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Preserving a layered history of the Western Wadden Sea : managing an underwater cultural heritage resource

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4.

Why preserve underwater heritage in situ?

Fig. 4.1 Monument label on the BZN 3 site.

4. Why preserve underwater heritage in situ?

4.1 Introduction

As described above, the underwater cultural heritage is constantly under threat. Some areas with strong currents and tidal movements, for example, may be more hostile to underwater cultural heritage than others. As we have seen in the previous chapters, the Wadden Sea is a hostile area. Seabed erosion, abrasion, biological attack by shipworm, fungi and bacteria, and on top of all this, the multiple threats caused by humans, all occur in this area. However, it is possible to take action to mitigate these threats, as part of a responsible management strategy. In recent years, it has become increasingly common practice to manage the underwater cultural resource in a more holistic manner; for example, to treat the resource as a whole, with a view to the future, and in a proactive way, keeping in mind the different values that a site may have to various actors.

Excavations are carried out according to both national and international standards in many countries in the world,¹ with the intention to not spoil this finite resource or allow it to disappear without proper data collection. Archaeological excavation is a method of ex-situ preservation of data. The knowledge about wrecks in the Wadden Sea and in the context of the Wadden Sea – considered as both an important natural environment and cultural context – has increased considerably due to research ranging from sampling to full-scale excavation, and even integral landscape approaches dealing with multiple sites at the same time. In addition, sites that have not been excavated are protected and managed in situ.² The basic reason for this is often universal and applicable to terrestrial as well as underwater sites. The desire to protect underwater heritage exists: sites are preserved in often extremely good conditions, but are still under threat (Chapter 1, 2 and 3). Some sites are representative of specific elements of Dutch history, and although perhaps not directly visible to the community at large, are highly visible to specific stakeholder groups, such as the sports divers that do dive the Wadden Sea (and are often strong voiced), to be enjoyed as recreational objects (see Chapter 7).

Current international standards state that in-situ preservation is the first option to be considered when managing a site.³

However, what is the reason for this? Why not consider excavation first and foremost?

Before we attempt to answer this question from a cultural heritage management perspective, we must ask ourselves what 'in-situ preservation' of underwater heritage sites means. Is it – as is often said – 'brushing sites under the carpet (of sand)'? Or does it serve a higher goal? And also: Can we really physically protect underwater sites from identified threats?

This chapter starts by outlining a general idea of what in-situ preservation and protection mean. This will be followed by an answer to the question of why we should undertake the in-situ preservation of our underwater cultural heritage sites, while also considering the reasons why this might not be preferable.

4.2 What is an in-situ site and what is part of it?

In archaeology, 'in situ' means 'the original place of deposition'.⁴ However, there are no defined rules about how 'original' this deposition should be. Is it the first deposition, or a deposition (with subsequent related processes) of a later date? As Schiffer (1985) asked: Is it a primary, secondary or de facto refuse?⁵ A 'primary refuse' may, for example, have led to reuse or redeposition. After deposition, post-depositional processes (de facto refuse) alter the place and the objects in it. It is extremely rare to find an archaeological site which a community suddenly ceased to inhabit⁶ at one point in time, and impossible to find one that has not been altered through post-depositional processes.⁷ This is no different for underwater sites, as we have seen in previous chapters. While following the definition of 'in situ' as the 'original place of deposition' may give us some headaches in determining whether originality is primary, secondary or de facto, in this thesis, 'in situ' will simply be defined as the place where we discover the cultural material in or on the seabed.

Another issue concerns what 'belongs' to the site and what we want to preserve or restore. Are we selectively attempting to preserve the original status of sites at the time of deposition (which is basically impossible)? Or are we attempting to preserve the current situation, including the post-depositional processes,

¹ In the Netherlands, archaeological research must be executed according to the Dutch Quality Standards for Archaeology (KNA, Kwaliteits Norm Archeologie: Willems & Brandt 2004). International reference to the Annex of the UNESCO Convention on the Protection of Underwater Cultural Heritage (Paris, 2001). The Annex is a 'Code of Good Practice'.

² While doing research for this thesis, I noticed that the archaeological dictionaries *Archeologische termen en technieken*, Champion et al. 1981 and the MacMillan *Dictionary of Archaeology*, Whitehouse 1983, do not even mention the concept and definition of in-situ preservation.

³ The ICOMOS Charter on the Protection and Management of Underwater Cultural Heritage (Sofia, 1996). Convention on the Protection of the Underwater Cultural Heritage (Paris, 2001); European Convention on the Protection of the Archaeological

Heritage (Valletta, 1992).

⁴ See, for example: <http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/protection/in-situ-protection/> (accessed 2-7-2015)

⁵ Schiffer 1985, Binford 1981, 203.

⁶ Binford 1981, 196.

⁷ These post-depositional processes may be very strong or very weak, but a site and the material of which it consists will, for example, always be subject to degradation processes. As Binford puts it: 'The archaeological record is the disorganized arrangement of matter regularly generated after the point of time' ... 'The archaeological record is ravaged by time and needs to be treated as such rather than as a preserved past', Binford 1981, 196.

hence the 'full' story of the site? This decision may remain part of the process of assessment by an expert (expert judgement) as there is no straightforward answer. Changes have occurred and 'gaps' concerning what has happened in the past also appear. The above issues, which have become known in the archaeological literature as the 'Pompeii premise' debate, have been extensively discussed by two archaeologists in particular – Michael Schiffer and Lewis Binford.

The Pompeii premise debate reflects on the way archaeologists formerly treated their finds as if they were moments frozen in time, similar to the ancient city of Pompeii, which in 79 AD was covered with hot volcanic ash leaving the site 'frozen' in an instant. The premise has two basic assumptions: first, that items found by archaeologists have been placed there by the last historical actor of the living system under study, and second, that these items mirror the activities that took place in the area in which they are now found.

We must keep in mind that the discussion of the Pompeii premise was provoked by the archaeological analyses of terrestrial and continuous habitation sites and was not systematically related to shipwrecks located under water. Binford stated that the 'Pompeii premise is important only if one adopts a strict inductive approach to the archaeological record, expecting to uncover archaeological facts with self-evident meaning for the past'⁸ and 'Pompeii is only ideal for one interested in events, specific behaviours and event-centred "history"'.⁹ This is, however, largely what research on individual shipwrecks quite often concerns. Shipwrecks, and their 'primary refuse', are matters of a specific event (the sinking of the ship as a singular event), considered to be due to specific behaviour (erroneous

navigation or a battle at sea) and are thus seen as part of an event-centred history. Of course, we can think of many exceptions; a ship or shipwreck may have been reused, for example, as a ship barrier and been subject to post-depositional processes. Nevertheless, at first sight, Pompeii-like sites may appear more often under water than on land.¹⁰

However, Binford is also right in stating that we 'must understand the archaeological record in the state in which it is available to us'¹¹ and that '[t]he challenge is how to use the "distorted" stuff',¹² because – although shipwrecks often represent the materialization of a 'unique event' – processes of deposition always change the original situation. The ability to reconstruct the past depends on how we interpret what has remained through time, distorted by all sorts of human and natural processes known as 'N-Transforms' (natural transformations) and 'C-Transforms' (cultural transformations), as defined by Schiffer.¹³

When we look once more at the influential definitions of 'archaeology', they all entail reference to an effort to reconstruct past life and behaviour through material relics or resources.¹⁴ Essential to this is a thorough understanding of post-depositional processes that have occurred on a site, as they are also part of the site's history and may be caused by natural processes or human activity.¹⁵ A concern for the effects of natural or human-induced changes to and interventions in the landscape on individual sites is reflected in the current change of perceptions in underwater archaeology, which does not focus on singular sites, but on archaeological landscapes and their development and value through time.¹⁶ A landscape approach, however, entails the issue of where a site begins and ends and thus also whether it is acceptable to preserve sites completely or only partly. How often

⁸ Binford 1981, 198.

⁹ Binford 1981, 205.

¹⁰ See also the examples in Chapter 1.

¹¹ Binford 1981, 205.

¹² Binford 1981, 205.

¹³ Schiffer 1973, 25–29.

¹⁴ See Chapter 2.

¹⁵ Binford (1981) and Schiffer (1985) both talk about cultural formation processes (C-transforms) and non-cultural formation processes (N-transforms). A wreckage may cause sedimentation or erosion in new places, which may have led to different use of the environment in the past, such as the opening of new waterways, dredging for a new harbour or reclaiming land. Also, the salvage history of a shipwreck may be an important part of the site's history. See, for example, the salvage history of the *Lutine* (1799), lying between Vlieland and Terschelling in the Netherlands, Strick 1986, Huiskes & De Weerd (eds) 1999 and Hendriksma 2013.

¹⁶ There are many examples of combined strategies to investigate archaeological sites in the wider context of cultural landscapes that demonstrate their added value. Natural and cultural developments, as well as intangible issues such as ideology and geopolitical strategies, have an influence on land or seascapes of war and can be much better researched in a wider context rather than being addressed site by site

(see, for example: laarse-rob-van-der--carr-gilly---landscapes-of-war-trauma-and-occupation-painful-heritage-and-memory.pdf (accessed 20-6-2014)). A specific example is Scapa Flow on the Orkney Islands. This natural anchor site had been recommended as a Royal Naval Anchorage in the early nineteenth century. On the outbreak of the First World War, it became the home for the Grand Fleet and coastal defence batteries were built, as well as other defences at the entrance to prevent enemy ships or submarines entering the waters of Scapa Flow. As part of the Armistice agreement, Germany had to surrender most of its fleet. However, the 74 ships interned at Scapa Flow in November 1918 were scuttled by their captains on 21 June 1919. Of the 52 ships that went down, 7 remain. In the Second World War, the Home Fleet of the British Navy returned to Scapa Flow, but due to poor defences the HMS *Royal Oak* was sunk by the German U-47 on 14 October 1939. This triggered the strengthening of defences on land, as well as in the water with the Churchill Barriers. Anti-aircraft guns were installed on shore as well as on the ships that protected the anchorage from air attack, making it safer. Some of the war's major naval actions commenced from Scapa Flow, and the area is now a significant maritime cultural landscape with sites on land as well as under water. Although the individual sites date back to the two world wars, they can be interlinked with each other through the history of the place. The sites are material witnesses of ideological and geopolitical strategies and activities. See also: <http://www.scapafloowrecks.com/> (accessed 20-6-2014).

is a wreck site considered to consist of only the visual structural elements of the former ship and not the surrounding seabed, even when cultural materials are scattered around, or when the former ship appears to be part of a barrier or related to the historic filling of an area?¹⁷ Here we encounter a complex issue. Ultimately, worldwide, large areas and whole regions are linked by ships, sea routes and maritime cultural landscapes.¹⁸ The boundaries, therefore, must and will be determined by many factors, such as geological elements, and historical and administrative boundaries and the questions raised in research.¹⁹

Questions such as 'What should be preserved and protected and what not?' and 'What is worth preserving?' are difficult to answer from more encompassing geographical and temporal perspectives. 'Are we focusing on the well-preserved heritage of a specific period or are we interested in the long sequence of use, with its subsequent changes and landscape transformations – a layered heritage?' This question arises, for example, when we think of protecting the Burgzand area as a whole. Is it because of its significance as a roadstead in general; that is, of understanding a past cultural system? Or perhaps we are only concerned about the Dutch Golden Age? Or are we interested in the area as a whole and over the long term, with its uses by communities from prehistory to modern times? In other words, what belongs to the narratives we want to investigate and/or keep and what not?

These questions form the basis of significance assessments, which determine selection and deselection. Such assessments should be an important tool in overall heritage management, for which many government institutes are responsible.²⁰ Although selections happen (for example to become a national monument), in practice not many underwater sites have been explicitly deselected. Primarily, this is because few underwater sites have undergone the extensive research required for such an archaeological significance assessment. Implicitly, sites are often not further investigated by the cultural heritage officers responsible due to the expected low archaeological value. Thus, there might be a lot to gain by making these implicit choices more explicit. The practice of deselecting is thus more common in terrestrial archaeology,²¹ and means that no further protection or action is

undertaken by the authorities. However, this may offer opportunities for others to become involved in archaeological research on site. What these others (other than archaeologists and cultural heritage managers) would like to do with a site depends on the value they attach to the site or the area.²²

What archaeologists, cultural heritage managers or other stakeholders involved would like to investigate, preserve or use in another way, ultimately depends on which value prevails for the specific stakeholder group.²³ It is not a given, but determined by those who wish to 'use' it. This also implies that one site may have various values, promoted by different stakeholders.

4.3 Different views on in-situ preservation

Between different stakeholders, and certainly also among cultural heritage managers and archaeologists, the terms 'in-situ protection', 'preservation' and 'conservation' have been – and are – often used in an interchangeable but narrow way. It is not always easy to understand the difference (See also Chapter 1.7.2). The reason for the initial widespread acceptance of the Valletta Treaty in Europe by archaeologists and politicians may lie in the fact that for many stakeholders the words may have been the same, but the meaning they gave them and intentions they had may have been different. When in-situ preservation – as well as protection and conservation – is interpreted as 'brushing sites under the carpet' and 'out of sight is out of mind', or more diplomatically, 'leaving sites where they are' without any further action, it becomes clear that this may be considered the 'cheaper' option, and of interest to those who are liable to pay.

Conversely, associating in-situ preservation with responsible management, less destruction of the resources than before, and more job opportunities financed outside the public system, this seems not only to be the more responsible form of management and a more sustainable use of resources, but also to offer more security for jobs into the future. For academic archaeologists, however, in-situ management may seem like the shutting down of opportunities to learn about the past by undertaking intrusive research on site.

¹⁷ One example is the ship barrier in Greiffswald (Belasus 2009, 93–98).

¹⁸ We can look far beyond administrative borders and see the world being connected. Ships were the essential connectors in the grain trade from Western Europe and the Baltic, connecting countries such as the Netherlands, Denmark and Poland directly. A larger network of European trade, expanding this – for the Netherlands, 'mother trade' – further with the 'doorgaende vaart' to France, Portugal and the Mediterranean.

¹⁹ From a Dutch perspective, we can also think of research topics such as the Atlantic world and the Dutch [http://www.culturalheritageconnections.org/wiki/The_Atlantic_World_and_the_Dutch_1500-2000_\(AWAD\)](http://www.culturalheritageconnections.org/wiki/The_Atlantic_World_and_the_Dutch_1500-2000_(AWAD)) (accessed 20-6-2014). However, another, much older, and good example is the world heritage site 'Prehistoric Pile

dwellings around the Alps: <http://whc.unesco.org/en/list/1363> (accessed 20-6-2014). Connecting those sites, geographically very distant, requires new approaches, using multidisciplinary in research, as well as in visualization.

²⁰ In the Netherlands, it is not only the Ministry of Education, Culture and Science (OCW) that is involved in the management of the underwater cultural heritage. For example, the Ministries of Infrastructure and Environment (I&M), Economic Affairs (EZ) and Defence (Defensie) are also involved.

²¹ See, for example, <http://archeologieinnederland.nl/vrijwilligers-de-archeologie> (accessed 16-1-2016).

²² See also Chapter 7.

²³ For more about values, see Chapter 2.

The various interpretations have led to a misunderstanding between important stakeholders, who actually need to cooperate in order to make the widespread policy of in-situ management a success. Today, more than twenty five years after the signing of the treaty and a decade after its implementation in the Dutch Heritage Act, for many of the stakeholder groups – from academic archaeologists to developers and even the general public – the policy of in-situ preservation still often has a negative connotation. Much of this negativism may be addressed by clarifying the different points of view and incentives people have, but also by ensuring everybody speaks the same language, using the same definitions when talking about preservation, conservation and protection, and also, for example, issues such as site stabilization.

An important starting point for all stakeholders involved is the question: Why do we want to preserve sites in situ? While answered from a cultural heritage management perspective below, the answer to this question may be – as indicated above – very different depending on the stakeholder. However, in addressing this question I hope to reach the core of the reason for being involved, as well as the basis of possible conflicts. The choice of in-situ preservation may be based on different cultural heritage values, which include scientific values, but also aesthetic values, enjoyment or commemoration. At the same time, the economic dimension – i.e. economic development through planned construction in, or use of, the area and the possible profits for heritage management – should not be overlooked. There is a need to strike a balance between these values. The Quality Standards for Dutch Archaeology (KNA) includes a checklist that aims to obtain a balanced assessment of the 'archaeological value, quality and aesthetic value (whether it is visible and worth seeing)'. Nevertheless, the person using the checklist makes a difference; usually this is an archaeologist, which means there is a natural bias towards science.

Whether to preserve in situ or not is a management decision based on the balancing of different values regarded as important by the stakeholders involved.²⁴ It should be based on a site – and preferably also area – significance assessment, which determines the different values of the site and preferably also the landscape in which the site is situated. However, as indicated above, values are subjective. Therefore, it is important to consider who is determining this value and who has the right to do so. We also have to keep in mind that the level on which one operates may make a difference to how sites are assessed. For example, a site which is not rated of high cultural heritage value at a national level may be so at the regional level and vice versa.

In-situ protection should also be based on the assessment of

threats and should consist of mitigation against these threats. It is important, in doing so, to take note of the perspectives of the different stakeholders regarding the physical protection of an archaeological site.²⁵ Differences may arise in relation to how long in-situ protection should be applied. Should it be long term or short term, for example? For some stakeholders, in-situ preservation and protection may even be synonymous with not having to deal physically with these sites at all; or, stated more positively, entailing considerably lower costs than opting for excavation. To paraphrase Willems (2012), the in-situ dogma is led by bureaucratization and commercialization. Money, time and responsibility seem to be the driving factors.

Since the signing of the Valletta Treaty, many countries in Europe have been frenetically holding to in-situ policy. In addition, due to the drafting of the UNESCO Convention for the Protection of the Underwater Cultural Heritage (Paris, 2001), and its signing and ratification by many countries, this policy has been given a firm basis in the management of archaeological – including underwater – heritage. It has gone so far that the doctrine of 'in situ is the first option to consider' has, for many, become 'the preferred option'. However, there is a massive difference between these two phrases. While the latter fits perfectly in the minds of those for whom in-situ preservation has become a goal in itself, how can we say that in situ is the preferred option in any general sense, without considering the individual situation of each site? Should such assessment not be part of the mitigation process or prior to that? Considering in-situ preservation (and active in-situ protection) to be *the first option* is thus different from it being *the preferred option*. This is the starting point from which we should all at least begin, and after thoughtful consideration and for the right reasons, we might depart in various directions.

Policies may not always be formulated or supported for obvious reasons. In-situ protection may well be regarded as the cheap option. In addition to the question of whether this is true, we are also risking forgetting why we choose preservation. It is not our sole aim to protect cultural-historical sites simply because we do not have the money (or do not want to spend the money) to investigate them. We also want to learn from the past, and on the basis of our curiosity, preserve for later generations what we have learned. Ultimately, archaeologists want to learn from the past and pass this knowledge on to society, so others may also understand their past, present and future. Curiosity is thus an important asset to have for an archaeologist. However, it will not be satisfied by in-situ preservation or in-situ conservation of sites alone. Intrusive research may be necessary for this. Those seeking enjoyment – the incentive for sports diving communities – may profit from in-situ policy and management as well. However, this will depend on the way we protect sites and present

²⁴ Usually, even broader than a solely archaeological management or cultural heritage management decision.

²⁵ For the physical protection methods, see Chapter 5.

them in situ. Therefore, although this stakeholder group might in the first instance be reluctant to support in-situ preservation and protection, it may easily become the biggest supporter depending on the way it is executed.

Another issue for divers generally is that diving is still a relatively exclusive activity and access to wrecks is therefore also exclusive. Taking objects from this environment reduces this exclusive access enormously, and also deprives the site of its exciting and mysterious environment, which adds to the enjoyment. Only when salvage is combined with archaeological research and post-archaeological processing will the benefits of excavation become clear. This takes time, and while it may enhance the enjoyment factor for larger groups of museum visitors, who will be able to see the physical remnants of the past, it will not enhance the experience of those who want to visit the sites under water.

4.4 Defining common-sense arguments for in-situ preservation

The reasons for preservation depend on the value we attach to the sites as a society, with different perspectives of different stakeholder groups and even individuals. However, from a purely archaeological and cultural point of view, there are many well-founded reasons for wanting to preserve shipwrecks in situ.

First and foremost, for archaeologists, the intrinsic value of a particular site should primarily determine the response to the question of why it should be protected and not another. The archaeological value of an individual site is not easy to determine, quantify or qualify. However, there are methods in place in the Netherlands in the form of the Quality Standards for Dutch Archaeology (KNA) and specifically the 'KNA 3.2 Waterbodems', which has been specifically developed for underwater archaeology.²⁶

There are also other reasons for the in-situ preservation of culturally significant sites. In the past few years, the issue of in-situ preservation has been widely debated in the field of archaeology.²⁷ This debate has, however, led to some confusion within and outside the archaeological community. An often cited reason for in-situ protection is that we should preserve some material for future generations.²⁸ This notion alone has little or no value, and has the capacity to fuel critics who believe that in-situ preservation is equivalent to out-of-sight and therefore out-of-

mind. It is impossible to predict and therefore to decide what values future generations will hold, because we cannot know what they will consider to be their heritage. It may be better to preserve the past for ourselves – based on what we consider important to preserve for the short and long-term future and on what we want to tell future generations (starting with our children) about us and our past. In the first instance, this may sound like a minor rewording of the same idea, but there is a crucial difference: we will decide for ourselves what to give; we will decide from our own perspective what is important or not and will not dictate it to others (the future generation).

Several other reasons for preserving shipwrecks in situ, both from a philosophical and from a practical point of view, are mentioned below.²⁹

4.4.1 For future enjoyment and research

It is commonly held that we must not only aim to preserve a representative part of the maritime past for scientific research, but also for future enjoyment and research. We should, however, keep in mind that the selection of what to preserve is our choice, as part of contemporary society, with our own understanding and set of values. Thus, we are passing on what we think is worth keeping for future generations. Moreover, it is only possible to make a selection of what to preserve because the number of submerged sites of potential archaeological interest is immense.³⁰ Before we make such a decision, therefore, it is important to know the extent of the archaeological resource. We also have to investigate the likely meaning (significance) of the individual sites for maritime archaeology and for the reconstruction of our past. This can be achieved by assessing each site individually and the archaeological resource in general.

In the past, in-situ preservation was carried out with the intention of leaving archaeological sites for future generations or even for eternity.³¹ Today, we know that protection in situ can slow the process of degradation but it is impossible to completely stop the deterioration of sites.³² If we want it to be effective, in-situ preservation often means active involvement (and thus becomes protection), with the awareness that all efforts are temporary.³³ It is, therefore, important to have some idea about how long certain kinds of measures can protect an underwater site. The protective measures should be selected based on their capacity to minimize deterioration of a site but also allow access

²⁶ 'KNA 3.2 Waterbodems' www.SIKB.nl (accessed 9-1-2016). The 'KNA Waterbodems' was recently incorporated, along with the quality standards for land archaeology, into a BRL 4000 (accessed 19-1-2017).

²⁷ See, for example, Willems 2012, Staniforth & Shefi 2010.

²⁸ See, for example, Spennemann 2011 or Ortmann 2009, 2.

²⁹ Most of these reasons were first published in Manders 2004 (1).

³⁰ UNESCO estimates that there are 3,000,000 undiscovered shipwrecks around the world. Promotion folder, the UNESCO Convention on the Protection of the

Underwater Cultural Heritage, n.y, 4.

³¹ Acknowledging this makes it easier to understand that no future activities, including maintenance and monitoring, were planned. 'Eternity' meant leaving the sites as they were found, and with no plans for the future.

³² See Chapter 3.

³³ This is also the case for shipwrecks and objects which have been raised, conserved and preserved ex situ.



Fig. 4.2 Diving on wrecks may just be for the fun of it. Sports divers on the shore of the Oostvoornsemeer. Photo: M. Manders.

to the site in the future for archaeological purposes, for other scientific research and sometimes even for the sake of their enjoyment. It is not only important to save a cross-section of maritime history (the Stepping Stones, see amongst others 4.6) for future research (when we might have a different view on our past and different questions to ask); the choices must also be acceptable to the general public.³⁴

The aspect of enjoyment (in addition to research) should not solely be focused on future generations. In fact, making sure that the current generation has the opportunity to enjoy its heritage, including underwater cultural heritage, is extremely important. Through this, understanding or awareness can be created, which again is essential for the effective protection and management of the underwater cultural resource (Fig. 4.2).³⁵

4.4.2 Showing responsibility and commitment

Most countries today have well-developed legislation and

regulatory systems to protect cultural heritage, in Europe often based on the Valletta Convention. Maritime and underwater archaeological heritage is often included in this legislation or, if not, separate laws have been made. This shows the commitment of countries, assuming responsibility for preserving their own and also a common maritime past.³⁶ The protection of archaeological sites under water in legal and physical ways is a logical method to manage these sites responsibly.

Some international regulations concerning the protection of underwater maritime heritage go even further by stating that in-situ preservation should be considered as the first option. These include the European Convention on the Protection of the Archaeological Heritage of 1992 (in short Valletta Convention or Treaty of Valletta),³⁷ the UNESCO Convention on the Protection of the Underwater Cultural Heritage of 2001³⁸ and the ICOMOS Charter on the Protection and Management of Underwater Cultural Heritage of 1996.³⁹ In the Netherlands, underwater

³⁴ Although we (society) cannot foresee exactly what future generations will want to know, we can select those sites that we think are interesting and that we want the next generations to take note of. Therefore, there has to be acceptance from the general public.

³⁵ This issue is discussed further in Chapter 7.

³⁶ For example, through the protection of sites that have a shared past. See, for example, the protection of the Sofia Albertina in the Netherlands (Overmeer 2012) and the foreign Dutch shipwrecks programme of the RCE <http://archeologieinnederland.nl/internationaal-beheer> (accessed 3-7-2015)

³⁷ European Convention on the Protection of the Archaeological Heritage (Malta Convention/Valletta Treaty): <http://conventions.coe.int/treaty/en/treaties/html/143.htm> (accessed 3-7-2015).

³⁸ UNESCO Convention on the Protection of the Underwater Cultural Heritage, Paris 2001: unesdoc.unesco.org/images/0012/001260/126065e.pdf

³⁹ ICOMOS Charter on the Protection and Management of the Underwater Cultural Heritage, Sofia 1996; http://www.international.icomos.org/charters/underwater_e.htm

cultural heritage is protected by the Heritage Act of 2016.⁴⁰ Not protecting underwater cultural heritage would undermine cultural heritage management generally, especially in the Netherlands, where protection concerns terrestrial and underwater sites combined.⁴¹ Selection procedures, laws and defined responsibilities are all in place for archaeological heritage as a whole and should thus be executed similarly in all environments.

4.4.3 An enormous number of sites

The number of submerged sites discovered, notably shipwrecks, is steadily increasing and there are insufficient resources to assess them all. In addition, many countries have shifted their priorities explicitly or implicitly by not only regarding centuries old shipwrecks as part of their heritage, but also wrecks from eras such as the First and Second World Wars, and even more recent times.⁴² Combined with an increased interest in submerged prehistoric sites on the seabed,⁴³ this has resulted in the steep growth in the number of submerged sites recorded in official databases. For example, in the Netherlands, the official archaeological database, ARCHIS, consists of approximately 1,500 archaeologically validated sites under water.⁴⁴ The number of new sites being discovered and reported is approximately 50 to 100 per year.⁴⁵ This is comparable with other countries with well-developed underwater cultural heritage management systems in place. In Australia, for example, there are over 7,000 registered historic shipwreck sites.⁴⁶ Every year, 100 to 200 new sites are reported. In Denmark, there are almost 1,000 designated shipwreck sites and over 1,500 submerged settlement sites.⁴⁷

This is probably just a fraction of what still remains to be discovered or even what lies on the seabed, has been detected, but is still unassessed. An effort to combine as many existing databases with underwater positions as possible has led to the creation of a database managed by the RCE consisting of approximately 60,000 contact points, representing all the locations registered in different databases from different sources.⁴⁸ Most of these sites have not been archaeologically assessed and their value to underwater cultural heritage remains unknown. These numbers simply illustrate the richness of our underwater cultural heritage. However, in many countries, unfortunately, these sites remain a forgotten cultural resource in heritage management.⁴⁹

Today, diving is not such an unusual hobby. Equipment that provides visibility even in the murkiest water is readily available, as well as equipment that can penetrate into the seabed.⁵⁰ This has caused a dramatic increase in the number of archaeologically interesting underwater sites being registered. These more advanced survey methods make it possible for many to explore the underwater world at a reasonable cost. This increased accessibility to our maritime past has created an immense problem. To keep pace with the number of sites reported every year, thousands of archaeologists from the maritime archaeological community would be needed to investigate them all.⁵¹ Even if thousands of archaeologists worldwide were available, this would only create new problems. When archaeologists do work in the field, they also create huge amounts of work for themselves in the form of post-processing and conservation work. In the

⁴⁰ This used to be the Monuments Act (Monumentenwet) 1988. Followed by the 'Wet op de Archeologische MonumentenZorg' (WAMZ, 2007) which had this law as a basis but also included the Valletta Treaty. On 1 July 2016, the new Erfgoedwet (Heritage Act) came into force. This new law will have a major influence on the effectiveness of law enforcement in UCH management. In the Monuments Act, it was still important to prove somebody had been illegally digging under water. It was, therefore, almost impossible to catch someone in the act of doing so. The new law also declares the moving and removal of objects from an archaeological site to be illegal. This is much easier to prove. It does, however, also have downsides, for example, the criminalization of souvenir hunters (<http://cultureelerfgoed.nl/sites/default/files/publications/heritage-act-2016.pdf>, accessed 19-12-2017). See also Chapters 3 and 7.

⁴¹ See also Chapter 1.

⁴² As an example, the Netherlands has even dropped the minimum age of 50 years for cultural heritage sites.

⁴³ See, for example, the extensive research executed on the harbour extension of Rotterdam (Maasvlakte 2): http://www.rotterdam.nl/Clusters/Stadsbeheer/Images%202015/BOOR/PDF/BR566_Maasvlakte2_ENGLISH.pdf (accessed 15-12-2015) or the extensive work of, for example, Gaffney et al. 2007.

⁴⁴ In ARCHIS 2, 63,555 National Monuments are registered, 1,454 of them are archaeological monuments (checked on 9-6-2015). Although many more sites are included in the database, it proved to be impossible to select 'maritime' or 'underwater'. The 1,500 is a rough estimation. The fact that they cannot be selected shows the bias against these fields of cultural heritage and archaeology, but hopefully this will be resolved with the new ARCHIS 3.

⁴⁵ See also Chapter 1.

⁴⁶ Australian National Shipwreck Database: <http://www.aima.iinet.net.au>.

⁴⁷ Every country has its own set of selection criteria that define which sites are archaeologically or historically important. The registration of sites also differ. Attempts to similarly assess sites have been undertaken in the EU Culture 2000 project, MACHU (Managing Cultural Heritage Underwater), September 2006 to September 2009. See also: www.machuproject.eu.

⁴⁸ See also Chapter 1.

⁴⁹ The Dutch example of approximately 1,500 sites registered in the national cultural heritage database, while a database of 60,000 contacts exists, is not abnormal. In this light, it is also interesting to note that the Third National Cultural Heritage Census in China in 2009 mentioned that it had 70 ancient shipwrecks in its ocean territory, while the National Conservation Center for Underwater Cultural Heritage estimated that in the Southern China Sea alone there are 2,000 or more shipwrecks. Even this estimate might be on the low side. Source www.whatsonxiamen.com/news19118.html (accessed on 02-04-2017).

⁵⁰ For around \$US 2,000 one can buy a Hummingbird side scan sonar. See Kaeser & Litts 2013.

⁵¹ Some countries have taken up this lack of capacity in a very serious way. China has, since 1989, educated 90 underwater archaeologists and will in 2014 educate another 30. www.whatsonxiamen.com/news19118.html (accessed on 24-7-2014). Indonesia is also forming an army of underwater archaeologists at an incredible speed, Sudaryadi et al. 2012.

early 1990s, the archaeological community in the Netherlands was forced to keep its archaeologists indoors in order to process all the material and data gathered. We are still dealing with the post-processing of archaeological finds and data that remain.⁵² Hence, in-situ preservation is a way to keep sites 'in storage', against an expected reasonable cost.⁵³

4.4.4 Underwater archaeology is expensive

We have to acknowledge that an underwater excavation can be very expensive in comparison to terrestrial archaeology (see Chapter 5),⁵⁴ and the same can be said when comparing in-situ preservation of underwater sites with those on land. Although diving is no longer as exclusive as it used to be, all underwater interventions are still relatively expensive. It is necessary to use special equipment, and to be able to work accurately requires many hours under water. Moreover, there is only a limited amount of time that a diver can stay under water each dive, and therefore an underwater project requires more time and more people to do the same work in comparison with archaeological projects on land. In some countries, underwater archaeologists need special training and licences⁵⁵ and are exposed to the challenges posed by weather. This usually makes an underwater excavation far more expensive than a regular excavation on land. With respect to tax payers money (as the government is often involved) or other private sources of money (NGOs or Malta-related contractors), we have to be very selective with respect to which sites will be excavated. Before any such undertaking, the logistics, planning, execution and associated expenditures for an excavation must be thoroughly investigated and accounted for. In most countries, the excavation of a shipwreck involves heavy investment in resources, both in terms of staff time and finances. Post-excavation analysis, conservation and subsequent curation also need to be taken into consideration.⁵⁶

For governments, as suggested above, the priority has been to preserve sites in situ, partly due to the imputed high costs of the alternative; that is, excavation, but also to avoid deselection of sites.⁵⁷ However, while this in-situ approach may essentially be less 'expensive' than excavation, in the long run it may not be a

cheap option either. Costs for responsible in-situ management may include monitoring and maintenance of the site, for example.⁵⁸

4.4.5 A time gap

Another reason to apply in-situ preservation, including mitigatory protection methods, is the fact that there is often a major time gap between discovery and a planned excavation.⁵⁹ This means that many sites that have been located and are awaiting investigation may require protection in the interim in order to maintain the quality of the archaeological information. Decisions about how to manage a single site must be made in relation to other sites.⁶⁰ Thus, we aim to develop objective criteria on which to base our decisions regarding whether a site can or should be protected in situ. While this takes time, a lack of capacity and financial resources, and the necessity of political commitment, heavily influence these decisions.

The following activities or elements, which sometimes demand considerable time, must be carried out or established before excavation can start:

- » First, a non-intrusive assessment, where possible
- » A project design
- » Advance funding for the whole project
- » A timetable
- » Research objectives: where details of the methodology and techniques to be employed are defined in the project design
- » A competent, suitable and qualified investigating team must be established
- » Any political or legal issues must be resolved, including ownership of a wreck⁶¹

It is essential to establish the research objectives of an excavation. Once an object or site has been excavated it will never be the same. In this sense, excavation is destructive and therefore requires strict regulation.

It is, of course, impossible to obtain all information encapsulated in a site. There may be hundreds of potential questions, for

⁵² Erfgoedinspectie 2010. See also <http://www.nwo.nl/onderzoek-en-resultaten/programmas/odyssee/achtergrond> (Accessed 3-7-2015)

⁵³ See Chapter 5 for cost indications in-situ conservation.

⁵⁴ Kelly & Thomas 2012, 83.

⁵⁵ Certification for scientific divers is not the same across the world. Even in Europe there are big differences, see, for example, the European Diver Certificate, NL: Duikarbeid A + B, UK: HSE.

⁵⁶ See, for example, the Annex to the UNESCO Convention for the Protection of the Underwater Cultural Heritage (Paris, 2001), the Dutch Quality Standards for Archaeology, KNA 3.2 (BRL 4000), Hamilton 1997 or Viduka 2012.

⁵⁷ <http://archeologieonline.nl/nieuws/kosten-archeologisch-onderzoek-rijzen-de-pan-uit>. On in-situ preservation being cheaper see, Willems 2012. Gemeente Oldambt. Raadsvergadering d.d. 17 November 2010, Raadsvoorstel Nota

Archeologie en Beleidskaart Archeologie, punt 3.2 of Beleidsnota archeologie gemeente Nieuwegein. Van vondst naar verhaal, Raadsnummer Versie 2.1 concept Date 01 June 2012, 32.

⁵⁸ See also Chapter 5.

⁵⁹ The Scheurak SO1 wreck was discovered in 1986. In 1989, excavation started but was only finished in 1997. Large parts of the construction are still lying in the seabed of the Wadden Sea. The *Mary Rose* was discovered in 1971 and raised in 1982. Excavation lasted from 1979 to 1982, while the conservation and restoration of objects and the hull is still ongoing.

⁶⁰ See also, for example, Chapter 5.

⁶¹ Maarleveld et al. (eds) 2013, 64.

example, when the cargo or the construction of a ship are studied. By excavating the cargo alone and attempting to answer a few questions, you remove the source, which consequently will limit the number of questions that can be addressed in the future. It is, therefore, important to have experience in the field of research (expert judgement) and to be acquainted with current and past research and research agenda(s) before starting an excavation. On this basis, the most important questions can be determined. In the Netherlands, there is such an archaeological research agenda.⁶² Although primarily set up for use in terrestrial archaeology, the underwater and maritime components have now been integrated into the new version, rather than setting up a specific underwater or maritime research agenda.⁶³

4.4.6 Difficulties of conservation

Another reason to promote in-situ preservation of shipwrecks is to keep them in safe underwater storage in their 'natural' environment until new and better conservation methods are developed. For example, traditional polyethylene glycol (PEG) conservation treatment has recently been questioned because of problems with increased sulphur and iron concentration, which have been identified in timbers of various wrecks, including the *Vasa* in Sweden and the *Mary Rose* in the United Kingdom. The conservation of iron wrecks or large iron objects has always been a major issue.⁶⁴

4.4.7 Current experience and enjoyment

Information from archaeological excavations will eventually flow into the education system, and museums will be filled with objects produced by such an approach. All of this is valuable, but what is the role of the public and its experience of the past?⁶⁵ Museums make an enormous effort to give the public such an experience.⁶⁶ However, this is different from the experiences and the enjoyment we have while diving on a real wreck site (See also Chapter 7). Shipwrecks that are preserved in situ may well be used as places to gain this experience and enjoyment. The current Heritage Act (and the past Monuments Act) in the Netherlands provides the basis for such enjoyment by stipulating that divers can dive on any site they wish, but excavation, moving and removal are prohibited. Sites that are fully protected in situ and thus covered, may not offer much excitement, while other wrecks that do not need physical protection probably will. This may be an

important selection criterion for in-situ preservation in the future.

4.4.8 Different values of preservation

Shipwrecks have many different values. They are looked at from different angles and by different people, and are thus also significant for a number of reasons and for a number of different stakeholders. A site may be under threat not only from the perspective of underwater archaeologists, but also from that of ecologists, sports divers and even fishermen. Quite a few of the identified threats to shipwrecks in the Wadden Sea have a negative effects for a number of stakeholders. Shipwrecks contain vital information about our past, that is true, but they are also important for biodiversity and are great places for diving.⁶⁷

There are mitigation strategies for all these threats; obvious and more creative ones. They range from in-situ protection methods to keep the soil environment waterlogged and oxygen free (See also Chapter 5), to the setting up of cooperation agreements between different users (stakeholders). The mitigation strategies must thus be adapted and accepted by a larger group of stakeholders than archaeologists or cultural heritage managers alone. Managing a wreck or the underwater resource in general becomes a task that is not only focused on the cultural value but also on a careful consideration of various values and the creation of support. This has become especially important in the light of the national policy in the Netherlands regarding decentralization, as a result of which, even more people are becoming directly involved and different values have to be balanced and protected.⁶⁸

4.5 Arguments against in-situ preservation

Although there are many reasons to preserve our underwater cultural heritage in situ there are also reasons not to. Obviously, if a site is not considered to be of high archaeological value, there is no reason to protect it for that particular reason. Moreover, sites may be sacrificed in the process of mitigating the effect of works on the broader environment, or other values of a certain location or site will prevail and the archaeological information will be sacrificed. There are, however, other downsides to this concept of in-situ preservation that are related specifically to cultural heritage management issues.

⁶² The 'Nationale Onderzoeksagenda Archeologie 1.0' (NOaA) is currently under revision and will have a different structure when finished. For the current NOaA, see: <http://archeologieinnederland.nl/bronnen-en-kaarten/nationale-onderzoeksagenda-archeologie-10>. For the new NOaA, see: <http://www.cultureelerfgoed.nl/dossiers/verbeteracties-archeologie/kenniskaart-deelproject-1-nieuwe-nationale-onderzoeksagenda>

⁶³ It has taken many years to incorporate these maritime and underwater archaeological topics. In an earlier stage, the aim was to develop a separate agenda; however, new insights have resulted in the conviction that the basic questions about our past can be answered through the archaeological investigation of the material past on land as well as underwater, terrestrial as well as maritime.

⁶⁴ This is partly due to the lack of knowledge concerning how to preserve large amounts of metals in situ, but also due to the fact that large iron wrecks are – due to the material they are built with and the fact that they have relatively recently sunk – often still well intact and largely protruding from the seabed. See for more info also Chapter 2 and 6.

⁶⁵ Shanks 1992.

⁶⁶ See Chapter 7.

⁶⁷ <http://cultureelerfgoed.nl/nieuws/bescherming-scheepswrakken-biedt-kansen-voor-biobouwers> (accessed 19-01-2017).

⁶⁸ For more on this, see Chapter 2.

4.5.1 No inclusion in regional identity building

Through archaeological excavations we can learn more about our past. This understanding helps us to build our current identity.⁶⁹ Deciding not to excavate means limiting the amount of information we can extract from a site and thus of gaining information which would potentially rebuild, reshape or reinforce our identity. A cultural assessment is the next best thing, ignoring the site the worst. Out-of-sight may mean out-of-mind and this may entail less information with which to build collective memory. In addition, learning less about the past may mean that the social role of archaeology – and, in fact, cultural heritage management in general – will be diminished, not to mention the negative economic impact, because 'in-situ management' will still be costly but nothing will be gained in terms of knowledge.

4.5.2 No methodological development or capacity building

Excavation under water is based on the same premises as on land. However, the methodology is often different, and even within various underwater environments (fresh and salt water, currents, low or high visibility, etc.), different methods and techniques are often required. Without practice, it is difficult to develop new methodologies and techniques and to improve the quality of the profession. Moreover, without sufficient numbers of accessible underwater archaeological excavations there will be a lack of practice in the profession and a hold on new capacity.

This is a realistic threat. Archaeological excavations, especially under water have decreased in number over the years under the influence of new legislation, policy and the fear of high costs. This is a process that can be seen in the Netherlands. In combination with very strict diving law, this has resulted in a halt to the active participation by amateur archaeologists and international or other archaeologists who do not have the appropriate diving licenses, restricting activities to professionally licenced underwater archaeologists.⁷⁰ While an exception has been negotiated for students,⁷¹ they are not permitted to participate in excavation techniques that use airlifts and water dredges, which are considered to require heavy equipment. Therefore, it has become difficult to exchange knowledge with experts on site and there is no build up of expertise in excavation by students (See also Chapter 1).

4.5.3 Ongoing degradation

Although we can mitigate against the negative effects of natural and anthropological interventions with in-situ protection and conservation, we must realize that the process of degradation

continues. We may be able to slow down the degradation process and even counter some threats, but others will continue (at a slow rate). For example, if we remove oxygen from a site, most biological attack will cease, but erosion bacteria are still able to survive in anoxic environments.⁷²

4.5.4 The long-term financial consequences

It is often said that in-situ preservation is a cheaper option than excavation. This may be true for the initial stage; however, when considering long-term management, this may be somewhat different. This, of course, depends on how the concepts of responsible heritage and in-situ management are understood in practice. In-situ preservation often requires active involvement (protection), at least in terms of monitoring and the mitigation of negative effects on site, such as repair and maintenance. Why, other than for budgetary reasons, would we proclaim preservation and protection as a policy otherwise? It seems logical that when a site has been determined to be of archaeological value it will – with the prevailing in-situ policy – be preserved in situ and measures will be taken to ensure its value is determined over time. This involvement in the management of in-situ preserved sites requires long-term budgets to ensure continuity. These budgets will need to grow as more sites are preserved and protected in situ.⁷³

4.5.5 Is the in-situ dogma 'threatening archaeology'?

In-situ preservation is a tool of management; one step in a larger process (See Fig 1.8). It comes after considerate evaluation and should be balanced with other steps in management. This includes excavation, or using the site to gain knowledge. It is for this particular reason that traditional archaeologists see a global in-situ policy – often considered to be a dogma – as a threat to the development of underwater archaeology in itself,⁷⁴ and there is a lot to say for this. There is a natural tension between the two: in-situ preservation often means a non-disturbance approach, considering the site as a resource for the future, but not now. A site may trigger curiosity, but cannot satisfy it. This may be partly due to the predominant all-or-nothing approach; either excavate or do-not-touch and leave in situ. However, should we be so rigid in this choice? Both are important steps in cultural heritage management.

If we decide to preserve in situ for the purpose of investigating them at a later date, can we find a middle ground? We could start by officially including partial excavation as a form of archaeological heritage management. These excavations could be used (carefully) to answer a few obviously significant questions, while

⁶⁹ See, for example, Jones 1997.

⁷⁰ See, for example: <http://www.werkenonderoverdruk.nl/> (accessed 3-7-2015).

⁷¹ This has also been implemented in the dive law 'working under excess pressure', Articles 6.31 and 6.8. See also Vroom 2017.

⁷² See Chapter 3.

⁷³ See Chapter 5.

⁷⁴ <http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/unesco-manual-for-activities-directed-at-underwater-cultural-heritage/unesco-manual/general-principles/in-situ-preservation-as-first-option/> (accessed 15-12-2015).

the rest of the site is either preserved in situ or deselected altogether. This seems to be more in line with the essence of archaeology, which is guided by a curiosity to learn about the past.

It is still difficult to express this option – of only doing partial excavation and preserving the other part in situ or deselected – explicitly. Implicitly, it has been done often enough. Sometimes the choice may have been triggered by a lack of money (in the long term), sometimes there was a desire to continue but the political support was lacking, or there was a shift in priorities.⁷⁵

There are some visible changes of approach in cultural heritage management: from the almost blind sense of urgency not to excavate to a more pragmatic approach to how best to excavate within the context of cultural heritage management.⁷⁶ Moreover, boundaries are being explored and some rules and regulations are being re-evaluated.⁷⁷ For example, does cultural heritage management benefit from the exclusive involvement of highly educated professionals, or should it be more open? Fortunately, there already seems to be wider involvement of professionals other than archaeological stakeholders.⁷⁸ At least this shows a wider interest and commitment. More people are becoming involved in the study of the past. However, could they also be more involved in the preservation of this past in situ? This depends on the approach. Basically, people want to learn, people are curious. Increasing involvement may also be a good response to critics who claim that in-situ policy brushes sites under the carpet. Proof of a neglect of sites in situ, it is argued, can be found in the fact that in the Netherlands, for example, active in-situ preservation activities and the essential monitoring and follow up

are not budgeted.⁷⁹ This means that in practice they do not form part of the task or daily undertaking of cultural heritage management. This lack of management results in well-known sites falling apart under the eyes of those stakeholders who should be partners in the management exercise, but who can see that the government is failing in its responsibilities.⁸⁰

If in-situ preservation is taken seriously, would it not be more logical to have a sufficient permanent budget available, allowing effective actions to preserve, protect and conserve sites to be taken? Fortunately, in 2013, a small first step was taken by making funds available for national archaeological monuments.⁸¹ The next step will be to have sufficient regular budgets available, to make the selection procedures for national monuments easier and quicker and to include sites that do not have national monument status when allocating budgets.

4.6 In-situ preservation in numbers

So how much are we preserving in situ? With the Valletta Treaty signed in 1992 and implemented in Dutch law in 2007, it is of interest to take a look at what has actually happened in overall archaeological heritage management in the Netherlands. The *RIGO Rapport*, written in 2012 to evaluate the effectiveness of the implementation of the Valletta Treaty for archaeological heritage management in the Netherlands, states that there are no quantitative analyses of in-situ preservation numbers.⁸² This is rather reprehensible, considering that in-situ preservation is, according to this convention, 'the first option to consider'. How can we consider it, if we do not have any data to support action?

⁷⁵ The Scheurak SO1 wreck (sixteenth century) has been excavated. However, the wreck itself, including a large concretion with cannons and objects, was left on site (Manders 2003 (2)). The *Aanloop Molengat* wreck (seventeenth century) has also been excavated, but the construction, including its heavy cargo was partly left on site (Maarleveld & Overmeer 2012). Both sites were not fully excavated for different reasons: lack of resources (budget and qualified personnel) and the urge to move on (change in attitude towards archaeology, see also Chapter 1).

⁷⁶ See, for example, the reburial of artefacts after excavation in Veth et al. 2014 and Bergstrand & Nyström Godfrey (eds) 2007.

⁷⁷ See also: <http://nl.magazine.maritiemprogramma.nl/emagazine-mp05-nl/#!/pilot-van-start-voor-behoud-archeologisch-erfgoed-texelse-zeebodem> (accessed 29-03-2017).

⁷⁸ Activities for excavation: see HMS London (1665), Thames mouth: www.dailymail.co.uk/news/article-2633884. Also, each year the Province of Flevoland, the Municipality of Lelystad, the Museum Nieuwland, the University of Groningen and the RCE organize a field school in which one of the known wrecks in the Flevopolders is investigated, often intrusively. These field schools are used in the first instance to train students in archaeology, but amateur archaeologists have also regularly been involved. (<http://oud.cultureelerfgoed.nl/archeologie/maritieme-archeologie/onderzoek/afgerond-onderzoek/international-fieldschool-for-maritim>).

⁷⁹ Caspers et al. 2011, 7.

⁸⁰ Some examples of this are the *Stirling Castle* (1679–1703) on the Goodwin Sands, UK, which was once praised as one of the best preserved wrecks in the UK and which

is now rapidly deteriorating. The shipwrecks on the Burgzand are also rapidly deteriorating, at least those that have not been actively conserved in situ. Some sports divers think that the government is not doing enough to prevent this. At least, they do not appreciate current in-situ policy (see, for example, Eelman 2002). The mid-sixteenth-century Ritthem wreck in Zeeland, the Netherlands, is rapidly deteriorating and suffering from underscoring (Vos 2009). However, nothing is being done, due to the fact that the threat comes from natural sources, the province and municipality do not have the knowledge or money to do 'something', and the central government agencies, the RCE (because cultural heritage management is decentralized) and RWS (because natural processes are deteriorating) will not assume responsibility. Amateur and contract archaeologists have also noted degradation of shipwrecks in the Oostvoornsemeer by shipworm. Although different administration levels are working together to find a solution, the process of negotiation between governmental (municipalities, province, Water board and RCE) and other stakeholders is moving slowly; too slow for divers who can see the situation is getting worse almost by the day.

⁸¹ The BRIM funds, <http://cultureelerfgoed.nl/dossiers/subsidies/instandhoudings-subsidie> and http://cultureelerfgoed.nl/sites/default/files/publications/beukers_archeologische_rijksmonumenten_informatie_voor_eigenaren_beheerders_en_gebruikers.pdf (accessed 18-10-2015).

⁸² Keers et al. 2011. This is the case 20 years after signing the Valletta Treaty and 5 years after its implementation in Dutch law.

In its evaluation, the RIGO report did not take underwater cultural heritage into account when evaluating the effect of the Valletta Treaty on Dutch cultural heritage management. This shows the lack of interest in and understanding of this topic within the wider archaeological community, despite the fact that underwater sites are included in the national databases and institutes that were involved in the questionnaires which formed the bases of the report are officially also responsible for this part of the cultural heritage.

Although no overall quantitative analyses were available in the RIGO report, some data regarding in-situ preservation can be found. Unfortunately, most – if not all – of the analysis is based on assumptions and not real measured data. The RIGO report itself states that approximately 20% of all sites that are considered to be worth preserving are in fact preserved in situ (see for more below).⁸³ This, in itself, does not suggest that the first consideration to preserve in situ – as stated in the Valletta Treaty – is being fully met, because it clearly suggests that four out of five sites have not been preserved in situ.

This, being the practice is particularly interesting if we take into consideration Goudswaard (2006) who, in relation to the terrestrial Betuweroute project, stated that in-situ preservation would be 80% cheaper than excavating.⁸⁴ This is also an interesting figure and might be convincing enough for those who have to fund such projects, but what does it mean? Would it be 80% cheaper simply because it entails avoiding the areas altogether during the building process, and thereby does not entail excavation and preservation ex situ either? Does it include long-term monitoring?

It is an interesting fact that while the Valletta Treaty stipulates that the disturber pays for direct disturbance, long-term management is not stipulated. Therefore, it is ultimately not the problem of the disturber if a site is merely left in situ, insofar as the responsibility for any long-term action is not theirs and will not lead to them incur costs.

These comparisons of the cost of leaving sites in situ or excavating and preserving ex situ do not, therefore, offer any real figures and the issue is not well regulated by the implementation of the Valletta Treaty in the Netherlands. It is more interesting to see that even without this cost incentive (of disturbers having to take

responsibility for sites when left in situ) the vast majority of sites are not being preserved in situ.

Preceding and anticipating the evaluation report by RIGO, RAAP⁸⁵ – a Dutch archaeological company – started its own internal research to answer the question of how many of the sites that are regarded as worth protecting, have indeed been protected, excavated or left alone.⁸⁶ Its conclusion was that of all the sites RAAP had identified and reported on,⁸⁷ for every ten that were considered to be worth preserving, the advice to do so had been given for seven and ultimately four had been preserved.⁸⁸ As we saw above, in their evaluation, RIGO came up with an estimate of 20% for the whole of the Netherlands. The Raad van Cultuur (Council of Culture) considered that this figure was not well founded and demanded through the State Secretary that research be carried out to determine the real figure.⁸⁹ Through the RCE, this research assignment was given to RAAP, due to the research it had already carried out, and it was asked to provide quantitative analyses concerning the number of sites that are being preserved in situ.⁹⁰

Based on 6,000 research reports that were evaluated for the period between 2007 and 2011, of all archaeological sites, 31.9% were being preserved in situ. Thus, one in three sites are actually being preserved in situ. Although neglected in the RIGO report, RAAP had included 'maritime' in their research, but due to a lack of good (ready) data no quantitative analyses had been done.⁹¹ This presents the danger of becoming a vicious circle, in the sense that due to a lack of interest or sense of difficulty, there is a lack of activity, which results in a lack of data. It is, therefore, a positive sign that RAAP had made the effort to look into the data for maritime cultural heritage and reported this omission.⁹² It is now of urgency to collect this data on underwater cultural heritage. We require data on the amount of known and unknown heritage; data on the sites that are considered to be of high archaeological value and thus in need of protection; the threats; the effect of in-situ mitigation strategies; and the costs involved in in-situ preservation of underwater sites.

An important part of in-situ preservation is protection by law. In addition to the fact that in the Netherlands all 'archaeological' sites are protected by a blanket law, regardless of whether these sites have been found or not,⁹³ those that are registered as

⁸³ Keers et al. 2011.

⁸⁴ Goudswaard 2006.

⁸⁵ Schute et al. 2011.

⁸⁶ RAAP-rapport 2525, 2011.

⁸⁷ In total, 1,979 RAAP research reports were issued between the 1 September 2007 and 1 May 2011.

⁸⁸ To be precise, 38.2%.

⁸⁹ Tweede Kamer, vergaderjaar 2011–2012, 33 053, no. 3.

⁹⁰ Schute et al. 2013.

⁹¹ Schute et al., 2013, 75, note 52.

⁹² It is, however, important to mention that the definition of 'maritime' and 'underwater' are not the same. Maritime cultural heritage refers to all the heritage concerned with the relationship between human societies and water, regardless of whether this is under water or on land (harbours, jetties, shipwrecks), while underwater cultural heritage refers to what is lying still fully or partly under water. This may also concern the relationship between human societies and water, such as bridges and shipwrecks, but they might also be inundated prehistoric sites.

⁹³ Otte 2009, 116.

national monuments may be protected by additional laws.⁹⁴ In 2015 there were 63,555 National Monuments in the Netherlands, of which 1,454 are 'archaeological' sites, and only six were lying under water.⁹⁵ This number of underwater sites is thus very low (0.0001% of the total National Monuments and 0.004% of the national archaeological monuments), perhaps preposterous if we keep in mind that they not only encompass shipwrecks, but also sunken bridges and villages, and that two-thirds of the Netherlands (including the EEZ) is water.⁹⁶ The Netherlands has been shaped by the relationship of its people to the water and can therefore be called a maritime nation.⁹⁷

Why are there not more maritime and underwater national archaeological monuments? Is it because they are not considered to be of national importance? Is it because the sites do not need protection? Is it because the process of registration is too complicated and time consuming? Or is there merely a lack of interest? Although the latter would be a logical explanation, it would be the most devastating and negatively charged. It would suggest, first of all, that there is no universal, objective way to evaluate an archaeological site (on land or under water) such that it leads to a certain kind of protection or not. Moreover, it would also suggest, as a consequence, that sites are being designated significant based on an arbitrary and possible personal interest.

The amount of national underwater cultural heritage recognized, even considering the maritime monuments that are not lying under water, is certainly not sufficient to consider these to be the 'stepping stones' in Dutch maritime history.⁹⁸ If this was a reason to designate more sites – and this is legitimate – then there would be nothing against assigning more underwater sites to the list. A top 50 or 100 would be possible and offer a tool for telling the maritime history of the Netherlands to its own people and also abroad as an export product. It would even be preferable.⁹⁹ This would be equivalent to 0.034% to 0.069% of the current total number of national archaeological monuments.

At present, seven wrecks have been physically protected on the Burgzand in the Western Wadden Sea.¹⁰⁰ In addition, three other

sites – a Roman quay in the Maas in Cuijk,¹⁰¹ a seventeenth-century shipwreck in Lake Oostvoorne¹⁰² and a fifteenth-century shipwreck in the IJsselmeer¹⁰³ – have been physically protected. This demonstrates that the focus on archaeological research and management in the Netherlands has been, on the Western Wadden Sea.

4.7 Conclusion

In situ means 'original place of deposition'. This definition is not straightforward and may lead to discussion about what 'original' means and what belongs to a site. In relation to shipwrecks, it is often more clear what belongs to the site and what not: a disaster occurred and the ship sank with everything it had on board. Everything on the ship at that specific moment and connected to the event thus belongs to the site. Post-depositional processes may also form part of the site, at least insofar as they may disturb the view we have of the past. This, however, needs to be acknowledged to begin with, and the distinction of what is contemporary and what is not should be made. What we consider to belong to the site in situ determines what we preserve and why.

There are several overarching reasons why we preserve sites in situ: it may be for future research and enjoyment, showing that we are serious about our responsibility and have a commitment; there is an enormous number of underwater sites and many more are being discovered annually which makes it impossible to deal with them straight away; underwater research is expensive and there is usually a time gap between the discovery and investigation of a site and in the meantime it needs to be taken care of; and there may be conservation difficulties that force us to maintain a site in an environment that ensures it remains in relatively good condition for many years, rather than changing the environment by removing it, with all the conservation problems that arise as a result. We may also decide to keep a site preserved in situ for other reasons, such as the wish and the need to experience and enjoy a site underwater now, or perhaps another value that has been attached to the site by another stakeholder.

⁹⁴ See also: <https://cultureelerfgoed.nl/onderwerpen/advies/archeologische-rijks-monumenten> (accessed 29-03-2017).

⁹⁵ ARCHIS 2 and Erfgoed Monitor RCE (Heritage Monitor RCE). Accessed 2-7-2015. It turned out to be difficult to select maritime and underwater sites from the databases since there are no specific tabs to select these sites in the overall database. One site, the *Aanloop Molengat* wreck site, was still in the process of being declared a National Monument when these calculations were made. However, whether we are talking about 6 or 7 sites does not make a big difference. Of those 7 there are 5 shipwrecks and two Roman Bridges. Another site, Valkenisse is a half-submerged site of a village. 11 shipwrecks in the polders (now dry land) are National Monuments.

⁹⁶ The whole North Sea seabed is an inundated prehistoric landscape with still undiscovered camps and other human traces. See Gaffney et al. 2007.

⁹⁷ Nevertheless, 7.3% of GDP comes from maritime businesses and 440,000 people

(5% of Dutch employees work directly in this industry). <http://www.maritiemland.nl/news/maritiem-bedrijfsleven-nauw-betrokken-bij-opstellen-maritieme-strategie-3/>

⁹⁸ Manders 2015(2). A quick search through the National Monuments list shows 22 sites (out of 1,454 archaeological sites) that can be regarded as 'maritime', Houkes 2015.

⁹⁹ See Beerepoot (2012) on this subject.

¹⁰⁰ This is one national monument.

¹⁰¹ Manders 2006 (3).

¹⁰² Kleij 1993.

¹⁰³ <http://www.flevolanderfgoed.nl/home/erfgoed/oostelijk-flevoland-2/scheeps-wrakken-2/wrak-1460.html> (accessed 29-03-2017).

There are also reasons not to opt for in-situ preservation. One obvious reason is that the site has no or very low archaeological value. However, there are also more fundamental reasons: if left in situ, it may not be included in regional or national identity; there will be no methodological development and capacity building; the sites will continue to deteriorate; and there will still be long-term financial consequences.

Optimistically, we can say that on land – that is with respect to the 'terrestrial' cultural heritage – approximately 30% of all archaeological sites that have been discovered, assessed and proposed to be preserved in situ, will be preserved in situ. For underwater sites, we still have no numbers, but here a distinction will have to be made between sites being left under water and those being actively protected. The percentage of the former may be high, the latter very low.

At present, nine archaeological sites have been physically protected under water, six are lying in the Western Wadden Sea. This shows the current focus, not only of archaeological research but also management, on the Western Wadden Sea. Only six underwater archaeological sites are national monuments, which is equivalent to 0.0001% of the total Dutch National Monuments and 0.004% of national archaeological monuments.

Once we know why we want to protect an underwater site, we can start to think of how to do so. The way we protect a site has implications for how we will use it, now and in the near future. This decision should reflect why we – as a society – wish to preserve the sites and thus what values prevail in relation to that site. The different views on in-situ preservation reveal the need to talk among stakeholder groups, even before actively working together in underwater cultural heritage management, with the aim of creating a more balanced in-situ policy.

