environment in relation to the chemical, biological and physical factors impacting site stability rather than maintaining the physical

location itself. By recreating pre-exposure conditions, the UCH, as interpreted by RAAR practitioners, remains within an *in situ* environment.

In association with the RAAR project, two seminars were held in Sweden in 2001, specifically focusing on the concept of reburial. The first addressed the scientific methodology and the second focused on the administration and jurisdictional status of the project. Conclusions drawn from the second seminar include those found in Table 33. Interestingly, the RAAR results suggest reburial should not be considered “an end solution,” but rather as “temporary storage until more favourable conditions permit retrieval and conservation” (Bergstrand & Nyström Godfrey 2006, p. 16).

Sweden’s *Heritage Conservation Act 1988*, however, does not address reburial of relocated UCH within the context of the law. Thus, archaeological materials relocated to an underwater storage depot *ex situ* – despite being reburied in an *in situ* environment – are not protected under the 1988 Act. Depending on the location of the underwater repository, artefacts reburied could be managed under provincial law or be protected by civil laws (Nyström Godfrey et al. 2012). In spite of the legislative omission, practitioners have continued to apply these methods on domestic projects, which has led to the topic of reburial and relocation being placed on the agenda for future legislative amendments (Bergstrand & Nyström Godfrey 2006). Consequently, should underwater repositories become a more frequently applied management tool for the reburial of UCH in other countries, heritage managers will need to address the concern of legal custodianship of relocated UCH. There is, therefore, an onus on both practitioners and lawmakers to determine how such actions fit within enacted legislation, and to establish amendments accordingly.

Moreover, researchers are still investigating the effects of reburial in underwater repositories on archaeological remains in order to help develop internationally accepted guidelines as to what can and cannot be reburied, how the materials should be organised and the length of time the UCH can remain in underwater storage. As research results continue to direct the practical application of underwater storage, heritage practitioners should re-evaluate the definition of *in situ* preservation and associated methods to include those utilised in the RAAR project. Currently, however, UNESCO’s UCH website and UNESCO Manual do not equate the reburial trenches or techniques employed on the project as *in situ*

because the original context has been disturbed, despite the focus on re-establishing or improving the pre-exposure environment, and a range of artefacts – not just timber structural remains – have been re-deposited in the trenches. Indeed, the vocabulary and associated application of individual terms should be synonymously defined for universal application.

Table 33 Excerpts from Bergstrand & Nyström Godfrey (2006, p. 17) regarding reburial of archaeological materials in Swedish waters.

Conclusions regarding reburial within Swedish territorial waters.
<ul style="list-style-type: none"> • The cost of reburial will be less than for conventional conservation, while the cost for management and use will be more. • Since reburial depots are not protected by the Heritage Conservation Act, some other form of legal protection needs to be applied, e.g. regulations in planning instruments, land encumbered with an easement etc. • An important question is that of responsibility. Who is responsible for the reburied ship remains and artefacts and what does the responsibility entail? According to existing legislation the museum responsible for the excavated finds is also responsible for the reburial depot, since this storage is considered equivalent to normal land based museum storage. However, the developer of a site should be held partly responsible for costs involved in constructing the depot. • Access to the finds for the public and for research is severely reduced. To a certain extent thorough documentation and a well-defined selection of finds that are not reburied can counteract this. • There are no accepted guidelines as to what should and should not be reburied. Thus far reburials in Sweden have been selected primarily when conservation costs have been seen to be unreasonable in relation to the cultural and historical values of the finds.

Conclusion

Throughout this chapter, the presentation and application of a range of data has been correlated, compared and analysed. The conclusions from this analysis suggest there is minimal overlap between cultural-identifying lexicon in international texts and domestic legislation. This is largely due to customary laws and unilaterally orientated interpretations of inclusive cultural materials. These inconsistencies, however, establish precedence in regards to the universal acceptance of defined managerial lexicon. Although *conservation*, *preservation* and *protection* are employed throughout the assessed conventions and charters, the exclusion of both legislatively defined managerial terminology and recognised, prescribed techniques can negatively impact the establishment of a universal best practice of UCH management.

The 2001 UNESCO Convention and 1996 ICOMOS Charter both emphasise *in situ* preservation as the ‘first option’ for UCH management, but none of the State Parties referring to *in situ* preservation within their legislation do so in conjunction with UCH. For the States adopting the Annex in lieu of the 2001 Convention itself, the omission of an expressive definition leaves domestic legislation and practitioners aiming to adhere to the ‘first option’ without universal guidelines. It is the understanding of the author that the inclusion of *in situ* preservation within international legislative texts was primarily to deter the increasing popularity for treasure hunting and looting of shipwrecks. However, since the 1990s, UCH studies have evolved and the application of the term has a greater capacity to administer proactive management rather than reactive deterrence. Practitioners arguing that neglecting a site located in a dynamic natural environment cannot be considered *in situ* preservation, even if domestic laws protect the UCH from anthropogenic interference, supports this perspective.

Beyond an undefined ‘first option’, there are additional concerns for practitioners regarding the utilisation of *in situ* managerial terminology. As demonstrated in Table 30, *in situ* preservation is referenced in both UNESCO conventions and ICOMOS charters, however, *in situ* protection is only identified in ICOMOS charters, and none of the international texts are inclusive of *in situ* conservation. Comparatively, although only a small percentage of assessed State Parties reference *in situ* preservation and *in situ* conservation within domestic legislation, none of the States assessed reference *in situ* protection. More distinctly, this means that at least 133 of the 195 State Parties affiliated with UNESCO omit *in situ* protection from their domestic cultural heritage laws. Thus, the decision to define the least referenced *in situ* term raises a number of questions for practitioners: since UNESCO and UNESCO-affiliated texts define *in situ* protection, should practitioners and domestic legislation adopt the defined *in situ* managerial term, or should they continue to reference *in situ* preservation? More specifically, the issue is exemplified in the UNESCO Manual, where both *in situ* preservation and *in situ* conservation are referenced within the characterisation of *in situ* protection. If the *conservation* and *preservation* derivatives are components of a more encompassing *in situ* protection, what differentiates the *in situ* lexicon? Does UNESCO have pre-conceived associations for each term? Or do the legislative connotations of *protection* versus the

managerial associations with *preservation* have a greater impact on textual inclusion? Does UNESCO consider the terms synonymous, but differentiate based on who (i.e. the lawmaker or the practitioner) employs the managerial lexicon?

As demonstrated with the case study analysis, heritage practitioners' interpretations of *in situ* preservation are not necessarily compatible with the applications and associations presented in the assessed international texts and supplemental texts. The methods employed extend beyond the expressed associations for *conservation*, *preservation* or *protection* and integrate more scientific and methodological advancements in heritage management than a basic interpretation of the law. As is discussed in the following chapter, a global push towards a definition and characterisation of *in situ* preservation, within the internationally accepted best practice for UCH management, will aid in clarifying the noted discrepancies between law and practice.

8

Where it lies: a perspective on UCH management

This study is an assessment of the relationship between the interpretation of legislation and applied practice relating to the management of underwater cultural heritage. It is a textual analysis, comprising an examination of three main literature sources: practitioners' publications pertaining to UCH, international heritage laws and guidelines, and domestic legislation inclusive of cultural heritage. The aim of the study is to determine if, and where, there are weaknesses between cultural heritage manager's interpretation of law and practice with regard to the care for and utilisation of UCH resources. The inconsistencies observed as a result of the literature analyses suggest that clarification is required to better unify the legislative managerial lexicon and the UCH management methodologies employed by practitioners, specifically regarding *in situ* techniques. This chapter more closely addresses the discrepancies between data obtained from the previous chapters and considers possible solutions for strengthening the relationship between legal text and applied UCH management.

Divergence in text

It is universally accepted that within the legal context, definitions of cultural-identifying terms are framed by the sociological context of the time, and influenced by "other non-legal disciplines such as history, art, archaeology, ethnography, etc." (Sheng 2008, p. 59). However, these state-specific interpretations of what constitutes 'cultural heritage', and, in the context of this

study, specifically *underwater* ‘cultural heritage’, should not limit the effective management of heritage materials, nor should they impede on the development of a global best practice.

Data analyses suggest that inconsistencies regarding the use of managerial vocabulary within the assessed legislation could be due to a lack of international clarification and consensus legal interpretation of the terms. For example, only 12 of the 133 State Parties assessed in this study, representing 9% of the global sample, provide a definition of one or more of the identified managerial terms. Similarly, only 27% of the international texts analysed – two conventions and one charter – offer specific characterisation for any of the included managerial terms, which are *conservation* and *protection*. *Protection* is the only legislatively defined term, which is referenced in the context of the *in situ* safeguarding of cultural property and provisions. Within both the international and domestic laws and guidelines assessed, no explicit methodologies are presented in association with the definition of *protection*. Furthermore, no derivative of *conservation*, *preservation* or *protection* is defined in relation to *in situ* management in any legislation - international or domestic.

The analyses within this study also suggest that legal differences are assumed between managerial terms. The identified terms of interest are inconsistently presented both within and among international texts, with the application of phrases such as ‘protection, conservation’ (UNESCO Convention 1972, Art. 4), and ‘protection and preservation’ (UNESCO Convention 2001, ‘Preamble’) providing no clear differentiation between the terms. Similarly, State Party laws inter-relate the managerial terminology. For example, Ethiopia, Namibia, South Africa, Australia, the Philippines and Macedonia include *protection* and *preservation* when defining *conservation* (see Chapter 6). Should the terms be considered synonymous, they would not be juxtaposed within a text - more specifically, they would not be employed congruently to define each other. Indeed, such an overlap of usage of the terms suggests that neither the individual States nor the international organisations have clear parameters regarding UCH terminology, and are seeking to afford broad, non-specific interpretation. These variations in lexical representation, including the *in situ* derivatives, impact the development and application of a clearly defined universal best practice for UCH management.

Beyond the apparent or implied definitions associated with managerial vocabulary, there is an imbalance of utilisation regarding *in situ* terminology within both international and domestic laws. For example, while none of the assessed international documents reference *in situ* conservation, three States Parties employ the term, but none provide a definition. Among the assessed international supplemental texts, however, *in situ* conservation is referenced on the UNESCO UCH website, in association with *in situ* protection. In this context, the website sets out that UCH and its environment “can only be fully preserved by opting for *in situ* conservation” (UNESCO 2012c, ‘Protection’, sub-s ‘In situ protection’). Conservators and research scientists David Gregory and Henning Matthiesen (2006, p. 309) suggest this utilisation of the term could be based on an interpretation of *in situ* preservation as a “form of preventive conservation,” implying the terms are interrelated under a more broad affiliation with *in situ* protection. The vague representation of the three distinct terms within the UNESCO UCH website further demonstrates the lack of clearly defined legislative or practical characterisations of *conservation*, *protection* and *preservation*. In order to independently apply the terminology, it is important to outline the specific implications and parameters of each *in situ* managerial term, as well as to identify how they relate to each other.

Independently, *conservation* relates to the physical measures taken to extend the life of materials, whilst maintaining the cultural characteristics of the objects. It includes the stabilisation and, when appropriate, the restoration of the extracted artefacts. *Ex situ*, this includes techniques such as extracting salts from waterlogged objects removed from a marine environment, de-concreting metal artefacts and chemically treating the heritage objects to minimise future degradation. *In situ* conservation applies similar principles without removing the UCH from the wet environment. As discussed in Chapter 4, this specifically refers to the application of sacrificial anodes on metal artefacts and features. For organic materials, based on the abovementioned principles of conservation, waterlogged wood, leather, food remains and other organic materials cannot be conserved in a saltwater environment.

Interestingly, the term is not identified in either of the UCH-specific international texts – the 2001 UNESCO Convention and associated Annex or the

1996 ICOMOS Charter. The only indirect reference to conservation *in situ* within the three documents is found in the Annex, in which:

In cases of urgency or chance discoveries, 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 (UNESCO Convention 2001, Rule 13).

Although the above quotation does not specifically reference *in situ* conservation, it can be inferred that ‘conservation measures or activities’ aimed at site stabilisation are synonymous with the managerial derivative.

While the term *in situ* conservation is not utilised within the assessed international texts, *in situ* protection is referenced by both the 1999 Hague Convention and the 1990 ICOMOS Charter. None of the analysed State Party laws are inclusive of *in situ* protection. Although neither the UNESCO nor ICOMOS text defines the protection derivative, the term is presented on the UNESCO UCH webpage as a means of preserving a site in its original location, and thus *in situ* is interpreted in the literal sense. This parallels the usage of the ‘first option’ of UCH management within both the 1996 ICOMOS Charter and the 2001 UNESCO Convention and associated Annex. Therefore, based on the observed characterisations of *in situ* protection and *in situ* preservation, it can be inferred that UNESCO and its contributing member States regard the two as synonymous terms. The close association of the terminology could represent an effort to equate law (i.e. *protection*) with practice (i.e. *preservation*). Amongst practitioners, however, not all of the methods associated with *in situ* preservation (see Chapter 4) are in accordance with the interpretation of *in situ* protection as presented on UNESCO’s UCH website or within the *Manual on Activities Directed at Underwater Cultural Heritage*.

In general, *protection* is construed as the effort to prolong the stability, context and condition of a site. While UNESCO’s description of *in situ* protection emphasises the physical location as the *in situ* context, it does not provide reference to whether passive or active methods are preferred. From this perspective, the relocation of parts or all of a UCH site to prevent destruction, such as was discussed in regard to the *Day Dawn* shipwreck, would not fall within the outlined criteria for *in situ* protection – or, by implication, *in situ* preservation. Similarly, the work conducted by Parks Canada on the Basque whaler in Red Bay,

Canada, would also be excluded from association with either *in situ* protection or *in situ* preservation, based on the excavation and relocation of heritage items. Although the reburial of ship timbers in Red Bay was revolutionary at the time, the utilised management methods are not congruent with the contemporary baseline-interpretation of leaving the site *in situ*, in the literal sense. A combination of these techniques, i.e. excavating, relocating and reburying UCH – such as with the former Hovell Pile Light – would also not be considered *in situ* management if UNESCO's presented definition of *in situ* protection were applied. Interestingly, within professional publications, *in situ* protection is referenced in regards to the archaeological work conducted in Red Bay, while *in situ* preservation is cited in association with the Port Melbourne fHPL activities (Bernier 2006; Coroneos & Raupp 2009; Raupp et al. 2009).

Across the international and domestic texts analysed, *in situ* preservation is the more commonly referenced *in situ* managerial term – two international conventions, two charters and 11 State Parties utilise this vocabulary. However nominal in the greater context of heritage legislation, the more common representation of *in situ* preservation parallels utilisation of the term amongst practitioners' publications. Unfortunately, none of the legislative texts assessed, provide acceptable guidelines or present a range of methods for *in situ* preservation; the recently published *Manual on Activities Directed at Underwater Cultural Heritage* does reference acceptable guidelines, but as discussed throughout this body of work, also contradicts contemporary use of underwater repositories.

Data presented in this body of work also identify a dichotomy among heritage managers regarding the representation of *preservation* terminology; some argue for more passive management, whilst others relate any active action that prolongs or assists in stabilising, conserving, preserving and protecting a site underwater as *in situ* preservation. The more progressive methodologies include relocation in order to decrease degradation of UCH materials. Indeed, these more active techniques – applied with the aim of negating impacting factors – have revolutionised how many practitioners approach site management. With experimental trials on archaeological sites ongoing around the world and a dissemination of information internationally, active management methods are advancing and gaining wider recognition.

For many UCH managers, the more static associations of *in situ* preservation may be viewed as the historical basis from which the practice can evolve. Prior to the legislative inclusion, practitioners were trialling reburial techniques to minimise site degradation, which included the relocation and covering of sites. The impetus to utilise *in situ* within international conventions and guidelines, however, stemmed from a “more technical international consensus on methodologies and objectives of underwater archaeology,” focusing on leaving materials in context in order to deter treasure hunting and the removal of UCH from the seabed (Carducci 2002b; Dromgoole 2010; Prott 2006; Pers. Comm. Graeme Henderson 2012). This resulted in the international documents identifying *in situ* preservation as the ‘first option’ in order to strengthen the principle that no-one, including heritage practitioners, should remove UCH from its original location unless the appropriate measures and funds are available to ethically manage *ex situ* materials. Unfortunately, since inclusion of the ‘first option’ within international texts, active measures associated with the *in situ* methodology (i.e. relocation and reburial) have grown beyond merely a ‘do not touch’ perspective. Should heritage managers employ a passive, ‘do nothing’ approach, certain objectives must be met in order to ethically leave a site untouched, ensuring a stable site environment and limited human access. An additional concern with passive management is that this perspective encourages State bodies to associate UCH with immovable property, and within law, from the World Heritage Convention to domestic legislation, can have negative consequences for the betterment of the site.

More recently, the accepted implications of *in situ* management have shifted beyond simply deterring anthropogenic interference, to also include active intervention with the purpose of mitigating degradation and destruction from impacting environmental factors. This progression is reflected in the broad range of active *in situ* management trials occurring globally, the results of which are discussed at international *in situ* heritage conferences (i.e. the Preserving Archaeological Remains *In Situ* Conference) and widely disseminated within professional publications. Overall, many researchers currently suggest that *in situ* management should aim to re-establish the *in situ* environment during time of reburial, not necessarily requiring *in situ* materials to remain *in place*. As discussed in Chapter 4, active site management can include any technique, or

combination thereof, suited to the site-specific environment – excluding the toxin approach.

As practitioners' approach to UCH management evolves to include the mitigation of impacting environmental factors, a reassessment of interpretations regarding *in situ* preservation techniques is necessary. When integrating methods to re-create pre-exposure conditions within the scope of first-choice management, the *in situ* approach must be considered as inclusive of proactive intervention. From this perspective, integrated into the Ortmann (2009) definition, management aimed at *in situ* preservation should include:

steps taken on a site or intervention with a site in order to extend its longevity, with the intention of maintaining original context and spatial position, but with a priority to re-establish the pre-exposure conditions or provide a more stable environment.

Although the compounded definition is more active in description, and identifies the significance of the reburial environment, the emphasis remains on UCH *in place*. This perspective is in contrast to the inclusion of re-located underwater repositories as an *in situ* option.

Indeed, some heritage managers regard relocation as completely incongruous with UNESCO's definition of *in situ* protection, and argue the "relocation of a monument should only be considered as a last resort if preservation *in situ* is impossible" (Engelhardt & Rogers 2009, p. 38). This perspective implies that relocation and the use of underwater repositories are not extensions of *in situ* management, and as such, should not be included within a more expansive definition of the 'first option'. In contrast to this, a growing body of publications by practitioners identifies relocation and reburial of artefacts and/or site features, either on-site or off-site, as *in situ* preservation. The included cases studies of *Clarence*, fHPL and RAAR are examples of this attitude.

Understandably, it may be difficult for some practitioners to initially accept the relocation of UCH as an *in situ* management method because *in situ* traditionally has been applied in accordance with a literal translation of maintaining site context. This strict interpretation of the term is extrapolated to imply that UCH not left *in situ* – *in place* – must be considered *ex situ*, with the subsequent associations of excavation and recovery. As discussed, this perspective is not compatible with the current trends of *in situ* management practice, and the use of techniques including site relocation and underwater

repositories. By utilising *in situ* within a managerial context, the implicit meaning of the term is altered – reflecting the changes in techniques available to protect, conserve and preserve cultural heritage underwater. In this way, relocation for the betterment of protection and preservation of UCH can still be considered *in situ* if the new setting remains underwater, is less obtrusive, and is more environmentally stable for the longevity of the heritage materials. Both broadly and specifically, this study demonstrates that further clarification is warranted regarding the varying uses of *in situ* in regards to the description of heritage items *in place* and the managerial methods used to protect them.

Although relocation of UCH is gaining popularity as an accepted *in situ* management strategy, jurisdictional protection for underwater repositories is deficient in both international legislation and domestic laws reviewed in this study. This is of significant concern for practitioners, given that until legislation addresses managerial responsibility for UCH removed from its original location, there is a risk these heritage materials may not remain under the legislative jurisdiction of the heritage manager – despite the relocation being for the betterment of the UCH.

Furthermore, neither UNESCO nor ICOMOS reference relocation and underwater repositories as an *in situ* option, even though the techniques have been utilised since the 1980s. Despite the exclusion of this method within international texts, it is possible that the Red Bay Basque whaler excavation and reburial project influenced the specific ‘timber depots’ reference in the text of the UNESCO Manual. Nonetheless, the lack of inclusion of specific methodologies beyond this indirect and vague reference greatly limits practitioners looking towards the 2001 Convention and associated Annex for support in the application of a wide range of accepted UCH management techniques.

Today’s concerns, tomorrow’s potential

This study discusses a number of concerns regarding the global framework of UCH management, including the inconsistent application of managerial terminology (and *in situ* derivatives) within domestic and international legislation and guidelines, and the lack of legislatively and professionally

recognised definitions of these managerial terms. Additionally, there are discrepancies among professionals regarding classifications of techniques associated with *in situ* terminology, along with variation in the use of these terms within the guideline documents produced by international organisations. The contrasting results concerning the definitions and associated methodologies for *conservation*, *preservation* and *protection* within law and professional publications hinder the momentum of effectively establishing global UCH management criteria. In order to mitigate this, the specifically identified weaknesses within the interpretation of legislation amongst lawmakers and practitioners and applied managerial practice need to be addressed. This approach must include discussion on whether the use of contemporary vocabulary regarding UCH management should evolve to be integrated within a more inclusive and robust identifying term.

Within this study, four interest groups have been considered in relation to the highlighted issues: international legislative organisations (i.e. UN and UNESCO), international advisory organisations (i.e. ICOMOS), individual State Parties and heritage practitioners. Of the three managerial terms discussed throughout this thesis, the term commonly employed by practitioners within professional publications – *preservation* – remains the only undefined lexicon within the international arena. UNESCO's preference for referencing and defining *protection* suggests that this term more broadly encompasses heritage management. *Protection*, however, is a non-descript term that, while encouraging the preservation of heritage materials, can be construed in a more passive sense.

More specifically, *protection* has traditionally been associated with the establishment of legislation aiming at deterring access to UCH and preventing anthropogenic interference. As a non-descript managerial identifier, *protection* is not necessarily associated with active heritage management. Indeed, as demonstrated throughout this study, contemporary researchers advocate against a passive, 'do nothing' approach to UCH management, and encourage active measures in order to best preserve UCH. Accordingly, the utilisation of *protection* and the *in situ* derivative as the prominent terminology presented by UNESCO is a cause for concern, given that these terms do not correlate with the terminology and techniques most frequently employed by contemporary heritage practitioners.

In contrast to *protection*, as highlighted, both *conservation* – which involves the process of stabilising objects – and *preservation*, have more active connotations.

While UNESCO advocates *in situ* preservation as the ‘first option’ for UCH management, the term itself remains undefined within the international texts. Considering that a strong motivation behind the inclusion of *in situ* preservation within the UNESCO definition of *in situ* protection was to deter treasure hunting and commercial exploitation of UCH, the ‘first option’ is employed more in accordance with the natural and ordinary meaning of *protection*, which in a common vernacular “aims to preserve” or prevent harm (Oxford Online n.d., ‘protection’). Moreover, while international heritage committees were discussing the development of the 1996 Charter and 2001 Convention, the area of practical *in situ* preservation within the broader context of UCH management was rapidly developing. Taken into consideration, these perspectives provide a better understanding as to why emphasis was placed on protecting heritage materials from anthropogenic extraction and destruction rather than also including the mitigation of natural degradation.

The inconsistency of utilised *in situ* terminology, found in both the 2001 Convention and supporting materials (i.e. the UNESCO UCH webpage and Manual) leads some heritage managers to question whether or not *in situ* preservation should be referenced as the ‘first option’ lexicon. This raises the question that, in order to establish better continuity between practitioners’ methods and established legislation, is the onus on heritage managers to alter their language to parallel UNESCO’s defined term? Or should UNESCO consider amending its formal definition to correspond better with the more contemporary terminology employed within the UCH website and associated documents - which is commonly used among practitioners and preferred within domestic legislation?

Realistically, due to the arduous process of establishing the final draft of an international convention, it is unlikely that UNESCO will amend the 2001 Convention to relate more effectively to contemporary perspectives of *in situ* preservation. However, there are more accessible avenues for practitioners to take in approaching the UNESCO Scientific and Technical Advisory Body of the 2001 Convention with concerns regarding inconsistencies between the online references to the three *in situ* managerial terms and the identified ‘first option’ within the Convention. Moreover, neither the UNESCO Manual nor the

organisation's UCH website are legal texts, and therefore they do not require a majority vote by member States for amendment – unlike the legislation itself. Thus, these supplementary texts can be altered to more effectively aid in clarifying aspects of the 'first option' for UCH management.

Another opportunity to clarify UCH management terminology is through ICOMOS and the International Committee for Underwater Cultural Heritage, which previously influenced the development of UNESCO's UCH legislation. If practitioners provide ICUCH with a base model for defined terms, the Committee can further address the weakness between the textual and practical applications of terms, and develop a document in response. Should ICOMOS adopt supplemental rules in affiliation with the 1996 Charter, the accepted text could then be presented to UNESCO as a reference for the future legislative framework.

In regard to State Party legislation, the establishment or amending of domestic laws can be a lengthy and laborious process. It is therefore unrealistic to assume that State governments will amend domestic laws according to every development within the evolution of UCH management theory and practice. However, heritage practitioners at regional levels must be proactive and collaborative in their approach to UCH management, ensuring that there is a strong, cohesive voice to help shape local and broader domestic legislation. In this respect, congruent definitions of *in situ* managerial vocabulary amongst practitioners is inevitable required in order to mitigate the diverse interpretations by State lawmakers. Indeed, inconsistencies between State Parties, both regionally and globally, could be the result of varying preferences for terminology utilised by individual governmental practitioners. While recognising that the integration of individual State Party perspectives help to shape international legislation, it is also unrealistic to expect all domestic laws around the world to employ only one managerial term. Conversely, when drawing on established international precedents to assist in domestic policy-making, it is not surprising that State Party legislation reflects the inconsistent employment of related UCH vocabulary.

Legal guidelines based on historical perspectives and interpretations should not dictate the managerial methods of UCH managers – rather, the legislation should mirror and evolve with the contemporary code of ethics and practice of those implementing management in the field. Practitioners globally

can work together to compile a glossary of managerial terminology that includes a range of techniques related to each term, consider the broad cost/benefit analysis for each method and discuss environmental impact concerns. For those practitioners and lawmakers who look to the 2001 Convention for guidelines on managing UCH, it is imperative that the interpretation of the ‘first option’ is not limiting. Therefore, definitions and associations of *in situ* methodologies (i.e. *in situ* conservation, *in situ* preservation and *in situ* protection) should be clarified. Once the lexicon affiliated with the universal best practice is clarified, practitioners can employ the collectively developed methodologies for UCH management in jurisdictional waters and request that these agreed upon techniques and expressions of the terms become supplemental material for the international texts.

Practitioners likely will not begin referring to only one *in situ* management term to describe management practices given that, as previously mentioned, each term implies a different action. In order for practitioners to determine which terminology to more accurately reference, it is important to identify the desired outcome of the site-specific management. For example, if the aim of an applied method is to stabilise and mitigate degradation of ferrous UCH objects, *in situ* conservation may be the more appropriate term. However, if the aim of an applied practice is to minimise access in order to deter looting and to enforce legislative protection, *in situ* protection could be referenced. Comparatively, if heritage managers want to maintain context without disturbing site formation processes or to focus on re-establishing the pre-exposure environment through reburial or other active stabilisation techniques, *in situ* preservation can be applied. Should the focus be on public access and built heritage without the inclusion of site reburial, the question remains as to whether this qualifies as *in situ* preservation or rather the management of materials *in situ*, in the literal sense. In response to the variations in application of *in situ* managerial terminology, *in situ* management may be a more broadly preferable term for practitioners, as this can encompass *in situ* preservation, *in situ* conservation and *in situ* protection, as well as incorporate the use of underwater repositories.

Conclusion

This study examined whether an assessment of practitioners' publications relating to UCH and heritage-inclusive international legislation and guidelines and domestic laws could identify discordance between law and practice. In order to answer the research question, the study sought to determine if, and where, inconsistencies exist within the scope of relevant texts and to identify whether *conservation*, *preservation*, *protection* or the *in situ* derivatives of these terms require clarification for effective application within the analysed texts. As a result, the three categories of literature were assessed for content regarding heritage management, with a particular focus on UCH and *in situ* preservation. Data obtained from this study demonstrate that UCH management across the literature is incongruent regarding managerial terminology.

The initial analysis of practitioners' publications regarding at-risk heritage suggests that inefficient legislation and inaccurate public perception of UCH are restricting heritage managers. In managing underwater sites of significant cultural value, practitioners are tasked with balancing the environmental factors and anthropogenic interference with ethical responsibility. In some countries, these roles are greatly impacted by State-sponsored treasure hunting. The task is further complicated by the variations in domestic customary laws addressing classifications of UCH (i.e. *antiquities*, *cultural heritage*, *cultural patrimony*, *cultural property*, *monuments*, *objects*, *relics*), including age criteria and location within different jurisdictional boundaries. For some heritage managers, the exclusion of submerged cultural landscapes, aircraft, non-shipwreck vessels, and coastal maritime industry is also of concern, as industrial development and resource exploitation continue to expand seaward, placing significant UCH sites and materials at risk without specific legislated protection.

Beyond domestic legislation, there are a number of inconsistencies among heritage practitioners themselves. These include varying interpretations of what constitutes *in situ* preservation, misunderstanding regarding the economic feasibility of applying *in situ* methodologies, inconsistent approaches regarding investigation of the natural environment impacting site degradation and the utilisation of a 'built heritage approach' as a valid *in situ* preservation method. Moreover, practitioners have yet to agree on associated methodologies of *in situ*

preservation beyond the literal translation of preserving material in context, which can have a negative impact on proactively managing sites. Indeed, while coinciding with the UNESCO interpretation of *in situ* protection, the ‘first option’ of *in situ* preservation itself remains undefined. Through case discussion and analysis of practitioners’ publications, *in situ* preservation techniques are shown to range from reburying complete archaeological sites by any number of discussed methods, to moving sites in their entirety to a more suitable underwater location. *In situ* preservation can also be applied to disassembling a site and placing all heritage items in an underwater repository, or to leaving the site structure *in place* but relocating artefacts and disarticulated site features to an underwater storage depot elsewhere.

As presented throughout this thesis, inconsistencies regarding the definition of *in situ* preservation and the associated techniques negatively impact the effective application of a universal best practice for UCH management. The author suggests that *in situ* preservation should be described as a method that ideally leaves a site in its original context, with the overall aim of prolonging the existence of the heritage materials through retarding the degradation from physical, chemical or biological factors by any of the techniques described in Chapter 4, excluding the use of toxins. Should the site be in danger of looting, damage or destruction from anthropogenic interaction or impacting environmental factors, relocating the site and re-establishing a suitable environment for the safeguarding of the materials – either whole or in underwater repositories – should still be considered *in situ* preservation, as long as legislation is in place to protect the relocated UCH.

The differences of association with *in situ* protection and *in situ* conservation similarly require clarification. As discussed, *in situ* protection suggests passive managerial methods through the establishment of laws that aim to deter human impact. *In situ* conservation, however, implies physical change to the stability of a heritage item through the introduction of a sacrificial anode or reburial. Moreover, while each *in situ* term is uniquely significant within heritage management, as demonstrated in this study, the terms are often referenced interchangeably. Therefore, should site managers utilise more than one *in situ* managerial application, the term ‘*in situ* management’ can be utilised and integrated into both the legal framework and practitioners’ publications; this

broader *in situ* term enables a wide range of complementary methodologies to be employed without the restrictive guidelines associated with a specific managerial term.

The correlation of data across international conventions, guidelines and domestic legislation further demonstrates incongruous employment of managerial terminology. The applications of *conservation*, *preservation* and *protection* within assessed legislation and heritage guidelines suggest that these terms are not strictly synonymous across the varying legal frameworks. Although domestic cultural-identifying terms are unilaterally orientated and based on the customary and sociological context of their application, management of heritage items should articulate well with established international ethical guidelines – and not simply be based on the isolated domestic perceptions of management.

The discontinuity between the interpretation of the law and applied practice is further identified through the case study analyses of HMS *Colossus*, *James Matthews*, *Clarence*, the former Hovell Pile Light, and the Reburial and Analyses of Archaeological Remains project. Assessment of the management approaches applied at each site demonstrates that practitioners' interpretations of the managerial terminology are not always analogous to definitions presented in international and domestic laws. In some cases, the methods employed exceed UNESCO's interpretation of *in situ* protection and instead integrate more active *in situ* conservation or preservation approaches. Moreover, each case study utilises scientific and methodological advancements beyond simply 'leaving a site where it lay', further demonstrating the need for both practitioners and lawmakers to review the characterisation of *in situ* preservation. If lawmakers equate *in situ* preservation with non-disturbance, non-intrusive methodologies, many of these case studies would have been destroyed. It is therefore important that the definition of, and methodologies associated with, *in situ* preservation are transparent; otherwise, State's may not identify they have an obligation under their own legislation to actively manage their UCH.

The development of supplementary texts that more effectively outline managerial criteria beyond the ambiguity found within both international and domestic legislation would aid UCH managers with efficiently preserving, protecting and conserving the world's non-renewable cultural resources. Associations and expressions of the term found within this text could provide a

basis for a practitioners' global glossary on managerial terms (Table 34). However, this is not the only response to strengthening UCH management. As presented in Chapter 4, there is a gap in the education and training system for practitioners, as *in situ* management is not taught at length within the majority of tertiary institutions. The 'first option' for UCH management, in conjunction with field-practicals providing experience in applying the associated techniques, should be integrated as an independent course at UCH university programs. Additionally, continuing education courses should be available for established practitioners, as results from *in situ* studies, such as RAAR, *James Matthews*, HMS *Colossus* and *Clarence*, can help evolve UCH management practices.

Table 34 Preliminary glossary for UCH managerial terminology.

Term	Definition
Protection	An aim to prevent harm from impacting UCH. This is often done through the enactment of (international, domestic and local) legislation that establish boundaries to prevent or manage anthropogenic access to vulnerable sites.
Conservation	Physical measures taken to extend the life of cultural materials, whilst maintaining the physical characteristics of the objects. It includes the stabilisation and, when appropriate, the restoration, of the artefacts. This includes techniques such as extracting salts from waterlogged objects removed from a marine environment, de-concreting metal artefacts and chemically treating the heritage objects to minimise future degradation.
Preservation	The implementation of measures to prevent deterioration and degradation of UCH. This can include the systematic removal of UCH from its original context.
<i>In situ</i> protection	Enforcing laws that prevent anthropogenic factors impacting UCH, with the aim of leaving the site underwater in its original context.
<i>In situ</i> conservation	Physical measures taken through the application of sacrificial anodes on metal artefacts and features to extend the life of the cultural materials. This method is applied underwater, preferably with the UCH remaining in place, however, materials can be relocated for their safety and to encourage equilibrium. For organic materials, based on the abovementioned principles of conservation, waterlogged wood, leather, food remains and other organic materials cannot be conserved in a saltwater environment.
<i>In situ</i> preservation	A method that ideally leaves a site in its original context, underwater, with the overall aim of prolonging the existence of the heritage materials through retarding the degradation from physical, chemical or biological factors by any number of internationally accepted methods of practice. Methods include the backfilling, sediment and gravel dumping; deposition of Hessian and polymeric sandbagging, ballast and stones; application of textiles, metal netting, artificial and natural seagrasses, sediment encapsulation, trenches, and iron and plastic fences; and relocation and the utilisation of underwater repositories. Should the site be in danger of looting, damage, or destruction from anthropogenic interaction or impacting environmental factors, relocating the site and re-establishing a suitable environment for the safeguarding of the materials – either whole or in underwater repositories – should still be considered <i>in situ</i> preservation, as long as legislation is in place to protect the relocated UCH.
<i>In situ</i> management	The integration <i>in situ</i> protection, <i>in situ</i> preservation and <i>in situ</i> conservation techniques in order to prevent continued anthropogenic and/or natural factors impacting UCH site stability.

Overall, limitations to the effective relationship between UCH-inclusive legislation and managerial practice exist due to the significant inconsistencies of terminology within and among international laws and guidelines, domestic legislation and practitioners' publications. Clarification regarding managerial terminology is recommended to mitigate these discrepancies. In short, results from this study suggest that a catalyst for global change can stem from the establishment of a working glossary of managerial terms defining parameters for the terminology and associated actions, coupled with an emphasis on how the techniques and interpretations fit within the current global cultural heritage environment.

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Table 1 ‘Africa’ State Parties.

Africa			
Included		Excluded	
Algeria	Morocco	Benin	Libya
Angola	Namibia	Burundi	Madagascar
Botswana	Nigeria	Cape Verde	Mauritania
Burkina Faso	Senegal	Central African Republic	Mozambique
Cameroon	Seychelles	Chad	Niger
Cote d’Ivoire	Sierra Leone	Comoros	Rwanda
Egypt	South Africa	Congo	Sao Tome and Principe
Ethiopia	Sudan	Democratic Republic of Congo	Somalia
Gambia`	Swaziland	Djibouti	South Sudan
Ghana	Tanzania	Equatorial Guinea	Togo
Kenya	Uganda	Eritrea	Tunisia
Lesotho	Zambia	Gabon	
Malawi	Zimbabwe	Guinea	
Mali		Guinea Bissau	
Mauritius		Liberia	

Table 2 ‘Africa’ region: State Parties to ratify the African Union Charter 1976 and sign onto the African Union Charter 2006.

State Parties	1976 African Union Charter	2006 African Union Charter	State Parties	1976 African Union Charter	2006 African Union Charter
Algeria	x	x	Mauritius	x	
Angola	x	x	Morocco		
Botswana			Namibia		
Burkina Faso	x	x	Nigeria	x	x
Cameroon	x		Senegal	x	x
Cote d’Ivoire		x	Seychelles	x	
Egypt	x	x	Sierra Leone		x
Ethiopia	x		South Africa		
Gambia		x	Sudan	x	
Ghana	x	x	Swaziland		
Kenya	x		Tanzania	x	
Lesotho			Uganda	x	
Malawi	x		Zambia	x	x
Mali	x	x	Zimbabwe	x	

Table 3 ‘Africa’ region: terms associated with definition of *Antiquities*.

State Parties	Movable, Immovable	Relic	Date, Age	Archaeological, Historical Value	Object of interest	Work of art, craftwork
Egypt	x		x	x		
Ghana			x		x	x
Kenya	x		x			
Lesotho	x		x	x		
Nigeria		x	x		x	x
Sudan	x		x		x	
Swaziland	x		x	x		
Tanzania		x				

Table 4 ‘Africa’ region: terms associated with *conservation*.

State Parties	Definition	Preservation	Protection	Obligation	Maintenance	Management	Cultural heritage
Algeria			x		x		
Angola			x	x			
Botswana			x			x	
Burkina Faso		x					
Egypt			x				x
Ethiopia	x	x	x				x
Ghana					x		
Malawi	x						x
Mali				x	x		
Morocco				x			
Namibia	x	x	x		x		
South Africa	x	x	x		x	x	
Zambia	x						x

Table 5 ‘Africa’ region: terms associated with the definition of *cultural heritage*.

State Parties	Definition	Underwater	Historical, Archaeological, Palaeontological	Monuments	Objects of Interest	Movable, Immovable	Relics, Ruins	Property	Other heritage
Angola	x	x							
Ethiopia	x		x	x	x	x			
Kenya	x		x	x	x				
Mali	x					x		x	
Zambia	x		x	x	x		x		x

Table 6 ‘Africa’ region: terms associated with the definitions of *cultural patrimony* and *cultural property*.

State Parties	Defined patrimony	Defined property	Patrimony	Property	Historical, Archaeological, Palaeontological	Monuments	Objects of Interest	Movable, Immovable	Relics, Ruins	Antiquities	Underwater
Algeria	x							x			x
Angola			x	x	x	x					
Burkina Faso	x			x							
Cote d'Ivoire	x				x	x	x	x			
Mali	x			x	x	x	x	x			

Table 7 ‘Africa’ region: derivatives of *monument* defined.

State Parties	Monument	Ancient monument	National monument	Historic monument
Algeria				x
Angola				x
Botswana	x	x		x
Burkina Faso				x
Gambia	x	x		
Kenya	x			
Lesotho	x			
Malawi	x			
Mauritius	x			
Morocco				x
Nigeria	x			
Senegal				x
Seychelles	x	x	x	
Sierra Leone	x	x	x	
Sudan	x			x
Swaziland	x		x	
Tanzania	x			
Uganda				x
Zambia			x	
Zimbabwe	x	x	x	

Table 8 'Africa' region: term employed in association with *objects*.

State Parties	Defined	Relic	Monument	Antiquity	Excavation	Movable, Immovable	Artefact	Other
Algeria								x
Angola								x
Botswana	x		x				x	
Burkina Faso					x			
Cote d'Ivoire						x		
Ethiopia						x		x
Gambia			x					
Ghana	x							
Kenya	x							
Lesotho			x					
Mauritius								x
Morocco						x		
Namibia	x					x		
Nigeria	x							
Senegal	x		x					
Seychelles			x					
Sierra Leone			x					
South Africa	x						x	x
Sudan				x		x		x
Swaziland			x					
Tanzania	x			x				x
Uganda	x							
Zambia		x						
Zimbabwe		x	x					

Table 9 ‘Africa’ region: terms employed in association with *preservation*.

State Parties	Definition	Antiquities	<i>In-Situ</i> Conservation, Preservation	Archaeological Objects	Cultural Property	Cultural Heritage	Historical Object	Monument	Relic	with Conservation	with Protection	Maintenance or Other
Algeria			x		x	x	x	x		x		
Angola						x	x					
Botswana								x			x	
Burkina Faso						x		x		x		
Egypt		x		x		x						
Ethiopia						x				x	x	
Gambia				x		x	x	x	x			
Ghana								x				
Kenya								x			x	
Lesotho		x						x	x		x	
Malawi	x		x	x		x	x	x	x	x	x	x
Mauritius						x						
Morocco		x		x			x	x			x	
Namibia										x	x	x
Nigeria		x				x					x	
Seychelles				x			x	x	x			
Sierra Leone						x		x				
South Africa				x		x	x			x	x	x
Swaziland		x		x			x	x	x		x	
Tanzania								x	x			
Uganda				x	x	x	x	x			x	x
Zambia						x					x	
Zimbabwe							x	x	x			

Table 10 'Africa' region: terms employed in association with *protection*.

State Parties	Definition	Movable, Immovable	Safeguard	Cultural Heritage	Cultural Patrimony	Cultural Property	Monuments	Antiquities	Relics	Object	Maintenance	Underwater or Shipwreck
Algeria		x	x		x	x					x	
Angola				x	x							
Botswana							x		x			
Cameroon							x			x		
Cote d'Ivoire		x	x		x							
Egypt		x	x					x				
Ethiopia				x								
Ghana												
Kenya							x					
Lesotho							x	x	x			
Malawi							x		x			
Mali			x		x						x	
Morocco		x					x	x				
Namibia										x	x	x
Nigeria							x	x			x	
South Africa			x									
Swaziland							x	x	x	x		
Uganda							x			x	x	
Zambia											x	

Table 11 'Africa' region: Underwater cultural heritage associations.

State Parties	Non-Descript Underwater	Shipwreck	Maritime Industry	Internal Waters	Territorial Waters, Sea	Contiguous Zone	EEZ	Continental Shelf
Algeria	x	x		x	x			
Angola	x							
Egypt				x	x			
Kenya		x						
Lesotho	x							
Malawi				x				
Mauritius	x			x	x	x	x	x
Morocco	x				x		x	
Namibia	x	x			x	x		
South Africa	x	x		x	x	x		
Zambia	x		x					

Table 12 'Africa' region: Composite of defined cultural identifiers in the region.

State Parties	Antiquities	Cultural Heritage	Cultural Patrimony	Cultural Property	Monuments	Objects	Relic
Algeria			x		x		
Angola		x			x		
Botswana					x	x	x
Burkina Faso			x		x		
Cameroon							
Cote d'Ivoire			x				
Egypt	x						
Ethiopia		x					
Gambia					x		x
Ghana	x					x	
Kenya	x	x			x	x	
Lesotho	x				x		x
Malawi					x		x
Mali		x	x				
Mauritius					x		
Morocco					x		
Namibia						x	
Nigeria	x				x	x	
Senegal					x	x	
Seychelles					x		x
Sierra Leone					x		x
South Africa						x	
Sudan	x				x		
Swaziland	x				x		x
Tanzania	x				x	x	x
Uganda					x	x	
Zambia		x			x		x
Zimbabwe					x		x

Table 13 'Africa' region: Composite of defined managerial lexicon in the region.

State Parties	Conservation	Preservation	Protection
Algeria			
Angola			
Botswana			
Burkina Faso			
Cameroon			
Cote d'Ivoire			
Egypt			
Ethiopia	X		
Gambia			
Ghana			
Kenya			
Lesotho			
Malawi	X	X	
Mali			
Mauritius			
Morocco			
Namibia	X		
Nigeria			
Senegal			
Seychelles			
Sierra Leone			
South Africa	X		
Sudan			
Swaziland			
Tanzania			
Uganda			
Zambia	X		
Zimbabwe			

Table 14 ‘Arab States’ State Parties.

Arab States			
Included		Excluded	
Algeria	Malta	Djibouti	South Sudan
Bahrain	Morocco	Libya	Tunisia
Egypt	Saudi Arabia	Mauritania	Yemen
Iraq	Sudan	Oman	
Jordan	Syrian Arab Republic (Syria)	Palestine	
Kuwait	United Arab Emirates (UAE)	Qatar	
Lebanon		Somalia	

Table 15 ‘Arab States’ region: terms employed in association with *antiquities*.

State Parties	Antiquities Defined	Movable, Immovable Property	Monument	Date, Age	Archaeological or Historical Value	Object	Cultural Property	Cultural Patrimony	Cultural Heritage	Underwater
Algeria		x				x				x
Bahrain		x	x							x
Egypt	x	x		x	x		x			
Iraq	x	x		x			x			
Jordan	x	x		x		x				x
Kuwait	x	x		x			x		x	
Lebanon	x	x		x		x	x			x
Malta										x
Morocco			x		x					
Saudi Arabia	x	x		x	x		x			
Sudan	x	x	x	x		x				
Syria	x	x	x	x	x		x			
UAE	x			x		x				

Table 16 ‘Arab States’ region: Terms employed in association with *conservation*.

State Parties	Definition	Preservation	Protection	Obligation	Maintenance	Management	Excavation	Classification	<i>In situ</i> Conservation	National Interest
Algeria		x	x	x	x			x	x	
Bahrain					x					
Egypt			x				x			x
Iraq		x		x			x			
Kuwait						x		x		
Lebanon			x	x		x	x			x
Malta	x	x	x		x	x				
Morocco				x	x			x		

Table 17 ‘Arab States’ region: States to define *excavation* or reference *excavation* with underwater.

State Parties	Defined	Underwater
Algeria		x
Bahrain	x	x
Egypt		x
Iraq	x	x
Jordan		
Kuwait	x	x
Lebanon		
Malta		x
Morocco		x
Saudi Arabia	x	x
Sudan		
Syria	x	x
UAE		

Table 18 ‘Arab States’ region: Derivatives of *monument* (bold emphasis symbolises defined).

State Parties	Monument	Heritage Monument	Historic Monument	Antique Monument	Cultural Monument	Immovable, Movable Monument	Archaeological Monument
Algeria	x		X		x		
Bahrain	X					X	
Iraq	x	x					x
Lebanon	x		X				
Malta	x						
Morocco			X				
Sudan	X		X				
Syria			x	x			

Table 19 ‘Arab States’ region: terms employed in association with *objects*.

State Parties	Defined	Antiquity	Excavation	Moveable or Immovable	Underwater	Cultural Property	Cultural Heritage
Algeria		x		x	x		
Lebanon	x		x	x	x	x	
Malta				x	x		x
Morocco			x	x	x		
Saudi Arabia		x					

Table 20 ‘Arab States’ region: terms employed in association with *preservation*.

[illegible]

Table 21 ‘Arab States’ region: terms employed in association with *protection*.

State Parties	Definition of Protection	Cultural Property	Cultural Heritage	with Safeguard	with Maintenance	with Conservation	Antiquities	Excavation	Underwater	Classification
Algeria		x		x	x	x				x
Egypt		x		x		x				
Iraq										
Jordan					x		x			
Lebanon		x				x	x	x		
Malta		x	x	x	x	x				
Morocco		x						x		x
Saudi Arabia				x			x			
Sudan		x	x							
Syria					x		x			

Table 22 ‘Arab States’ region: underwater cultural heritage associations.

State Party	Non-descript Underwater	Maritime Industry, Shipwreck	Territorial Waters, Sea	Interior, Internal Waters	Contiguous Zone	EEZ	Continental Shelf
Algeria	x	x	x	x			
Bahrain			x	x			
Egypt			x	x			
Iraq			x	x			
Jordan	x		x	x			
Kuwait			x				
Lebanon	x		x				
Malta			x		x	x	x
Morocco	x		x			x	
Saudi Arabia			x	x			
Syria			x	x			

Table 23 ‘Arab States’ region: defined cultural identifying lexicon.

State Parties	Antiquities	Cultural Heritage	Cultural Patrimony	Cultural Property	Monuments	Objects	Relics
Algeria			x		x		
Bahrain					x		
Egypt	x						
Iraq	x						
Jordan	x						
Kuwait	x						
Lebanon	x			x	x	x	
Malta		x		x			
Morocco					x		
Saudi Arabia	x						
Sudan	x				x		
Syria	x						
UAE	x						

Table 24 ‘Arab States’ region: defined managerial lexicon.

State Parties	Conservation	Preservation	Protection
Algeria			
Bahrain			
Egypt			
Iraq			
Jordan			
Kuwait			
Lebanon			
Malta	x		
Morocco			
Saudi Arabia			
Sudan			
Syria			
UAE			

Table 25 ‘Asia and the Pacific’ State Parties.

Asia and the Pacific		
Included		Excluded
Afghanistan	Micronesia, Federal States of (Micronesia)	Bhutan
Australia	Mongolia	East Timor
Bangladesh	Myanmar	Korea, Democratic Republic of
Brunei Darussalam (Brunei)	Nepal	Kazakhstan
Cambodia	New Zealand	Kiribati
China	Pakistan	Kyrgyzstan
Cook Islands	Palau	Nauru
Fiji	Papua New Guinea (PNG)	Niue
India	Philippines	Russian Federation
Indonesia	Singapore	Samoa
Iran, Islamic Republic of (Iran)	Sri Lanka	Solomon Islands
Japan	Thailand	Tajikistan
Korea, Republic of (Korea)	Tonga	Turkmenistan
Lao, People’s Democratic Republic of (Laos)	Turkey	Tuvalu
Malaysia	Uzbekistan	
Maldives	Vanuatu	
Marshall Islands	Vietnam	

Table 26 ‘Asia and the Pacific’ region: terms employed in association with *antiquities*.

State Parties	Definition	Movable, Immovable	Monument	Object	Archaeological or Historic Value, Interest	Underwater	Date, Age	Protection	Preservation	Cultural Property
Bangladesh	x	x		x	x	x			x	
Brunei	x	x		x		x	x			
India	x			x	x		x			
Iran	x	x		x			x			
Malaysia	x			x			x			
Myanmar	x			x	x					
New Zealand				x			x	x		
Pakistan	x	x	x	x	x	x	x			
Philippines	x						x			x
Sri Lanka						x				
Thailand	x	x	x		x					
Vietnam	x			x	x	x	x			

Table 27 ‘Asia and the Pacific’ region: employment of *covering*.

State Parties	with Preservation	Definition of Monument	Definition of Maintenance	Definition of Archaeological Objects of Interest	Definition of Archaeological Sites	Prohibited	Definition of Stabilization	Underwater
Bangladesh	x							
Brunei	x	x						
Fiji	x		x	x				
India	x		x		x			
Iran						x		
Marshall Islands							x	
Myanmar			x					
Nepal	x							
Pakistan	x							x
Tonga	x			x				

Table 28 ‘Asia and the Pacific’ region: terms employed in association with *conservation*.

State Parties	Definition	Preservation	Protection	Obligation	Maintenance	Management	Excavation	Classification	<i>In Situ</i>	Cultural Property	Cultural Heritage	Other
Afghanistan		x								x		
Australia	x	x	x	x	x					x		
Bangladesh											x	
Brunei		x			x							
Cambodia			x	x			x			x		
Cook Islands												x
India							x					x
Indonesia		x										
Iran											x	
Korea						x					x	
Laos	x	x	x								x	
Malaysia	x	x	x		x							
New Zealand	x	x	x		x	x		x			x	
Pakistan		x									x	
PNG												x
Philippines	x	x	x							x	x	
Sri Lanka			x									
Turkey	x				x	x			x	x		x
Uzbekistan	x	x			x						x	
Vietnam											x	

Table 29 ‘Asia and the Pacific’ region: terms employed in association with *cultural heritage*.

State Parties	Definition	Underwater	Movable, Immovable	Date, Age	Archaeological or Historical Value, Interest	Objects	Property	Antiquities	Monuments	National, Cultural Heritage	Relics
Afghanistan	x		x	x	x						
Australia	x	x	x		x	x					
Bangladesh										x	
Cambodia	x				x		x			x	
China					x				x		x
Indonesia	x	x			x						
Iran	x						x			x	x
Korea	x				x				x		
Laos	x		x		x	x	x			x	
Malaysia	x	x		x	x	x	x		x	x	
Pakistan					x					x	
Marshall Islands	x	x			x	x	x			x	
Myanmar	x				x				x		
Nepal	x									x	
New Zealand					x						
PNG			x				x				
Philippines	x						x				
Tonga		x									
Uzbekistan			x		x	x			x		
Vietnam	x				x			x			x

Table 30 Terms employed in association with *cultural property* - Asia and the Pacific Region.

State Parties	Definition	Underwater	Movable, Immovable	Date, Age	Archaeological or Historical Value, Interest	Artefacts, Objects	Cultural Heritage	Antiquities	Monuments
Afghanistan	x		x			x			
Australia	x					x			
Cambodia	x	x	x		x	x		x	x
Iran	x			x		x		x	
Japan	x				x	x	x		x
Marshall Islands	x	x				x			
Micronesia,	x				x	x			
Palau	x				x	x			
PNG	x		x		x	x	x		
Philippines	x		x		x			x	
Turkey	x	x	x	x					x
Vietnam	x				x				

Table 31 ‘Asia and the Pacific’ region: employed derivatives of *monument* and underwater reference (bold emphasis identify defined terms).

State Parties	Monument	Ancient Monument	National Monument	Cultural Monument	Historic Monument	Archaeological Monument	Underwater
Bangladesh	x	x	x				
Brunei	X	X					x
Cambodia	x	x			x		
Fiji	X						
India		X					
Iran	x		X				
Japan	X						
Korea	X						
Laos	X						
Malaysia	x						
Mongolia				X	X	X	
Myanmar		X					x
Nepal		X					
New Zealand					x		
Pakistan			X				
Palau	X						x
Philippines					X		
Singapore	X	X					
Sri Lanka	x						
Thailand		X					
Turkey	x						
Uzbekistan	X						

Table 32 'Asia and the Pacific' region: terms employed in association with *objects*.

State Parties	Definition	Relic	Movement	Antiquity	Excavation	Movable, Immovable	Shipwreck	Underwater	Property	Cultural Heritage	Artefact	Date, Age	Archaeological or Historical Value, Interest	Preservation in Definition
Afghanistan										x				
Australia	x						x					x	x	
Brunei				x	x	x	x	x					x	
Cambodia					x						x			
China		x				x							x	
Fiji	x				x								x	
India				x								x	x	
Indonesia	x									x		x		
Laos	x												x	
Malaysia	x			x		x	x	x		x	x			
Maldives	x													
Marshall Islands									x		x			
Micronesia											x	x		
Papua New Guinea														
Paraguay													x	
Nepal	x			x	x							x		
New Zealand	x		x	x	x							x	x	
PNG						x			x	x				
Philippines	x		x				x	x			x	x		
Singapore	x										x			
Thailand					x								x	
Tonga	x				x								x	x
Turkey	x	x	x			x								
Vanuatu	x	x												
Uzbekistan	x		x							x			x	

Table 33 'Asia and the Pacific' region: terms employed in association with *preservation*.

State Parties	Definition	<i>In Situ</i>	Cultural Property	Cultural Heritage	Protection	Conservation	Maintenance	Antiquities	Monuments	Excavation	Underwater	Relic
Afghanistan			x		x							
Australia					x						x	x
Bangladesh					x			x	x			
Brunei						x	x	x	x	x		
Cambodia									x			
China										x		x
Cook Islands					x		x					
Fiji					x	x			x			
India												x
Indonesia	x			x	x	x					x	
Japan			x									
Korea				x	x	x						
Malaysia	x					x	x					
Marshall Islands	x		x	x	x		x				x	
Micronesia			x									
Myanmar				x	x		x	x	x			
Nepal	x			x					x			
New Zealand		x	x		x	x	x			x		
Pakistan		x								x		
PNG			x		x							
Philippines			x	x	x	x						
Singapore					x		x		x			
Thailand									x			
Turkey										x		
Uzbekistan				x	x							
Vietnam					x			x				x

Table 34 'Asia and the Pacific' region: terms employed in association with *protection*.

[illegible]

Table 35 ‘Asia and the Pacific’ region: underwater cultural heritage associations.

State Parties	Non-descript Underwater	Shipwreck	Maritime Industry	Territorial Waters, Sea	Internal Waters	Contiguous Zone	EEZ	Continental Shelf	Area, High seas
Australia	x	x	x	x				x	
Bangladesh	x								
Brunei		x		x	x				
Cambodia	x								
China	x		x	x	x	x	x	x	x
Indonesia	x								
Iran								x	
Korea	x								
Malaysia	x	x		x	x				
Maldives	x								
Marshall Islands	x			x	x				
New Zealand	x	x							
Pakistan	x								
Palau	x	x							
Philippines	x		x	x		x			
Singapore		x							
Sri Lanka					x				
Thailand							x		
Tonga	x								
Turkey	x								
Vietnam	x			x	x		x	x	

Table 36 ‘Asia and the Pacific’ region: defined cultural identifying lexicon.

State Parties	Cultural Heritage	Cultural Property	Antiquities	Monuments	Relics	Objects
Afghanistan	X	X				
Australia	X	X			X	X
Bangladesh			X			
Brunei			X	X		
Cambodia	X	X				
China					X	
Cook Islands						
Fiji				X		X
India			X	X		
Indonesia	X					X
Iran	X	X	X	X		
Japan	X	X		X		
Korea	X			X		
Laos	X			X		X
Malaysia	X		X	X	X	X
Maldives						X
Marshall Islands	X	X				
Micronesia		X				
Mongolia				X		X
Myanmar	X		X	X		
Nepal				X		X
New Zealand						X
Pakistan			X	X		
Palau		X		X		
PNG		X				
Philippines	X	X	X	X		X
Singapore				X		X
Sri Lanka						
Thailand			X	X		
Tonga						X
Turkey		X				X
Uzbekistan				X		X
Vanuatu						X
Vietnam	X	X	X		X	

Table 37 ‘Asia and the Pacific’ region: defined managerial lexicon.

State Parties	Conservation	Preservation	Protection
Afghanistan			
Australia	x		
Bangladesh			
Brunei			
Cambodia			
China			
Cook Islands			
Fiji			
India			
Indonesia		x	x
Iran			
Japan			
Korea			
Laos	x		x
Malaysia	x	x	
Maldives			
Marshall Islands		x	
Micronesia			
Mongolia			
Myanmar			
Nepal		x	
New Zealand	x		
Pakistan			
Palau			
PNG			
Philippines	x		
Singapore			
Sri Lanka			
Thailand			
Tonga			
Turkey	x		
Uzbekistan	x		
Vanuatu			
Vietnam			

Table 38 ‘Europe and North America’ State Parties.

Europe and North America		
Included		Excluded
Albania	Italy	Andorra
Armenia	Latvia	Belgium
Austria	Lithuania	Czech Republic
Azerbaijan	Macedonia, Former Yugoslav Republic of (Macedonia)	Germany
Belarus	Malta	Greece
Bosnia and Herzegovina	Montenegro	Iceland
Bulgaria	Netherlands	Kazakhstan
Canada	Norway	Luxembourg
Croatia	Portugal	Moldova, Republic of
Cyprus	Romania	Monaco
Denmark	Slovakia	Poland
Estonia	Slovenia	Russian Federation
Finland	Spain	San Marino
France	Sweden	Serbia
Georgia	Turkey	Switzerland
Hungary	United Kingdom (UK)	Tajikistan
Ireland	United States of America (US)	Ukraine
Israel		

Table 39 ‘Europe and North America’ region: terms associated with definition of *Antiquities*.

State Parties	Definition	Movable, Immovable	Monument	Relic	Artefact, Object	Archaeological or Historical Value, Interest	Underwater	Date, Age	Protection
Cyprus	x	x			x		x	x	
Israel	x				x	x		x	
Italy					x				
Latvia		x		x	x	x			
Lithuania	x	x			x			x	
Macedonia	x				x	x		x	
Malta							x		
Finland			x						x
Portugal									
Turkey									
UK									

Table 40 ‘Europe and North America’ region: terminology employed in association with *covering* (bold emphasis indicates *covering* within the definition of the associated term).

State Parties	Preservation	Monument	Maintenance	Conservation	Management
Azerbaijan				X	
Cyprus	x	X			
Finland		X			
Georgia				x	
Ireland	x	X			
Macedonia	X				
Norway		x			
Sweden		x			
UK		x	X		
European Union	x		x		x

Table 41 ‘Europe and North America’ region: terms associated with definition of *Conservation* (Bold indicates inclusion within the definition of the managerial term).

State Parties	Defined	Preservation	Protection	Maintenance	Management	Underwater	Excavation	<i>In Situ</i>	Cultural Property	Cultural Heritage	Covering	Restoration, Repair
Albania		x	x	x								x
Azerbaijan	x		X							x	X	
Belarus	x	X										
Bosnia			x									x
Bulgaria		x	x	x	x				x	x		x
Canada			x						x	x		
Croatia		x	x	x								x
Denmark												
Estonia	x	X								x		x
France		x	x			x			x			
Georgia	x	X	x				x			x		x
Hungary		X	X									x
Ireland			x			x				x		
Israel										x		
Italy	x		x	X					x	x		
Latvia				x								x
Lithuania	x		X	X					X	X		x
Macedonia	x	X	x	x						x		x
Malta	x	X	x						X			
Montenegro				x								x
Portugal			x		x		x		x	x		x
Romania		x	x					x				x
Slovakia			x	x						x		x
Slovenia	x		x	X						X		X
Spain									x			
Turkey	x			X		x		x	X			X
US				x	x		x					

Table 42 'Europe and North America' region: terms in association with *cultural heritage* (bold indicates inclusion in the definition of *cultural heritage*).

State Parties	Definition	Underwater	Movable, Immovable	Date, Age	Archaeological, Historical, Scientific Value, Interest	Objects	Maintenance	Monument	Other heritage	Property	Protection	Relic	Preservation
Albania	x		X	X	x	X				X	x		
Armenia	x							X				X	
Austria													
Azerbaijan	x		X		X				x		X		
Belarus	x				X								
Bulgaria	x	X	X		X	X					X		x
Canada									x				
Croatia		x											
Denmark	x	x	X			X		X					x
Estonia													
Finland						x					x		
France					x			x	x	x			
Georgia	x		X		X	X				X	x		x
Hungary	x	X		X	X	X		X	x	x	X		
Ireland		x			x	x	x	x	x		x		x
Italy	x		X		X					X	x		
Latvia					x			x					x
Lithuania	x	X	x		X	X				X	x		X
Macedonia	x	x	x	X						x	X		
Malta	x	x	X		X	X							
Montenegro											x		x
Netherlands			x		x					x			x
Norway						x		x			x		
Portugal	x	x	x		x						X		x
Romania	x	x			X	x		x			x		
Slovakia	x		X		X			x		x	x		
Slovenia	x	x	X					x			X		X
Spain	x	x	X		X	X	x	x	X	x	x		x
US					x								x

Table 43 ‘Europe and North America’ region: terms employed in conjunction with *cultural property* and *cultural patrimony* (bold identifies inclusion within the definition).

[illegible]

Table 44 'Europe and North America' region: employed derivatives of *monument* (bold emphasis identifies defined terms).

State Parties	Movable, Immovable	Ancient	Historical	Cultural	Monument	National	Underwater	Archaeological
Albania	x			X				
Armenia			x		x			
Austria	x				X			
Azerbaijan			x	x	x			
Bosnia				x	x	X		
Croatia				x	x		x	
Cyprus		X						
Denmark		X			x		x	
Estonia	X			x	X		x	
Finland		X						
France			X		x			
Georgia			x		x			X
Hungary			x		X			X
Ireland			X		X	X	x	
Italy					x			
Latvia				X				
Lithuania				X				
Macedonia			x		X			
Malta					x			
Montenegro			X	X	X		x	X
Netherlands					X			X
Norway			X					X
Portugal					x	x		
Romania			X		X		x	
Slovakia				x	X			
Slovenia	x			X				
Spain					X	x		
Sweden		X					x	
Turkey		x			x			
UK		X			X		x	
US					x			
European Union			x					

Table 45 ‘Europe and North America’ region: terms employed in association with *object*.

State Parties	Definition	Monument	Relic	Antiquities	Excavation	Movable, Immovable	Underwater	Shipwreck	Cultural, State Property	Cultural Heritage	<i>In Situ</i>	Date, Age	Archaeological or Historical Value	Preservation	Protection
Albania	x	x			x				x			x	x	x	x
Armenia													x		
Austria	x				x		x					x	x		
Belarus															
Bosnia					x		x								
Bulgaria						x			x				x		
Canada	x						x					x	x		
Croatia	x	x			x		x	x	x			x	x		
Cyprus	x	x		x	x	x	x					x	x		
Denmark						x	x	x				x			
Estonia	x						x						x		
Finland	x						x	x				x	x		
France	x	x			x	x	x						x		
Georgia	x				x							x	x		
Hungary	x	x			x		x	x				x	x		
Ireland	x						x	x			x	x	x	x	x
Israel				x								x	x		
Italy				x			x		x	x		x	x		
Latvia		x	x	x									x		x
Lithuania	x	x		x	x	x	x		x	x		x	x		x
Macedonia					x	x	x								
Malta	x					x	x			x		x	x	x	
Montenegro	x	x				x						x	x		
Netherlands	x				x		x					x	x		
Norway	x	x			x			x	x			x	x		
Portugal						x									
Romania	x	x		x	x	x	x			x			x		x
Slovakia						x	x		x	x					
Slovenia						x	x	x				x			
Spain					x	x	x			x			x		
Sweden		x					x	x				x			
Turkey	x	x	x			x									
UK	x						x					x	x		
US	x				x		x					x	x		
European Union	x	x		x	x		x					x			

Table 46 ‘Europe and North America’ region: terms employed within the definition of *objects*.

State Parties	Monument	Relic	Antiquities	Excavation	Movable, Immovable	Underwater	Shipwreck	Cultural, State Property	Cultural Heritage	Date, Age	Archaeological or Historical Value, Interest	Protection
Albania	x							x				
Austria				x		x				x	x	
Canada						x				x	x	
Croatia	x			x		x				x		
Cyprus											x	
Estonia											x	
Finland										x	x	
France	x				x						x	
Georgia				x						x	x	
Hungary	x			x		x	x			x	x	
Ireland										x	x	
Lithuania	x		x	x	x	x		x		x	x	x
Malta					x	x				x	x	
Montenegro	x									x		
Netherlands				x		x				x		
Norway				x				x		x		
Romania	x		x		x	x			x		x	x
Turkey	x	x			x							
UK											x	
US				x		x				x		

Table 47 ‘Europe and North America’ region: terms employed in association with *preservation*.

State Parties	Defined	Protection	Conservation	Maintenance	<i>In Situ</i>	Underwater	Restoration
Albania		x					
Armenia		x					x
Austria							
Azerbaijan							
Belarus		x	x				x
Bosnia		x					
Bulgaria	x	x	x	x			x
Canada		x		x		x	
Croatia	x	x		x			
Cyprus				x			x
Denmark		x					
Estonia			x				
France			x			x	
Finland							
Georgia		x	x	x	x		x
Hungary			x	x	x		x
Ireland		x		x	x		x
Israel		x		x			x
Italy		x					
Latvia							
Lithuania				x			
Macedonia	x	x	x	x	x		x
Malta					x		
Montenegro		x		x			
Netherlands							
Norway		x				x	
Portugal		x					
Romania		x	x	x			x
Slovakia						x	
Slovenia	x	x	x	x			
Spain		x		x			
Sweden						x	
Turkey							
UK		x		x			
US		x	x	x		x	

Table 48 'Europe and North America' region: terms employed in association with *protection*.

State Parties	Defined	Maintenance	Safeguarding, Safe-keeping	Restoration	Underwater	Preservation
Albania	x	x				x
Armenia		x		x		x
Austria		x		x		
Azerbaijan						
Belarus				x		x
Bosnia						x
Bulgaria	x				x	x
Canada						x
Croatia	x	x	x			x
Denmark					x	x
Estonia						
Finland						
Georgia	x	x		x		x
Hungary	x	x				
Ireland		x			x	x
Israel		x				x
Italy	x			x		x
Latvia				x		
Lithuania	x	x	x	x		x
Macedonia	x	x		x		x
Malta		x		x		x
Montenegro						x
Netherlands						
Norway			x			
Portugal				x		x
Romania	x			x		x
Slovakia	x	x		x		
Slovenia		x				x
Spain		x	x			x
Sweden						
Turkey					x	
UK		x			x	
US					x	x

Table 49 'Europe and North America' region: underwater cultural heritage associations.

State Parties	Non-descript Underwater	Shipwreck	Maritime Industry	Territorial Waters, Sea	Internal Waters	Contiguous Zone	EEZ	Continental Shelf	Area, High Seas
Austria	x								
Bulgaria	x								
Canada	x	x		x	x				
Croatia	x	x	x	x	x				
Cyprus				x					
Denmark		x	x	x	x	x		x	x
Estonia	x	x	x	x	x		x		
Finland		x		x	x				
France	x	x		x		x			
Georgia	x								
Hungary	x	x							
Ireland	x	x		x	x			x	
Israel				x	x				
Italy	x	x		x	x	x	x	x	
Lithuania	x	x							
Macedonia	x							x	
Malta				x		x	x	x	
Montenegro	x								
Netherlands	x								
Norway		x	x						
Portugal	x		x	x	x			x	
Romania	x			x	x				
Slovakia	x								
Slovenia	x	x							x
Spain	x			x		x		x	
Sweden	x	x	x						
Turkey	x								
UK	x	x		x					x
US	x	x		x	x	x	x		

Table 50 ‘Europe and North America’ region: defined cultural identifying lexicon.

State Parties	Cultural Heritage	Cultural Property	Cultural Patrimony	Objects	Antiquities	Monuments
Albania	x			x		x
Armenia	x	x				
Austria				x		x
Azerbaijan	x					
Belarus	x					
Bosnia and Herzegovina		x				x
Bulgaria	x					
Canada		x		x		
Croatia				x		
Cyprus				x	x	x
Denmark	x					x
Estonia				x		x
Finland				x		x
France		x	x	x		x
Georgia	x	x		x		
Hungary	x			x		x
Ireland				x		x
Israel					x	
Italy	x	x				
Latvia						x
Lithuania	x	x		x	x	x
Macedonia	x				x	x
Malta	x	x		x		
Montenegro				x		x
Netherlands				x		x
Norway				x		x
Portugal	x	x				
Romania	x			x		x
Slovakia	x					x
Slovenia	x					x
Spain	x					x
Sweden						x
Turkey		x		x		
UK				x		x
US		x		x		

Table 51 ‘Europe and North America’ region: defined managerial lexicon.

State Parties	Conservation	Preservation	Protection
Albania			x
Armenia			
Austria			
Azerbaijan	x		
Belarus	x		
Bosnia and Herzegovina			
Bulgaria		x	x
Canada			
Croatia		x	x
Cyprus			
Denmark			
Estonia	x		
Finland			
France			
Georgia	x		x
Hungary			x
Ireland			
Israel			
Italy	x		x
Latvia			
Lithuania	x		x
Macedonia	x	x	x
Malta	x		
Montenegro			
Netherlands			
Norway			
Portugal			
Romania			x
Slovakia			x
Slovenia	x	x	x
Spain			
Sweden			
Turkey	x		
UK			
US			

Table 52 Latin America and the Caribbean State Parties.

Latin America and the Caribbean		
Included		Excluded
Antigua and Barbuda	Guatemala	Dominica
Argentina	Guyana	Saint Kitts and Nevis
Bahamas	Haiti	Suriname
Barbados	Honduras	Trinidad and Tobago
Belize	Jamaica	
Bolivia	Mexico	
Brazil	Nicaragua	
Chile	Panama	
Colombia	Paraguay	
Costa Rica	Peru	
Cuba	Saint Lucia	
Dominican Republic	St. Vincent and The Grenadines	
Ecuador	Uruguay	
El Salvador	Venezuela, Bolivarian Republic of (Venezuela)	
Grenada		

Table 53 ‘Latin America and the Caribbean’ region: terms employed in association with *antiquities*.

State Parties	Definition	Movable, Immovable	Monument	Relic	Object, Artefact	Archaeological or Historical Value, Interest	Underwater	Date, Age	Protection	Preservation	Excavation
Bahamas	x				x		x	x	x	x	x
Belize	x		x				x	x		x	x
Dominican Republic								x			
Honduras								x			
Peru			x						x		
St. Vincent and Grenadines	x				x	x				x	x
Uruguay											

Table 54 ‘Latin America and the Caribbean’ region: terms employed in association with *covering*.

State Parties	Preservation	Monument	Maintenance	Conservation	Protection	Excavation
Bahamas		x			x	
Guyana		x	x		x	
Jamaica		x	x		x	
Peru		x		x	x	x
St. Vincent and Grenadines	x					

Table 55 ‘Latin America and the Caribbean’ region: terms employed in association with *conservation*.

State Parties	Definition	Preservation	Protection	Maintenance	Underwater	Excavation	<i>In situ</i>	Property	Heritage	Covering	Restoration	Patrimony
Antigua and Barbuda			x						x			
Argentina								x				
Bahamas		x				x					x	
Brazil			x									
Colombia			x						x		x	
Costa Rica		x	x						x		x	
Cuba			x					x			x	
Ecuador		x									x	x
El Salvador												
Grenada			x						x			
Guatemala	x		x					x	x			
Honduras				x								
Mexico			x	x				x			x	
Nicaragua			x						x			
Paraguay												x
Peru			x			x		x		x	x	x
St. Vincent and Grenadines		x						x			x	
Uruguay		x										
Venezuela		x	x	x				x	x		x	

Table 56 ‘Latin America and the Caribbean’ region: terms employed in association with *cultural heritage* (bold identifies terms within the State’s definition of *cultural heritage*).

State Parties	Definition	Property	Underwater	Movable, Immovable	Monument	Antiquity	Object	Date, Age	Other Heritage	Protection	Preservation	Conservation
Antigua and Barbuda										x	x	x
Argentina									x	x	x	
Bahamas			x									
Bolivia							x		x		x	
Brazil	x			X			X		X	X	X	X
Chile										x		
Colombia	x		X	X	X				x	x	X	
Costa Rica									x	x	x	x
Cuba					x						x	
Dominican Republic	x	x	x		X				X	x	x	
Ecuador	x				X		X		x	X	x	
El Salvador	x				X	X	X			x	x	x
Grenada										x		x
Guatemala	x	X			x		X			x		x
Honduras	x	x										
Jamaica							X		X		x	
Nicaragua	x	X	x	X			X				x	
Panama		X		X	X		X		X		x	
Paraguay												
Peru	x	x	X		X		X	X	X	x		x
Uruguay												x
Venezuela	x	X		X	X		X		X	X	x	X

Table 57 ‘Latin America and the Caribbean’ region: terms employed in association with *cultural patrimony* and *cultural property* (bold identifies terms within the State’s definition of *cultural* lexicon).

State Parties	Definition of Patrimony	Definition of Property	Patrimony (Employed)	Property (Employed)	Movable, Immovable	Underwater	Date, Age	Archaeological or Historical Value, Interest	Objects, Artefacts	Heritage	Antiquities	Monument	Preservation	Protection	Conservation
Argentina				x	x	x				x					
Bolivia				x	x										
Brazil				x	x			x		x					x
Chile				x	x				x			x			
Colombia		x										X			
Costa Rica		x			X								x	x	
Cuba		x			X		X	X	X			X			
Dominican Republic		x	x		X		X	X	X	x	X	X	x	x	
Ecuador	x							X	X			X			
El Salvador		x			x			X	x	x		X	x		
Guatemala		x	x			X		X	X			X			
Honduras		x			X	X	X	X	X		X	X	X	x	
Mexico			x	x	x							x	x		
Nicaragua				x	x					x					
Panama				x	x				x	x					
Peru	x	x		x	x	X		X	X	X		x		X	x
St. Lucia				x	x										
St. Vincent and Grenadines				x					x						
Uruguay			x												
Venezuela		x				X		x	X	x		X			

Table 58 'Latin America and the Caribbean' region: derivatives of *monument* employed (old identifies defined derivatives).

State Parties	Monument	Historical monument	National monument	Ancient monument	Prehistoric monument	Archaeological monument	Underwater located
Argentina	x						
Bahamas	X						
Belize				X			X
Bolivia	X		X		x		
Brazil	x				X	x	
Chile		X	X				X
Colombia	x		x				
Costa Rica	X					x	
Cuba		x	X				
Dominican Republic	x	x					
Ecuador	x					x	
El Salvador	x						
Grenada	x						
Guatemala	X	x	x				
Guyana	X		X				X
Haiti	x						
Honduras	X	x	x				
Jamaica			X				X
Mexico	x	X				X	
Panama		x	X				
Paraguay	x						
Peru	x	X	x			X	X
St. Lucia	x	x					
Uruguay	X	x					
Venezuela	x		x			x	

Table 59 ‘Latin America and the Caribbean’ region: terms employed in association with *objects*.

State Parties	Definition	Monument	Relic	Antiquity	Excavation	Movable, Immovable	Underwater	Shipwreck	Property	Heritage	Date, Age	Archaeological or Historical Value, Interest	Protection	Preservation	Artefact	Conservation	Patrimony
Argentina		x			x				x					x			
Bahamas	x	x			x	x	x				x		x		x		
Barbados												x		x			
Belize		x		x													
Bolivia	x	x							x	x		x	x	x			
Brazil												x					
Chile		x				x	x					x		x			
Colombia		x								x							
Costa Rica	x	x			x				x		x	x					
Cuba	x	x										x	x	x			
Dominican Republic					x		x				x						
Ecuador		x									x	x					
El Salvador				x						x							
Grenada												x		x	x		
Guatemala	x	x							x	x	x	x	x	x			
Guyana		x			x		x										
Haiti		x				x						x				x	
Honduras						x				x		x					
Jamaica					x		x			x			x	x			
Mexico						x	x		x			x					
Nicaragua																	
Panama		x				x			x	x		x					
Paraguay			x									x	x				
Peru		x			x	x	x		x	x		x	x		x	x	x
St. Lucia	x	x					x					x		x			
St. Vincent and Grenadines				x								x		x		x	
Uruguay	x			x							x						
Venezuela	x								x	x		x					

Table 60 'Latin America and the Caribbean' region: terms employed in association with *preservation*.

State Parties	Definition	Protection	Conservation	Maintenance	Restoration	<i>In situ</i>	Underwater
Antigua and Barbuda		x					
Argentina		x					
Bahamas			x	x	x		x
Barbados							x
Belize				x	x		x
Bolivia		x		x	x	x	
Brazil		x					x
Chile					x		
Colombia	x	x		x	x	x	x
Costa Rica		x	x	x	x		
Cuba		x		x	x		
Dominican Republic		x				x	
Ecuador		x	x		x		
El Salvador		x					
Grenada		x					
Guatemala					x		
Guyana		x					
Honduras		x			x		
Jamaica		x					
Mexico		x			x		
Nicaragua		x		x	x		x
Panama		x		x	x		
Paraguay					x		
Peru			x	x	x		
Saint Lucia		x		x			x
St. Vincent and The Grenadines		x					
Uruguay			x				
Venezuela		x	x		x		

Table 61 'Latin America and the Caribbean' region: terms employed in association with *protection*.

State Parties	Definition	Preservation	Conservation	Restoration	Maintenance	Underwater	Safeguard	Management
Antigua and Barbuda		x	x					x
Argentina		x					x	
Bahamas								
Barbados						x		
Belize				x				
Bolivia		x						
Brazil		x	x		x			
Chile						x		
Colombia		x					x	
Costa Rica		x	x	x	x			
Cuba	x	x	x	x				
Dominican Republic		x						
Ecuador		x		x			x	
El Salvador		x						
Grenada		x	x					
Guatemala	x		x				x	
Guyana		x			x			
Honduras		x		x		x		
Jamaica		x			x			
Mexico			x	x				
Nicaragua		x		x		x	x	
Panama		x						
Paraguay				x				
Peru		x	x	x		x		
Saint Lucia		x			x			
St. Vincent and The Grenadines		x						
Venezuela		x	x	x	x		x	

Table 62 'Latin America and the Caribbean' region: underwater cultural heritage associations.

State Parties	Non-descript Underwater	Shipwreck	Internal, Inland Waters	Territorial Waters, Sea	Contiguous zone	EEZ	Continental Shelf	Sovereign, Jurisdictional Waters	Aircraft
Argentina	x			x					
Bahamas	x	x		x					
Barbados		x		x					
Belize	x	x	x	x					
Brazil	x	x						x	
Chile	x	x	x	x				x	x
Colombia	x	x	x	x		x	x		
Dominican Republic	x	x				x			
El Salvador				x		x	x	x	
Grenada	x		x	x					
Guatemala	x			x					
Guyana				x				x	
Honduras	x							x	
Jamaica				x		x		x	
Mexico	x		x	x			x	x	
Nicaragua	x		x	x		x	x		
Panama	x								
Peru	x	x	x	x					x
Saint Lucia	x								
Uruguay		x							
Venezuela	x								

Table 63 'Latin America and the Caribbean' region: defined cultural identifying lexicon.

State Parties	Antiquities	Cultural heritage	Cultural patrimony	Cultural property	Monuments	Objects
Antigua and Barbuda						
Argentina						
Bahamas	x				x	x
Barbados						
Belize	x				x	
Bolivia					x	x
Brazil		x			x	
Chile					x	
Colombia		x		x		
Costa Rica				x	x	x
Cuba				x	x	x
Dominican Republic		x		x		
Ecuador		x	x			
El Salvador		x		x		
Grenada						
Guatemala		x		x	x	x
Guyana					x	x
Haiti						
Honduras		x		x	x	
Jamaica					x	
Mexico					x	
Nicaragua		x				
Panama					x	
Paraguay						
Peru		x	x	x	x	
Saint Lucia						x
Saint Vincent and The Grenadines	x					
Uruguay					x	x
Venezuela		x	x			x

Table 64 ‘Latin America and the Caribbean’ region: defined managerial lexicon.

State Parties	Conservation	Preservation	Protection
Antigua and Barbuda			
Argentina			
Bahamas			
Barbados			
Belize			
Bolivia			
Brazil			
Chile			
Colombia		x	
Costa Rica			
Cuba			x
Dominican Republic			
Ecuador			
El Salvador			
Grenada			
Guatemala	x		x
Guyana			
Haiti			
Honduras			
Jamaica			
Mexico			
Nicaragua			
Panama			
Paraguay			
Peru			
Saint Lucia			
Saint Vincent and The Grenadines			
Uruguay			
Venezuela			

Appendix 2: State Party legislation

Africa	
Algeria	Angola
1963 Decree No. 63-403 of 12 October 1963	1976 Decree No. 80/76 of 1976
1969 Decree No. 69 - 82 of June 13 1969	1990 Law No. 6/90 of May 5 th 1990 (excerpts)
1984 Presidential Decree No. 84-1814 of 1984	1992 Law No. 21 of 1992
1998 Law No. 98 - 04 of 20 Safar 1419, corresponding to June 15, 1998	1998 Law No. 5/98 – Law on the Basis of the Environment (excerpts)
Botswana	2005 Law No. 14/05 – Law of Cultural Heritage (excerpts)
1970 Monuments and Relics Act 1970, amended 2001	2010 2010 Constitution of Angola
2004 Monuments and Relics Regulations 2004	Burkina Faso
Cameroon	1985 Decree No. 85 - 493/CNR/PRES/INFO of 1985
1963 Federal Act No. 63 - 22, 19 June 1963	1985 Ordinance No. 85-04/CNR/PRES of 1985
Cote d'Ivoire	1987 Raabo No. AN IV/54 CNR/CAB/DPCAB
1956 Statute No. 56-1106, 3 November 1956	1999 Order No. 99/3/MEF/SG/DGTCP/DELF
1987 Law No. 87 - 806 of 1987	Egypt
1999 Decree No. 99-319 of April 1999	1891 Decree of 17 November 1891
Ethiopia	1912 Ministerial Order No. 50 of 1912
1966 Antiquities Proclamation No. 229 of 1966 (excerpts)	1951 Decree concerning the Territorial Waters of the United Arab Republic of 15 January 1951, as amended in 1958
2000 Research and Conservation of Cultural Heritage Proclamation No. 209, 2000	1983 Law No. 117 of 1983, amended by Law No. 3 of 2010
The Gambia	2010 Law No. 3 Antiquities (Amendment) Protection Law 2010
1968 Territorial Sea and Contiguous Zone Act, No. 4 of 1968, amended 1969	Ghana
1989 National Council for Arts and Culture Act No. 11 of 1989	1969 National Liberation Council Decree 387 of 1969 (a.k.a. National Museum Decree, 1969)
Kenya	1973 National Museum Regulations 1973
2006 National Museums and Heritage Act 2006	1986 Maritime Zones (Delimitation) Law 1986

Kenya continued	Lesotho
2009 National Museums (Open Spaces and Areas of National Heritage) (Protection and Management) Rules, 2009	1967 The Historical Monuments, Relics, Fauna and Flora Act, No. 41 of 1967
Malawi	2002 Tourism Act 2002
1965 Monuments Act 1965	Mali
1990 Monuments and Relics Act (Act No. 16) 1990	1956 Law No. 56-1106 of 3 November 1956
1996 Environment Management Act 1996	1973 Ordinance No. 47/CMLN of 31 August 1973(excerpts)
Mauritius	1985 Law No. 85-40/AN-RM of 1985
1991 Environment Protection Act 1991, amended 1993	1985 Decree No. 275/PG-RM of 1985
2003 National Heritage Fund Act No. 40 of 2003	1985 Decree No. 203/PG-RM of 13 August 1985
2005 Maritime Zones Act, 2005	1986 Decree No. 299/PG-RM 1986
Morocco	1986 Law No. 86-61/AN-RM of 26 July 1986
1973 Dahir enacting Law No. 1.73.211 of 21 Moharrem 1371 (2 March 1973)	Namibia
1980 Law No. 22 – 80 (25 December 1980) (excerpts)	1990 Territorial Sea and Exclusive Economic Zone of Namibia Act of 1990 as amended in 1991
1980 Dahir No. 1-80-341 promulgating Law No. 22-80	2004 National Heritage Act 27 of 2004
1980 Dahir No. 1-81-179, promulgating Law No. 1-81	Nigeria
Senegal	1979 National Commission for Museums and Monuments Decree of 1979
1971 Law No. 71 - 12 of 25 January 1971 (excerpts)	Seychelles
1973 Decree No. 73 - 746, 8 August 1973 (excerpts)	1980 National Monuments Act 1980
1985 Act No. 85-14 delimiting the Territorial Seas, the Contiguous Zone and the Continental Shelf, 25 February 1985	1999 Maritime Zones Act No. 2 of 1999, amended in 2009
South Africa	2008 Maritime Zones (Exclusive Zone and Continental Shelf) Order, 2008
1986 National Heritage Resources 1986, as amended Act 25 of 1999	Sierra Leone
1994 Maritime Zones Act 1994	1946 Monuments and Relics Ordinance of 1946, as amended to 1967
2002 Declaration No. 1512 of 2002	Sudan
Swaziland	1952 Antiquities Ordinance No. 2 of 1952, as amended to 1999
1969 National Monuments Act 28 of 1969, as amended to 1979	1970 Territorial Waters and Continental Shelf Act, 1970
1972 The National Trust Commission Act 1972	Tanzania (United Republic of)
Uganda	1963 National Museums Act of 1963, as amended to 1980
1965 National Culture Centre Amendments Act 1965	1964 Antiquities Act No. 10 of 1964, as amended to 1979
1967 Historical Monuments Act No. 22 of 1967	1967 Land Acquisition Act 1967
1977 Historical Monuments (Amendment) Decree No. 6 of 1977	1980 National Museum of Tanzania Act 1980

Uganda continued	Tanzania (United Republic of) continued
1993 Constitution (Amendment) Statute No. 7 of 1993 (excerpts)	1989 Territorial Sea and Exclusive Economic Zone Act 1989
1993 Traditional Rulers (Restitution of Assets and Properties) Statue No. 8 of 1993 (excerpts)	Zimbabwe
1995 The Constitution of the Republic of Uganda, 1995	1961 Mines and Minerals Act 1961 (excerpts)
Zambia	1972 National Museums and Monuments of Rhodesia Act 1972
1966 National Museums Act, 1966	1973 National Museums and Monuments of Zimbabwe By-laws 1973
1989 National Heritage Conservation Commission Act, No. 23 of 1989	2001 National Museums and Monuments of Zimbabwe Act 1972 amended 2001
Arab States	
Algeria	Armenia
1963 Decree No. 63-403 of 12 October 1963	1978 Regulations concerning the protection of historic monuments in Armenia, 1978
1969 Decree No. 69 - 82 of June 13 1969	1999 Attachment No. 1 of the RA Government Decision No. 137 of 5 March 1999
1984 Presidential Decree No. 84-1814 of 1984	Bahrain
1998 Law No. 98 - 04 of 20 Safar 1419, corresponding to June 15, 1998	1970 The Bahrain Antiquities Ordinance of 1 March 1970, amended in 1985
2006 Charter for African Cultural Renaissance, 2006	1993 Decree-Law No. 8 of 1993
Egypt	1995 Decree Law No. 11 of 1995
1891 Decree of 17 November 1891	Iraq
1912 Ministerial Order No. 50 of 1912	2002 Law No. 55 of 2002
1958 Decree concerning the Territorial Waters of the United Arab Republic of 15 January 1951, as amended to 1958	Jordan
1983 Law No. 117 of 1983, amended in 2010	1975 Rules of excavation as at 1 January 1975 (excerpts)
2006 Charter for African Cultural Renaissance, 2006	1976 The Antiquities Law, Provisional Law, No. 12 of 1976 (excerpts)
2010 Law No. 3 Antiquities (Amendment) Protection Law 2010	1988 Antiquities Law No. 21 of 5 March 1988, as amended to 2008
Kuwait	Lebanon
1960 Princely Decree No. 11 of 1960 amended in 1976	1933 Order No. 166 L.R. of 7 November, 1933
1976 Ameer Decree No. 111 of 1976	1934 Decree No. 225 L.R. of 28 September 1934
Malta	1988 Decree No. 8 of 1988
1925 Antiquities (Protection) Act, No. XI of 1925 as amended in 1974, repealed by Cultural Heritage Act 2002 but Cap. 54 continues as if under 2002 Act	2008 Law No. 37 of 2008

Malta continued	Morocco
1975 Territorial Waters and Contiguous Zone (Amendment) Act 1975 No. XLVI of 1975, 21 October 1975 as amended in 2005	1973 Dahir enacting Law No. 1.73.211 of 21 Moharrem 1371 (2 March 1973)
2005 Cultural Heritage Act Chapter 445 of 2002 as amended in 2005	1980 Law No. 22 – 80 (Dahir No. 1-80-341 du 17 Safar 140 (excerpts)
Saudi Arabia	1980 Dahir No. 1-80-341
1958 Royal Decree No. 33 of February 1958	1980 Dahir No. 1-81-179
1972 Regulation for antiquities, Royal Decree No. 17/26 of 3 August 1972 (excerpts)	Syrian Arab Republic
Sudan	1963 Decree-Law No. 222 of 26 October 1963, amended in 1999
1952 Antiquities Ordinance No. 2 of 1952, as amended 1999	1969 Decree-Law No. 295 of 2 December 1969
1970 Territorial Waters and Continental Shelf Act, 1970	2003 Law No. 28 of 19 November 2003
1976 Charte culturelle de l'Afrique (Cultural Charter for Africa)	United Arab Emirates
	1970 Law No. 8 of 1970 (excerpts)
	1993 Federal Law No. 19 of 1993
Asia and the Pacific	
Afghanistan	Australia
2004 Law on the Preservation of the Historical and Cultural Heritage	1912 Navigation Act, as amended to Act. No. 168 of 2011
Bangladesh	1973 Sea and Submerged Lands Act 1973, as amended to 1994
1968 Antiquities Act 1968, amended in 1976	1975 National Parks and Wildlife Conservation Act 1975, as amended 1992
1971 Constitution of the People's Republic of Bangladesh	1975 Australian Heritage Commission Act 1975, amended 1976, 1980 and 1992
1972 The Bangladesh Abandoned Property (Control, Management and Disposal) Order, 1972	1976 Historic Shipwrecks Act, No. 190 of 1976 as amended to 2001
1974 Territorial Waters and Maritime Zones Act; Ministry of Foreign Affairs Declaration No. LT-I/3/74, April 13, 1974	1978 Historic Shipwreck Regulations 1978, as amended 2002
1986 Antiquities Preservation Rules 1986	1980 Museum of Australia Act, 1980
Brunei Darussalam	1983 World Heritage Properties Conservation Act 1983, amended 1988
1967 Antiquities and Treasure Trove Enactment 1967, amended 2002	1984 Aboriginal and Torres Strait Islander Heritage Protection Act 1984
Cambodia	1986 Protection of Movable Cultural Heritage Act 1986, amended 2001
1956 Law Respecting the Classification, Conservation, and Protection of Historical Monuments 1956 (excerpts)	1989 Arts, Environment, Tourism and Territories Legislation of 1989, amended in 1990
1982 Straight Baseline Legislation 1982	1990 Australian National Maritime Museum Act 1990, as amended to 2011

Cambodia continued	Australia continued
1982 Decree 13 July 1980, Council of State of Cambodia on Territorial Waters	1999 Environment Protection and Biodiversity Conservation Act No. 91 of 1999, amended Act No. 5, 2011
1992 Resolution on the Protection of Cultural Heritage 1992	2006 Environment and Heritage Legislation Amendment Bill (No. 1) 2006
1995 Royal Decree NS/RKT/0295/11 establishing the Supreme Council on National Culture	2010 Australian Underwater Cultural Heritage Intergovernmental Agreement
1996 Law on the Protection of Cultural Heritage 1996	Cook Islands
2002 Sub Decree on enforcement of Cultural Heritage Protection	1995 Cultural and Historic Places Act No. 40 of 1994-95
2007 Law on Customs, 20 July 2007	Fiji
China	1981 Legal Notice No. 119 of 1981
1928 Regulations Governing Preservation of Scenic Resorts, Ancient Remains and Relics 1928	1981 Marine Spaces (Territorial Seas) (Rotuma and its Dependencies) Order No. 118 of 1981
1935 Relics Preservation Law 1935	1986 Customs Act 1986
1935 Rules Governing the Excavation of Relics	India
1950 Provisional Regulation for the Prohibition of Export of Valuable Cultural Relics and Books, 24 May 1950 (excerpts)	1878 Indian Treasure Trove 1878, as modified up to 1 September 1949
1960 Provisional Regulations of 17 November 1960 (excerpts)	1958 The Ancient Monuments and Archaeological Sites and Remains Act No. 24 of 1958, as amended to 1979
1982 Constitution of the People's Republic of China	1959 Ancient Monuments and Archaeological Sites and Remains Rules 1959, as amended to 1971
1982 Law on the Protection of Cultural Relics (order of the President No. 84) 1982, as amended to 2007	1962 Customs Act 1962
1989 Regulation on Protection and Administration of Underwater Cultural Relics	1972 Antiquities and Art Treasure Act, 1972, as amended to 1982
1991 Administration of the Foreign-related Archaeological Activities, Decree No. 1 of 22 February 1991	1973 Antiquities and Art Treasure Rules, 1973, as amended to 1992
1992 Law on the Territorial Sea and the Contiguous Zone of 25 February 1992	1976 Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act No. 80 of 1976
1998 EEZ and Continental Shelf Act, 1998	Indonesia
2001 Rating Standards for Cultural Relic Collections 2001	1945 Constitution 1945
2002 Order No. 76 of 2002 on the Protection of Cultural Relics	1971 Act No. 35 of 1971 on State Boundaries
2003 Regulations for the Implementation of the Law of the People's Republic of China on Protection of Cultural Relics 2003	1983 Act No. 5 of 1983 of 18 October 1983

China continued		Indonesia continued	
2009	Provisional Measures on the Recognition and Administration of Cultural Relics, Decree No. 46 of 2009	1992	Act No. 5 of 1992 on Cultural Protection of Objects, amended 1999 and reprinted in 2003
1940	Preservation of Objects of Archaeological and Palaeontological Interest 1940, amended 1978	1993	Governmental Decree No. 10/1993, Chapter 29
1977	Fiji Museum Act, Chapter 263 of 1977	1996	Act No. 6 of 8 August 1996
1977	Marine Spaces Act; Interpretation (Amendment) Act, 1977, as amended in 1978	2010	Law No. 11 of 2010
1981	Marine Spaces (Archipelagic Baselines and Exclusive Economic Zone) Order, No. 117 of 1981, as amended 1985	2010	Explanation on Law No. 11 of 2010
Iran, Islamic Republic of		Japan	
1930	National Heritage Protection Act 1930, 3 November 1930	1950	Law No. 214 of 30 May 1950, as amended to 2007
1930	Regulations implementing the Law relating to the conservation of antiquities in Iran, 3 November 1930	1977	Law No. 30 of 1977
1968	Law No. 2404 of 1968, Supplementary Law to the General Penal Law	1996	Law No. 74 of 1996
1968	Law of the Purchase of Land, Monuments and Foundations for the Protection of Ancient and Historical Monuments 1968, 25 November 1968, noted in the Gazette 1970	2001	Law No. 148, 2001
1973	National Heritage Registration Act 1973 (Excerpts)	2002	Act Concerning Controls on the Illicit Export and Import of Cultural Property 2002
1975	Law No. 8980, of 1 November 1975	2006	Law on the Promotion of International Cooperation for Protection of Cultural Heritage Abroad 2006
1979	Constitution of the Republic of Iran, as amended 1992	2008	Museums Act, 2008
1980	Legal bill on preventing clandestine diggings and illegal excavations 1980	Korea (Republic of)	
1980	The Bill concerning the palaces of Niavaran and Sa'd-abad, and evaluating and maintaining the pertinent properties thereof 12 April 1980, amended 10 March 1982	1962	Cultural Heritage Protection Act No. 961 of 1962, as amended to 2007 (NOTE: used to be called Cultural Property Preservation Act)
1986	Law on establishing the Iranian Cultural Heritage Organization, 30 January 1986	1962	Cabinet Decree No. 843 of 1962, as amended by the Enforcement Decree of the Cultural Heritage Protection (Amendment) Act 2007
1988	Law on the articles of association of the State Cultural Heritage Organisation, 1988, as amended to 1998	1995	Territorial Sea and Contiguous Zone Act, Law No. 3037 of 1977, as amended to 1995
1993	Action the Marine Areas of the Islamic Republic of Iran in the Persian Gulf and the Oman Sea	1996	Exclusive Economic Zone Act No. 5151 of 1996

Lao, People's Democratic Republic of		Malaysia	
1982	Resolution 48/CM of the Council of Ministers, 24 March 1982 (Excerpts)	1952	Merchant Shipping (Amendment and Extension) Act A1316 of 2007, Originally Merchant Shipping Ordinance 1952
2005	Law on National Heritage 2005	1977	Sabah Antiquities and Treasure Trove Enactment 1977
Maldives		1985	Fisheries Act 1985
1979 1979	Law of Historical and Cultural Properties of the Republic of Maldives	1993	Sarawack Cultural Heritage Ordinance 1993, originally 1954
1993	Environment Protection and Preservation Act of Maldives 1993	2005	National Heritage Act, 2005, as amended to 2006
2008	Constitution 2008	Mongolia	
Marshall Islands		1970	Law No. 167 of 12 October 1970
1966	U.S. National Historic Preservation Act, as amended to 1992	Nepal	
1984	The Marine Zones (Declaration) Act 1984,	1956	Ancient Monuments Protection Act 1956 (a.k.a. Ancient Monument Preservation Act 2013 (1956 AD)), as amended to 1994
1984	National Environmental Protection Act 1984	1969	Nepal Gazette, Regmi Research Project NG 39/69, Vol. 18, No. 51, Chaitra 25, 2025 (April 7, 1969)
1989	Earthmoving Regulations 1989, as amended 1994	1969	Notification concerning the exportation and movement of historical, archaeological, or artistic objects 7 April 1969 (Excerpts)
1990	Wrecks and Salvage Act 1990, amended 2003	1999	Local Self Governance Act No. 2055 of 1999
1991	Regulations Governing Land Modification Activities 1991	2007	Interim Constitution of 2007
1991	Historic Preservation Act of 1991	New Zealand	
1991	Regulations Regarding the Conduct Of Archaeological And Anthropological Research In The Republic 1991	1954	Historic Places Act 1954, as amended to 1993
1991	Regulations Governing the taking and export of artefacts 1991	1977	Reserves Act 1977
1991	Regulations Governing Access to Prehistoric and Historic Submerged Resources 1991	1977	Territorial Sea, Contiguous Zone, and Exclusive Economic Zone Act 1977
2004	Public Lands Act, revised code 2004	1980	National Parks Act 1980
Micronesia, Federated State of		1987	Conservation Act 1987
1966	Historic Preservation Act 1966, as amended to 1992	1991	Resource Management Act 1991
1970	Title 26 of 1970, Historic Sites and Antiquities	1991	Crown Minerals Act 1991
1975	Constitution of 1975	1993	Historic Places Act 1993, as amended
1980	Title 18. Territory, Economic Zones and Ports of Entry,	2006	Protected Objects Act 1975, amended 2006
1989	Environmental Impact Assessment Regulations, 1989	2011	Marine and Coastal Area (Takutai Moana) Act 2011

Micronesia, Federated State of continued	Palau
1998 Title 19. Admiralty & Maritime, Chapter 9: Wreck Salvage	1995 Historical and Cultural Preservation Act 1995
1999 Title 25. Environmental Protection	Papua New Guinea
Myanmar	1965 National Cultural Property (Preservation) Act 1965, as amended
1957 Antiquities Act 1957	1977 National Seas Act 1977
1977 Territorial Sea and Maritime Zones Law, No. 3 of 1977	1978 Conservation Areas Act 1978
1998 Protection and Preservation of Cultural Heritage Regions Law 1998	1992 National Museum and Art Gallery Act, 1992
2009 Law Amending the Protection and Preservation of Cultural Heritage Regions Law 2009	1996 Land Act 1996
Pakistan	Philippines
1878 Indian Treasure Trove 1878, as modified by Act XII of 1891	1961 Act No. 3046 of 17 June 1961, amended in 1968
1947 Antiquities (Export Control) Act 1947, amended 1954	1966 Cultural Properties Preservation and Protection Act No. 4846 of 1966, amended in 1974
1968 Antiquities Act 1968, amended 1975, again 1992	1973 Presidential Decree No. 1505, amending No. 260
1975 Antiquities Act 1975, as amended 1992	1975 Presidential Decree No. 812 on Legal and Cultural Deposit, 1975
1976 Territorial Waters and Maritime Zones Act 1976	1978 Presidential Decree No. 1599 of 11 June 1978
1978 Archaeological Excavation and Exploration Rules 1978, amended 1989	1980 Presidential Decree No. 1726-A of 1980
1979 Export of Antiquities Rules 1979	1981 Presidential Decree No. 1820 of 1981
1979 Immovable Antiquities (Mining, Quarrying and Blasting in Restricted Areas) Rules 1979	1987 Constitution of the Philippines 1987
1982 Admission of Public into Immovable Antiquities Rules 1982	1992 Republic Act No. 7356 of 1992
1985 National Fund for Cultural Heritage Act 1985, as amended 1994	1998 Republic Act No. 8492, National Museum Act of 1998
1989 Acquisition of Antiquities Rules 1989, amended 1990	2004 Protection of Underwater Cultural Heritage Act of 2004
1989 Dealing in Antiquities Rules 1989	2009 Republic Act No. 10066, National Cultural Heritage Act of 2009
1993 Prohibition for Movement of Antiquities Between Specified Areas (Notification) 1993	Thailand
1994 National Fund for Cultural Heritage Act, 1994	1961 Act on Ancient Monuments, Antiques, Objects of Art and National Museums, B.E. 2504 (1961 A.D.), amended 1992
Singapore	1966 Proclamation establishing the Breadth of the Territorial Waters of 6 October 1966
1970 Preservation of Monuments Act 1970, as amended 1983	1971 Petroleum Act of 26 March 1971
1993 National Heritage Board Act Ch. 196A (Act No. 13 of 1993), as amended 2004	1981 Proclamation on EEZ 1981

Sri Lanka	Turkey
1940 Antiquities Ordinance No. 9 of 1940, as amended to 1956	1983 Cultural and Natural Objects (Conservation) Act No. 2863 of July 1983 as amended to of 2009
1942 National Museum Ordinance of 1942, amended 1956	1987 Regulation for Determination and Registration of Cultural and Natural Properties No. 19660, amended in 1989
1976 Maritime Zones Law, No. 22 of 1 September 1976	Uzbekistan
1977 Presidential Proclamation of 15 January 1977	1998 Law of Uzbekistan about Export and Import of Cultural Values
Tonga	2001 Law on Preservation and Utilization of Objects of Cultural Heritage 2001
1969 Preservation of Objects of Archaeological Interest Act of 1969	Vietnam
2003 Environmental Impact Assessment Act No. 16 of 2003	1945 Decree for the Preservation of Remains, 23 November 1945 (Excerpts)
2010 Environmental Impact Assessment Regulations 2010	1977 Statement on the Territorial Sea, the Contiguous Zone, the Exclusive Economic Zone and the Continental Shelf of 2 May 1977
Vanuatu	1984 Regulation of 4 September 1984 concerning the Preservation and Use of Historical and Cultural Remains and Scenic Sites (Excerpts)
1965 Joint Regulation to Provide for the Preservation of Sites and Objects of Historical, Ethnographical or Artistic Interest 1965	1985 Regulation of 31 December 1985 on the execution of the Regulation on the Preservation and Use of Historical and Cultural Remains and Scenic Sites (Excerpts)
1981 Maritime Zones Act No. 23 of 1981	2001 Law on Cultural Heritage No. 28/2001/QH10 of 2001
2008 Preservation of Sites and Artefacts (Amendment) Act No. 21 of 2008	2002 Decree No. 92/2002/ND-CP of 11 November 2002 detailing the implementation of a number of articles of the Cultural Heritage Law
2010 Environmental Management and Conservation Act No 28 of 2010	
Europe and North America	
Albania	Belarus
1990 Decree No. 7366 to Modify Decree No. 4650 dated 9 March 1990	1992 Law No. 1940 of 1992
1998 Constitution of Albania	2008 Code of the Republic of Belarus on Land No 425 Z of 2008
2003 Law for the Cultural Heritage, No. 9048 of 2003, amended in 2006	Azerbaijan
Armenia	1998 Law on the Protection of Historical and Cultural Monuments, 1998
1978 Regulation concerning the protection of historic monuments Armenia	1998 Law on Culture, 6 February 1998 (Excerpts)
1999 Attachment No. 1 of the RA Government Decision No. 137, 1999	1998 Decree No. 725 of 13 June 1998 (Excerpts)
Bosnia and Herzegovina	2002 Azerbaijan Constitution, 2002
1995 Dayton Peace Agreement, Annex 8 of 14 December 1995	Austria
2001 Decree on the Promulgation of the Law on the Protection of Properties Designed as National Monuments of Bosnia and Herzegovina 2001	1918 Export Regulations for Works of Art and Cultural Heritage, as amended by the Federal Law Gazette, No. 282/1958 (Excerpts)

Bosnia and Herzegovina		Austria	
2001	Law on implementation of the Decision of the Annex 8 Commission to Preserve National Monuments, Pursuant to Article 23 of Statute, 14, 2001	1923	Monument Protection Act, No. 553/1923, amended by BGBl I No. 170/1999 (Excerpts)
2002	Criteria to designate the properties as national monuments	1985	Law on the Prohibition of Export of Objects of Historical, Artistic or other Cultural Significance of 18 April 1985 (Cultural Goods Export Prohibition Law) (Excerpts)
2002	Law on implementation of Decisions of the Commission to Preserve National Monuments established under Annex 8 of the Dayton Peace Agreement to the General Framework Agreement for Peace in Bosnia and Herzegovina, 8 February 2002	1986	Regulations: Cultural goods whose retention within the country is not required in the public interest BGBl. 323/1986 (Excerpts)
2003	Criminal Code No. 49/03 of 2003	1986	Regulations: Detailed provisions concerning the procedure governing the export of cultural goods BGBl. 324/ 1986 (Excerpts)
2003	Criminal Code No. 36/03 December 2003	1993	Federal Act on Environmental Impact Assessment BGBl. No. 697/1993, as amended to 2000
Bulgaria		1999	Regulation 484 of 1999
1987	Act of 8 July 1987	1999	Federal Law 170 of 1999
1991	Constitution of Bulgaria, as amended 2003	1999	Regulation 483 of 1999
1999	Protection and Development of Culture Act 1999, as amended 2007	2009	Constitution, as of 2009
2004	Ordinance on the Export and Temporary Export of Cultural Goods, 2004, as amended to 2006	Canada	
2005	Ordinance No. 1 of 28 January 2005, amended April 2005	1970	National Parks Act, as amended to 2010
2009	Cultural Heritage Act No. 19/13.03 of 2009 (excerpts)	1985	Historic Sites and Monuments Act 1985, amended 2012
Croatia		1985	Cultural Property Export and Import Act 1985, amended to 2005
1990	Croatia Constitution 1990, as amended May 2004	1985	Territorial Sea and Fishing Zones Act, 1985
1994	The Maritime Code, 1994	1995	Department of Canadian Heritage Act, 1995, amended to 2005
1999	Ordinance on Performing Underwater Activities No. 47/99 of 1999	1996	Oceans Act, 1996
1999	Law on the Protection and Preservation of Cultural Goods, amended 2003	1998	Parks Canada Agency Act 1998, amended 2010
2004	Ordinance establishing cultural objects considered as national treasures of the Member States of the European Union OG/38/04 of 2004	2001	Canada Shipping Act, 2001
Cyprus		2002	National Marine Conservation Areas Act 2002, amended 2010
1935	Antiquities Law, as amended to 2006	2008	Heritage Lighthouse Protection Act 2008
1960	Constitution 1960, as amended 1996	2012	Territorial Sea Geographical Coordinates (Area 7) Order 2012

Cyprus continued	Denmark
2002 The Return of Cultural Objects Law No. 183(1), 2002	1963 Protection of Historic Shipwrecks Act of 31 May 1963 (excerpts)
2002 Law on the Export of Cultural Goods No. 182(1) of 2002	1963 Royal Decree of 7 June 1963
Estonia	1971 Act No. 259 of 9 June 1971
1992 Constitution of Estonia 1992	1972 Customs Act No. 519 of 13 December 1972
1993 Law of Property Act 9 June 1993 (RT I 1993, 39, 590)	1984 Museum Act as amended by No. 473 of 2001
1996 Museums Act 1996, as amended 2007	1986 Act No. 332 of 4 June 1986, amended in 2001
1999 Environmental Monitoring Act 1999, as amended 2005	1987 Executive Order No. 404 of 11 June 1987
2001 Penal Code (RT I 2001) of 6 June 2001, as amended to 2004	1992 Act No. 9 of 3 January 1992
2002 Heritage Conservation Act 27 February 2002, as amended to 2011	1999 Executive Order No. 242 of 21 April 1999
2003 Act on the Return of Cultural Objects Unlawfully Removed from the Territory of a Member State of the European Union	2002 Executive Order No. 613 of 19 July 2002
2005 Environmental Impact Assessment and Environmental Management System Act 2005, as amended 2009	2006 Executive Order No. 1513 of 14 December 2006
European Union	2006 Executive Order No. 1505 of 14 December 2006
1992 European Convention on the Protection of the Archaeological Heritage	2006 Executive Order No. 1514 of 14 December 2006
1993 Council Directive 93/7/EEC of 1993, amended 2001	Finland
1998 Recommendation 1372 of 1998	1961 Water Act 264/1961 of 1961
2000 Recommendation 1486 of 2000	1963 Antiquities Act No. 295 of 17 June 1963
2005 Council of Europe Framework Convention on the Value of Cultural Heritage for Society	1996 Nature Conservation Act 1996
2008 Council Regulation (EC) No. 116/2009 of 18 December 2009	1997 Nature Conservation Decree 1997
France	1999 Decree No. 189/1999 of 1999
1913 Historic Monuments Act 1913 as amended to 1951 (excerpts)	1999 Act No. 115/1999 of 1999
1930 Act of 2 May 1930 (excerpts)	1999 Constitution of Finland (731/1999)
1941 Law of 27 September 1941, as amended to 1994	1999 Land Use and Building Act No. 132/1999, as amended to 2003
1958 Constitution 1958, as amended	1999 Land Use and Building Decree No. 895/1999 of 1999
1988 Law No. 8-12 of 5 January 1988 as amended	2000 Environmental Protection Act 2000, as amended 2006
1989 Law No. 89-874 of 1 December 1989	2000 Environmental Protection Decree No. 169/2000 of 2000
1992 Law No. 92-1477 of December 31, 1992 (excerpts)	2004 Act on the EEZ on 26 November 2004
1993 Law No. 93-124 of January 1993 (excerpts)	2004 Government Decree on the EEZ, on 2 December 2004
1997 Decree No. 97 – 286, 25 March 1997	Hungary
2000 Law No. 643, Modifying Law No. 92-1477 of 2000	1949 Constitution 1949, as amended 1997

France continued	Hungary continued
2001 Act No. 2001-44 of 17 January 2001, amended in 2003	1963 Decree Law No. 9 of 1963, amended in 1975
2002 Act No. 276 of 2002	1965 Decree No. 2/1965
2003 Act No. 2003-707	1997 Act CXL of 1997, amended in 2001
2004 National Heritage Code, Ordinance 2004-178 OBFR, February 24, 2004	2001 Act LXIV of 2001, amended in 2005
2005 Decree No. 835 of 2005	2001 Act No.80 of 2001
2007 Decree No. 612 of 2007	2001 Decree No. 17 of 2001
2007 Decree No. 487 of 2007	Ireland
Georgia	1930 National Monuments Act 1930 as amended to 2004
1995 Georgia Constitution	1968 Continental Shelf Act 1968
1997 Law on Cultural Heritage 1997, amended 2007	1992 Foreshore Act 1992
1999 Law on the Protection of Cultural Heritage 1999, as amended	1993 Merchant Shipping (Salvage and Wreck) Act 1993
1999 Law on Export and Import of Cultural Properties, last amended 2007	1994 EU Communities Return of Cultural Objects Regulations, amended 1998
Israel	1995 Heritage Act 1995
1956 Territorial Waters Law 1956, amended 1990	1997 National Cultural Institutions Act 1997, amended in 1999
1963 National Parks, National Reserves and National Sites Act, 5723-1963	1999 Architectural Heritage and Historic Monuments Act No. 19 of 1999
1965 Planning and Building Law, 1965	2000 Planning and Development Acts 2000
1978 Antiquities Law 5738 – 1978	2004 Dumping at Sea Act 2004
1989 Antiquities Authority Law 5749 – 1989	Italy
Latvia	1939 Law No. 1089 of 1 June 1939, as amended in 1998
1922 Constitution of the Republic of Latvia 1922, as amended to 2002	1947 Constitution 1947, amended 2001
1992 Regulations No. 509 of 1992	2004 Decree No. 22 of 2004, as amended to 2008
1992 Law on the Protection of Cultural Monuments 1992, amendment to 2009	2004 Code of the Cultural and Landscape Heritage 2004, amended to 2008
2007 Law on Environmental Impact Assessment 2001, amended 2007	2005 Law 109/2005
2007 Environmental Protection Law	2006 Law No. 77 of 20 February 2006
Macedonia (The former Yugoslav Republic of)	Lithuania
1987 Law of Yugoslavia on the Coastal Sea and the Continental Shelf 1987	1992 Constitution 1992
2004 Law on the Protection of Cultural Heritage, as amended in 2007	1992 Legislation on the Territorial Sea, 1992
2007 Law No. 07-4010/1 for Changes and Amendments to the Law on Protection of Cultural Heritage, 25 September 2007	1992 State Boundary 1992
Malta	1993 Law on Protected Areas 1993, amended 2001
1925 Antiquities (Protection) Act, No. XI of 1925, Cap 54 as amended in 1974, repealed by Cultural Heritage Act 2002 but Cap. 54, shall	1994 Law on the Protection of Immovable Cultural Heritage, 1994, as amended 2008

Malta continued	Lithuania continued
1975 Territorial Waters and Contiguous Zone (Amendment) Act 1975 No. XLVI of 1975, as amended in 2005	1996 Law on the Protection of Movable Cultural Property, 1996, amended 2010
2005 Cultural Heritage Act Chapter 445 of 2002 as amended in 2005	1996 Law on Protection of Movable Cultural Property No. I-1179 of 23 January 1996, as amended 2010
Montenegro	2001 Resolution No. 1186
1991 Law on Protection of Cultural Monuments, amended 2008	2004 Resolution No. 1424 of 2004
1996 Environment Law No. 12 of 1996	2004 Resolution 1107 of 2004
2008 Criminal Code, Official Gazette 40 of 2008	2010 Law on Environmental Protection 2010
2008 Law on Culture, No. 49/08 of 15 August 2008	The Netherlands
Norway	1956 Constitution 1956, as amended to 2002
1966 Customs Act No. 5 of 10 June 1966, as amended by Act No. 119 of 21 December 2007	1984 Cultural Heritage Preservation Act 1984, amended to 2002
1978 Cultural Heritage Act, No. 50 of 9 June 1978, amended 2008	1985 Territorial Sea (Demarcation) Act of 9 January 1985
1985 Planning and Building Act No. 77 of 14 June 1985, amended 2005	1988 Historic Buildings and Monuments Act 1988, as amended in 2006
1997 Regulations to Act relating to petroleum activities, 27 June 1997	1999 Exclusive Economic Zone (Establishment) Act 1999
2001 Royal Decree of 14 December 2001	2000 Exclusive Economic Zone of the Netherlands (Outer Limits) Decree of 13 March 2000
Romania	Portugal
1974 Law No. 63, 30 October 1974 (excerpts)	1977 Law No. 33/77 of 28 May 1977
1986 Decree No. 142 of 25 April 1986	1979 Ordinance No. 195/79 of 24 April 1979
1990 Act concerning the Legal Regime of the Internal Waters, the Territorial Sea and the Contiguous Zone of Romania, 7 August 1990	1985 Decree-Law No. 495/85 of 29 November 1985
1999 Order No. 2032 of July 1999	1997 Decree Law No. 164/97 of 1997
2000 Law No. 182 of 25 October 2000, as amended to 2004	1999 Decree Law No. 270/99 of 1999
2000 Ordinance No. 43/2000 of 30 January 2000, as amended to 2006	2001 Act No. 107/2001 of September 8, 2001
2001 Law No. 564 of 2001	2004 Constitution 2004
2001 Law No. 422 of July 2001, as amended to 2006	2006 Decree 19/2006 of 2006
2003 Decision No. 1546 of 18 December 2003	2009 Law No. 140 of 2009
2003 Decision No. 1420 of the 4th of December 2003	2009 Decree Law No. 309/2009 of October 23, 2009
2004 Decision No. 518 of 7 April 2004	2009 Decree Law No. 138/2009 of 15 June 2009

Romania continued	Slovakia
2005 Decision No. 78 of January 2005	1994 Constitution 1994
2006 Emergency Ordinance No. 118 of December 2006	1998 Act No. 115/1998 of 1 April 1998
2006 Law No. 258/2006	2001 Act 49 of 19 December 2001
2006 Law No. 259/2006	2001 Act 387 of September 4, 2001
2006 Law No. 120 of May 2006	2001 No. 91/2001, Part 39 of 20 March 2001
Spain	2002 Act 416/2002 Coll. 20
1977 Royal Decree 2510/1977 of 5 August 1977	2002 Act 395 of 17 May 2002
1978 Law 15/1978 of 20 February 1978	Slovenia
1978 Constitution 1987, as amended to 1992	1961 Cultural Heritage Protection Act of 1961, as amended to 2008
1985 Law No. 13/1985 of 25 June 1985 (excerpts)	1991 Constitution 1991, as amended 2003
1985 Law 16/1985 of 25 June 1985	1999 Cultural Heritage Protection Act, 1999, as amended to 2008
1986 Royal Decree No. 111-1986	1999 Nature Conservation Act, 1999
1991 Royal Decree No. 1680/1991	2001 Maritime Code 2001
1992 Law 27/1992 of 24 November 1992	2003 Law No. 612-04/03-7/1 of 2003
1994 Maritime Zones Act, No. 15 of 1994	2004 Environment Protection Act 2004
1994 Royal Decree No. 64/1994 of 21 January 1994	Sweden
1995 Criminal Code Administrative Law No. 10/1995 of 1995 (Excerpts)	1960 Law on Penalties for Smuggling No. 418 of 1960, as amended to 2000
1995 Law No. 16/1985 of 1985	1987 Planning and Building Act, 1987, as amended to 2003
Turkey	1988 Heritage Conservation Act No. 950 of 1988, as amended to 2002
1983 Cultural and Natural Objects (Conservation) Act 1983 amended to of 2009	1988 Heritage Conservation Ordinance No. 1188 of 1988, as amended to 2002
1987 Regulation for Determination and Registration of Cultural and Natural Properties No. 19660, amended in 1989	1991 Minerals Act No. 45 of 1991, as amended
United Kingdom	1992 Economic Zone Act of 3 December 1992
1939 Import, Export and Customs Powers (Defence) Act 1939, amended (excerpts)	1992 Ordinance on Sweden's Exclusive Economic Zone, 3 December 1992
1964 Continental Shelf Act, 1964, amended 1968	1998 Environmental Code No. 808, 1998
1973 UK Protection of Wrecks Act 1973	1998 Ordinance No. 896 of 1998
1979 Ancient Monuments and Archaeological Areas Act 1979	2002 Regulations of the National Heritage Board on Permits for the Export from Sweden of Certain Older Cultural Goods, 19 February 2002
1980 National Heritage Act 1980, amended to 2007	United States of America
1986 Protection of Military Remains Act 1986	1882 Ancient Monuments Act of 1882
1987 Protection of Military Remains Act 1986 (Guernsey) Order 1987	1906 Antiquities Act 1906

United Kingdom continued		United States of America continued	
1989	National Maritime Museum Act of 1989	1916	National Park Service Act of 1916
1989	Territorial Sea (Limits) Order 1989	1935	Historic Sites Act 1935, 16 U.S.C. s.461, as amended to 1982
1990	Planning (Listed buildings and Conservation Areas) Act 1990	1948	National Stolen Property Act, Sale or Possession of Stolen Property of 1948, as amended 1994
1995	Merchant Shipping Act 1995	1948	National Stolen Property Act, Transportation of Stolen Goods of 1948, as amended 1994
1995	Historic Monuments and Archaeological Objects (Northern Ireland) Order 1995	1960	Reservoir Salvage Act 1960 (aka Archaeology Recovery Act), amended 1982
1996	Treasure Act 1996, amended 2002 (does not extend to Scotland)	1966	National Historic Preservation Act 1966, as amended to 1982
2003	Export of Objects of Cultural Interest Order 2003	1969	National Environmental Policy Act 1969, amended to 1992
2003	Dealing in Cultural Objects (Offences) Act 2003 Explanatory Notes	1970	Submerged Lands Act 1970, as amended to 2002
2003	Dealing in Cultural Objects (Offences) Act 2003	1971	Executive Order No. 11593 of 1971
2007	Tribunals, Courts and Enforcement Act 2007	1972	Marine Protection, Research and Sanctuaries Act 1972, amended to 2000
2007	Tribunals, Courts and Enforcement Act 2007 Explanatory Notes	1976	Outer Continental Lands Shelf Act 1976
		1979	Archaeological Resources Protection Act 1979, as amended to 1994
		1983	Convention on Cultural Property Implementation Act of 1983
		1987	Abandoned Shipwreck Act 1987
		1988	President's Proclamation No. 5928 of 27 December 1988 on Territorial Sea
		1989	Abandoned Shipwreck Guidelines (54 FR 13642) of April 4, 1989
		2000	National Marine Sanctuaries Act, as amended
		2009	Omnibus Public Land Management Act of 2009, on Paleontological Resources Preservation
Latin America and the Caribbean			
Antigua and Barbuda		Argentina	
1981	Constitution Order 1981	1991	Law No. 23.986 of 14 August 1991
1982	Maritime Areas Act, 1982, amended in 1986	1994	National Constitution 1994
1984	National Parks Act, Cap. 290, of 1984	1996	Act No. 24633 of 1996
2003	Physical Planning Act, No. 6 of 2003	1997	Implementing Order 1321/97 of Act No. 24633 of 1996
2004	National Parks (Amendment) Act 2004	2003	Resolution 1123/2033 of 2003

Bahamas	Argentina continued
1965 Abandoned Wreck Act 1965, amended to 2001	2003 Law 25.743 of 2003
1993 Act No. 37 of 1993	2004 Implementing Order 1022.2004 of Act No. 25743 of 2003
1998 Antiquities, Monuments and Museum Act, 1998	2004 Resolution 2272/2004
2008 Archipelagic Waters and Maritime Jurisdiction, 2008	Barbados
2012 Antiquities, Monuments and Museum (Underwater Cultural Heritage) Regulations 2012	1976 Marine Areas (Preservation and Enhancement) Act, 1976
Belize	1977 Barbados Territorial Waters Act 1977, Cap. 386, as amended 1985
1986 Archaeological Reserves (Admissions) Order No. 113 of 1986	1978 Marine Boundaries and Jurisdiction Act 1978, Cap. 387, amended to 1995
1990 Abandoned Wreck Act, Chapter 235, 1990, revised 2000	1981 Miscellaneous Controls (Export Restriction) (Amendment) Regulations, 1981
1992 Maritime Areas Act of 24 January 1992, amended 2000	1985 Town and Country Planning, Cap. 240 of 1985
2000 National Institute of Culture and History Act 2000 as amended to 2003	1985 Miscellaneous Controls Act Cap. 329 of 1985
2000 Belize Constitution Act, Chap. 4, as amended to 2000	1998 Coastal Zone Management Act, 1998, Cap. 394
2000 Chapter 331 of 2000	2011 Preservation of Antiquities and Relics Act, 2011
2000 Wrecks and Salvage Act 2000, Cap 237	Brazil
Bolivia	1988 Constitution of 1988, as amended to 2008
1927 Law of 1927, Law on National Monuments	1937 Law No. 25 of 30 November 1937
1961 Supreme Decree No. 05918 of 6 November 1961	1941 Decree-Law No. 6.734 of 21 January 1941
1961 Ministerial Resolution No. 1642 of 1961	1961 Law No. 3924 of 26 July 1961
1976 Resolution No. 699 of 1976	1965 Law No. 4845 of 19 November 1965
1978 Executive Order No. 15900 of 19 October 1978	1986 Law No. 7542 of 1986
1997 Law No. 1768 of 1997, Criminal Code (excerpts)	1993 Act No. 8.617 of 4 January 1993
2009 Constitution of 2009	1999 Decree Law No. 3166 of 1999
Chile	2000 Decree Law No. 3551 of 2000
1969 Law No. 17.236 of 1969, as amended to 1980	Colombia
1970 Law No. 17.288 of 1970, as amended to 2005	1952 Decree No. 3183 of 10 December 1952
1975 Supreme Decree No. 711 of 22 August 1975	1991 Constitution of 1991
1976 Decree No. 863 of 1976	1997 Law No. 397 of 1997
1980 Constitution, as of 1980	2002 Decree 833 of 2002
1986 Law No. 18.565 of 1986	2004 Decree No. 352 of 2004, as amended in 2008
1990 Supreme Decree No. 484 of 1990 (excerpts)	2005 Decree 2406 of 2005
1993 Law No. 19.253 of 1993	2006 Resolution 395 of 2006

Chile continued	Colombia continued
1997 Decree No. 329 of 1997	2008 Regulations regarding cultural heritage protection in Colombia, 2008
1999 Decree No. 311 of 1999	2008 Decree 1313 of 2008
2005 Supreme Decree No. 100 of 2005 (excerpts)	2008 Law 1185 of 2008 (excerpts)
2009 Exempt Resolution No. 8545 as amended in 2010	2009 Decree 763 of 2009
Costa Rica	2009 Decree 02941 of 2009
1923 Law No. 14 of 1923	Cuba
1938 Law No. 7 of 1938	1976 Constitution of 1976 (excerpts)
1949 Constitution, as amended	1977 Decree-Law No. 1 of 24 February 1977
1981 Law No. 6703 of 1981	1977 Act No. 1, 4 August 1977
1989 Decree No. 19016-C of 1989	1977 Act No. 2, 4 August 1977
1995 Law No. 7555 of 1995	1979 Decree No. 55 of 1979
1999 Decree No. 28174 of 1999	1979 Law on Municipal Museums No. 23 of 1979
Dominican Republic	1983 Decree No. 118 of 1983
1903 Decree No. 4347 of 15 December 1903	1987 Criminal Code Law No. 62 of 1987, as amended in 1999 (excerpts)
1913 Law No. 5207 of 1913	1989 Resolution No. 3/89 of 1989
1946 Decree No. 3511 of 1946	1989 Resolution No. 4/89 of 1989
1964 Law No. 473 of 1964	1994 Resolution No. 57/94 of 1994
1967 Act No. 186 of 1967, as amended to 1977	1996 Resolution No. 5/96 of 1996
1968 Act 318 of 14 June 1968	1997 Resolution No. 11/97 of 1997
1969 Regulation No. 4195 of 1969	2009 Decree-Law No. 266 of 2009
1972 Resolution No. 416 of 1972	Ecuador
1973 Act 564 of 27 September 1973	1979 Law No. 3501 of 1979, as amended to 2004
1976 Decree No. 2310 of 1976	1984 Law on Culture of 8 August 1984
2004 Decree No. 558-04 of 2004	1984 Decree No. 2733 of 1984
2007 Act 66-07 of 22 May 2007	1985 Proclamation of 19 September 1985
El Salvador	1986 Decree No. 1887 of 1986
1983 Constitution of 1983, as amended 2003	2000 Criminal Code, as amended by Law No. 49 of 2000 (excerpts)
1993 Decree No. 513 of 1993	2004 Law of Cultural Patrimony Codification No. 27, Supplement 465 of 19 November 2004
Grenada	2008 Constitution of 2008
1967 Ordinance No. 20 of 1967	

Grenada continued	Guatemala
1973 Grenada Constitution Order No. 2155 of 1973	1947 Decree 425 of 19 September 1947, amended in 1966
1978 Marine Boundaries Act, No. 20 of 1978	1985 Constitution of Guatemala, 1985, amended 1993 (excerpts)
1990 National Parks and Protected Areas Act No. 42 of 1990	1997 Decree No. 26-97 of 1997, as amended to 1998
1990 National Heritage Protection Act No. 18 of 1990	1998 Agreement No. 15-98 of 1998
2002 Physical Planning and Development Control Act of 2002	1999 Ministerial No. 188-99 of 1999
Guyana	2003 Ministerial Agreement No. 721 of 2003
1972 National Trust Act [Chapter 20:03 of 1972]	Haiti
1977 Maritime Boundaries Act, No. 10 of 1977	1940 Law of 23 April 1940
1980 Constitution of 1980	1941 Decree of 31 October 1941
Honduras	Jamaica
1977 Decree No. 582 of 1977	1990 Jamaica National Heritage Trust Act Regulations, 1990
1997 Decree No. 220-97 of 1997	1991 Act 33 of 1991 on the Exclusive Economic Zone Act 1991
1999 Decree 172-99	1992 The Exclusive Economic Zone Act (Baselines) Regulations 1992
2000 Executive Decree No. PCM-007-2000 of 21 March 2000	1996 Maritime Areas Act of 1996, 3 July 1996
2000 Executive Decree No. PCM-017-2000, 28 August 2000	Mexico
2009 Constitution	1917 Constitution, as amended
Nicaragua	1928 Civil Code of 1928 (excerpts)
1980 Decree No. 1142 of 1980, amended 1982	1939 Law of 3 February 1939, as amended to 2002
1983 Decree No. 1237 of 1983	1972 Federal Law on Archaeological, Artistic and Historic Monuments and Zones, as amended in 1986
2009 Law No. 690 of 2009	1975 Decree of 1975, as amended in 1993 (excerpts)
Panama	1986 Federal Act Relating to the Sea 1986
1982 Law No. 14 of 1982	1988 General Law of Ecological Balance and Environmental Protection, 1988
2003 Law No. 58 of 7 August 2003	2004 General Law on National Assets of 2004
2004 Constitution (excerpts)	2006 Law of Maritime Navigation and Commerce, 2006
Paraguay	Peru
1943 Decree-Law No. 18.904 of 15 July 1943 (excerpts)	1929 Law No. 6634 of 1929
1950 Decree-Law No. 10.756 of 28 March 1950 (excerpts)	1947 Decree No. 781 of 1947
1982 Law No. 946 /82 of 22 October 1982	1952 Law No. 11780 of 1952 (excerpts)
Saint Lucia	1971 Decree No. 18880 of 1971
1975 National Trust Act No. 16 of 1975	1979 Constitution of the Republic of Peru of 1979, as amended (Art. 21)

Saint Lucia continued	Peru continued
1978 Constitution Order 1978	1984 Civil Code No. 295-1984 of 1984 (excerpts)
1984 National Trust Rules – Statutory Instruments No. 27 of 1984	1993 Political Constitution of Peru 1993 (excerpts)
1984 Maritime Areas Act 1984	2000 Executive Order No. 004 – 2000 of 2000
2000 Cultural Development Foundation Act No. 26 of 2000	2004 Law No. 28296 of 2004
Saint Vincent and Grenadines	2005 Maritime Dominion Baselines Law, No. 28621, 3 November 2005
1969 National Trust Act of 1969	2006 Executive Order No. 011 – 2006-ED
1976 Town and Country Planning Act, 1976, as amended	Uruguay
1976 Preservation of Historical Buildings and Antiquities Act 1976, amended 1979	1971 Act No. 14.040, 20 October 1971
1979 Constitution Order 1979 (excerpts)	1972 Decree 536/972, 1 August 1972
1983 Maritime Areas Act, No. 15 of 1983	1983 Decree No. 372/983 of 1983
Venezuela	1986 Executive Decree No. 692/986 of 1986
1956 Territorial Sea Law 1956 (excerpts)	1994 Export of Characterized Architectural Elements, Resolution of 23 November 1994
1992 Law 4.358 Environmental Penal Act 1992 (excerpts)	2002 Law No. 17.473 of 2002
1993 Law No. 4.623 of 1993	
1994 Decree No. 384 of 1994 (excerpts)	
1994 Partial Regulation No. 1 of 1994	
1999 Constitution, as amended	
2005 Administrative Decision No. 012/05 of 2005	
2009 Law No. 39.115 of 2009 (excerpts)	

Appendix 3: defined cultural-identifying lexicon

State Parties	Antiquities	Cultural Heritage	Cultural Patrimony	Cultural Property	Monuments	Objects	Relic
Afghanistan		x		x			
Albania		x			x	x	
Algeria			x		x		
Angola		x			x		
Antigua and Barbuda							
Argentina							
Armenia		x		x			
Australia		x		x		x	x
Austria					x	x	
Azerbaijan		x					
Bahamas	x				x	x	
Bahrain					x		
Bangladesh	x						
Barbados							
Belarus		x					
Belize	x				x		
Bolivia					x	x	
Bosnia and Herzegovina				x	x		
Botswana					x	x	x
Brazil		x			x		
Brunei Darussalam	x				x		
Bulgaria		x					
Burkina Faso			x		x		
Cambodia		x		x			
Cameroon							
Canada				x		x	
Chile					x		
China							x
Colombia		x		x			
Cook Islands							
Costa Rica				x	x	x	
Cote d'Ivoire			x				
Croatia						x	
Cuba				x	x	x	
Cyprus	x				x	x	
Denmark		x			x		
Dominican Republic		x		x			
Ecuador		x	x				
Egypt	x						
El Salvador		x		x			
Estonia					x	x	
Ethiopia		x					
Fiji					x	x	
Finland					x	x	
France			x	x	x	x	
Gambia					x		x
Georgia		x		x		x	

State Parties	Antiquities	Cultural Heritage	Cultural Patrimony	Cultural Property	Monuments	Objects	Relic
Ghana	x					x	
Grenada							
Guatemala		x		x	x	x	
Guyana					x	x	
Haiti							
Honduras		x		x	x		
Hungary		x			x	x	
India	x				x		
Indonesia		x				x	
Iran, Islamic Republic of	x	x		x	x		
Iraq	x						
Ireland					x	x	
Israel	x						
Italy		x		x			
Jamaica					x		
Japan				x	x		
Jordan	x						
Kenya	x	x			x	x	
Korea, Republic of		x			x		
Kuwait	x						
Lao, People's Democratic Republic of		x			x	x	
Latvia					x		
Lebanon	x			x	x	x	
Lesotho	x				x		x
Lithuania	x	x		x	x	x	
Macedonia, Former Yugoslav Republic of	x	x			x		
Malawi					x		x
Malaysia	x	x			x	x	x
Maldives						x	
Mali		x	x				
Malta		x		x		x	
Marshall Islands		x		x			
Mauritius					x		
Mexico					x		
Micronesia, Federal States of				x			
Mongolia					x	x	
Montenegro					x	x	
Morocco					x		
Myanmar	x	x			x		
Namibia						x	
Nepal					x	x	
Netherlands, The					x	x	
New Zealand						x	
Nicaragua		x					
Nigeria	x				x	x	
Norway					x	x	
Pakistan	x				x		
Palau				x	x		
Panama					x		

State Parties	Antiquities	Cultural Heritage	Cultural Patrimony	Cultural Property	Monuments	Objects	Relic
Papua New Guinea				x			
Paraguay							
Peru		x	x	x	x		
Philippines	x	x		x	x	x	
Portugal		x		x			
Romania		x			x	x	
Saint Lucia						x	
Saint Vincent and The Grenadines	x						
Saudi Arabia	x						
Senegal					x	x	
Seychelles					x		x
Sierra Leone					x		x
Singapore					x	x	
Slovakia		x			x		
Slovenia		x			x		
South Africa						x	
Spain		x			x		
Sri Lanka							
Sudan	x				x		
Swaziland	x				x		x
Sweden					x		
Syrian Arab Republic	x						
Tanzania	x				x	x	x
Thailand	x				x		
Tonga						x	
Turkey				x		x	
Uganda					x	x	
Uruguay					x	x	
United Arab Emirates	x						
United Kingdom					x	x	
United States of America				x		x	
Uzbekistan					x	x	
Vanuatu						x	
Venezuela, Bolivarian Republic of		x				x	
Vietnam	x	x		x			x
Zambia		x			x		x
Zimbabwe					x		x

Appendix 4: defined managerial lexicon

State Parties	Conservation	Preservation	Protection	<i>In situ</i> preservation, conservation (employed - not defined)
Afghanistan				
Albania			x	
Algeria				x
Angola				
Antigua and Barbuda				
Argentina				
Armenia				
Australia	x			
Austria				
Azerbaijan	x			
Bahamas				
Bahrain				
Bangladesh				
Barbados				
Belarus	x			
Belize				
Bolivia				x
Bosnia and Herzegovina				
Botswana				
Brazil				
Brunei Darussalam				
Bulgaria		x	x	
Burkina Faso				
Cambodia				
Cameroon				
Canada				
Chile				
China				
Colombia		x		x
Cook Islands				
Costa Rica				
Cote d'Ivoire				
Croatia		x	x	
Cuba			x	
Cyprus				
Denmark		x		
Dominican Republic				x
Ecuador				
Egypt				
El Salvador				
Estonia	x			
Ethiopia	x			
Fiji				
Finland				
France				
Gambia				

State Parties	Conservation	Preservation	Protection	<i>In situ</i> preservation, conservation (employed - not defined)
Gambia				
Georgia	x		x	x
Ghana				
Grenada				
Guatemala	x		x	
Guyana				
Haiti				
Honduras				
Hungary			x	x
India				
Indonesia		x	x	
Iran, Islamic Republic of				
Iraq				
Ireland				x
Israel				
Italy	x		x	
Jamaica				
Japan				
Jordan				
Kenya				
Korea, Republic of				
Kuwait				
Lao, People's Democratic Republic of	x		x	
Latvia				
Lebanon				
Lesotho				
Lithuania	x		x	
Macedonia, Former Yugoslav Republic of	x	x	x	x
Malawi	x	x		x
Malaysia	x	x		
Maldives				
Mali				
Malta	x			x
Marshall Islands		x		
Mauritius				
Mexico				
Micronesia, Federal States of				
Mongolia				
Montenegro				
Morocco				
Myanmar				
Namibia	x			
Nepal		x		
Netherlands, The				
New Zealand	x			x
Nicaragua				
Nigeria				
Norway				
Pakistan				x
Palau				
Panama				
Papua New Guinea				
Paraguay				

State Parties	Conservation	Preservation	Protection	<i>In situ</i> preservation, conservation (employed - not defined)
Pakistan				
Peru				
Philippines	x			
Portugal				
Romania			x	x
Saint Lucia				
Saint Vincent and The Grenadines				
Saudi Arabia				
Senegal				
Seychelles				
Sierra Leone				
Singapore				
Slovakia			x	
Slovenia	x	x	x	
South Africa	x			
Spain				
Sri Lanka				
Sudan				
Swaziland				
Sweden				
Syrian Arab Republic				
Tanzania				
Thailand				
Tonga				
Turkey	x			x
Uganda				
United Arab Emirates				
United Kingdom				
United States of America				
Uruguay				
Uzbekistan	x			
Vanuatu				
Venezuela, Bolivarian Republic of				
Vietnam				
Zambia	x			
Zimbabwe				

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