



Pondering the Past: Exploring the Synergy between Water Management and Heritage Management

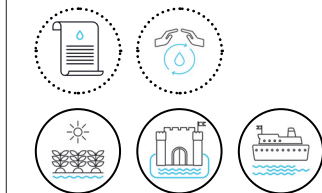
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Because of the urgency of the current water challenges, we need to decide on a water-heritage agenda. In order to do so, we should first disentangle the sometimes confusing relationship between water management and heritage management. Where do water and heritage management meet and how can they serve each other? It is argued that fruitful synergy between the two disciplines can be reached in three dimensions: the historic dimension, the conservation dimension and the planning dimension. The subject of interaction between the two disciplines differs per dimension and relates to the changing water system, the heritage we cherish and a changing living environment respectively. The synergy to be reached between the two disciplines differs accordingly.



KEY THEMES



Introduction

This publication, *Blue Papers*, addresses many water challenges, including sea-level rise, increasing river flows, changing rainwater patterns, floods and droughts. All these challenges also affect our heritage. Water challenges can be a threat to the heritage we cherish, but sometimes they may offer a new perspective on this heritage. Inversely, heritage can pose an obstacle to urgent water challenges, yet sometimes it can offer solutions to the water issues at stake. Where do the two disciplines of water management and heritage management meet and how can they serve each other? To clarify the water-heritage relationship, we need to distinguish three dimensions: history, conservation and planning. Interaction between water management and heritage management varies in each of these dimensions.

The presentation of the UN's Sustainable Development Goals (SDGs) in 2015 was quite a disappointing experience for the global heritage community. Heritage was again positioned as an innocent victim that had to be protected from a ruthless and careless society, as if we were back in the nineteenth century. The presentation completely neglected the fruitful efforts of an active heritage community over the preceding decades to show and prove the strengths of a living heritage, its resilience and its ability to support sustainable development of a dynamic society. UNESCO acknowledged the omission and, the year after, published its Global Report on Culture for Sustainable Cities, in which it showed the many entry points where the SDGs allow heritage to contribute to their realization (UNESCO 2016). The relationship between wa-

ter management and heritage management is important to many SDGs, but especially to target 6.5, which aims to "implement integrated water resources management at all levels."¹ It is also important to SDG 11, which aims to "make cities and human settlements inclusive, safe, resilient and sustainable"; and target 11.3 ("enhance capacity for participatory, integrated and sustainable human settlement planning and management") and 11.4 ("strengthen efforts to protect and safeguard the world's cultural and natural heritage"²).

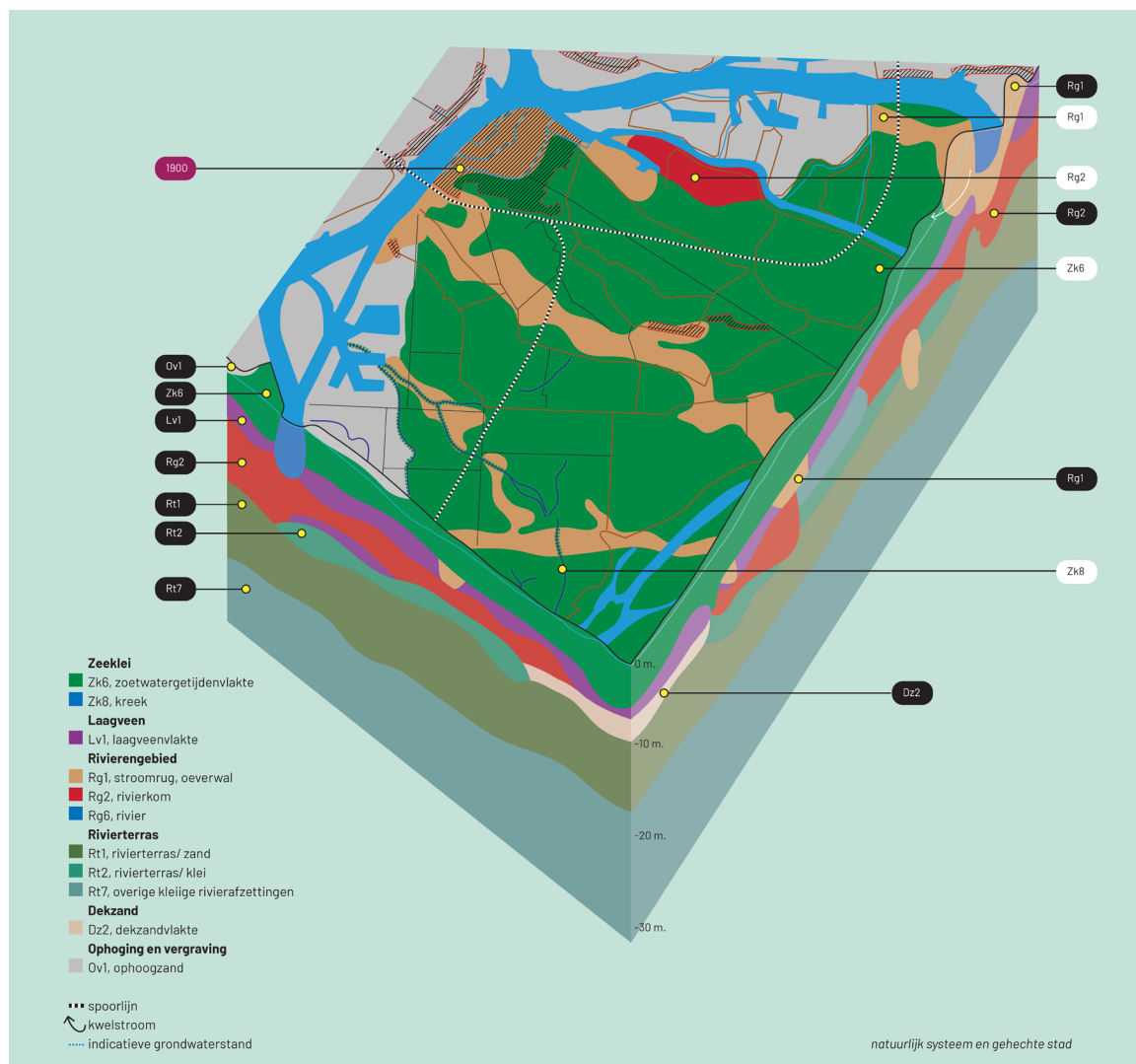
History: To Understand and to Learn

To understand the relationship between the disciplines of water management and heritage management, let us begin with history. In the historic dimension, these disciplines meet each other in the "water system." Here, we understand the water system as the water that flows from a specific source to a certain destination. History is one way to understand the current water system. Why is it the way it is? What developments and changes have occurred? Unless we understand the history of the system, we will not be able to make the right decisions for the future.

The relevance of history is obvious in the Dutch context. Especially in the western parts of the country, the large delta has been restructured many times throughout the ages. To accommodate new agricultural use, to serve transportation needs or to protect residential settlements from flooding, new waterways were constructed, and old waterways redirected, time and again; water flows were blocked on one oc-

1. https://sdgs.un.org/goals/goal6#targets_and_indicators.

2. https://www.google.com/url?q=https://sdgs.un.org/goals/goal11%23targets_and_indicators&sa=D&source=editors&ust=1697459631624341&usg=AOvVaw3Qq0RbTeb8vaduf7dTtTto.



^ Fig. 2 Historic water system in the city of Dordrecht (Source: Grond et al., 2021).

casation, to be reopened at the next. New interventions in this historical multi-layered water system require profound knowledge of past developments. A lack of such knowledge and insight may have disastrous consequences. New developments could easily be put at risk from either flooding or by drought (Broks et al. 2021). Today, historians see history as a way to understand the current situation rather than to learn from the past, since history never fully repeats

itself. Still, at certain points we can draw some lessons from water history. Curaçao presents an intriguing example. The Caribbean island has a hot, semi-arid climate which means that it is very dry throughout most of the year. The hurricane season from October until December, in contrast, brings extreme rainfall. Therefore, there was traditionally a need to harvest rainwater on the small island which is surrounded by salt water and has mostly brackish groundwa-



^ Fig. 3 *Waterkuil*, with earthen dams, in the garden of a boarding school in Welgelegen, Curaçao (Source: Soubllette et Fils., 1915–1920, courtesy of Koninklijk Instituut voor de Tropen).

ter. One way to capture superfluous rainwater and to store it for the long dry season was by means of a so-called *waterkuil*. This was usually a natural depression in a field that was further dug out and sometimes even walled. The *waterkuil* was fed by rainwater and via brooks that were connected to it. This water catchment system, simple in its performance and maintenance, functioned for many centuries. During the twentieth century however, advancements in engineering techniques provided alternative water supply systems that no longer depended on the seasons and offered water at a constant quantity and quality. There seemed to be no reason to maintain the old *waterkuils*. Over time, they became overgrown and were eventually forgotten. Yet, due to climate change, the modern water system is reaching the limits of its capacity. Now there seems to be a new reason to reactivate an ancient system and to recover

forgotten knowledge (Loen 2021).

Conservation: To Protect and to Adapt

The second dimension to address in the relation between water management and heritage management is conservation. In this dimension, the subject of interaction between the two disciplines is no longer limited to the historic water system but consists of “all physical remains” from the past that bear any significance. This heritage is increasingly affected by current water challenges. The question now is how to conserve: should we protect the heritage we cherish from growing threats, or should we adapt this heritage to changing circumstances? Each strategy has advantages and disadvantages. The preferred strategy usually depends on local conditions.

The Netherlands has a long-standing tradition

of protecting the country against water threats. Beginning in the Middle Ages, local stakeholders joined forces to protect earlier reclaimed agricultural lands. They constructed huge dikes, built windmills and established water boards. Over time, water management was further developed and refined to become a highly controlled system, providing shelter and security to people and property. Today's World Heritage Site of Amsterdam largely relies on a meticulously controlled water system. The local water authority regulates the water level in and around the city so that it varies by no more than a few centimeters. Were this system to fail, the canals would become unnavigable, and the timber pile foundations of buildings would rot. The famous canal houses would crumble, and historical attributes would be lost (IWA 2016). Protection, most logically, is a proven and necessary conservation strategy.

However obviously important a protective strategy may be, its feasibility may fade as water challenges intensify. At a certain point in time, the water threat may simply become too big to be kept in abeyance, compelling us to change strategy from protective to adaptive conservation. Adapting to changing circumstances is a widely applied practice in heritage management. People living in river deltas have always accepted water threats to a certain extent and they have learned to continually adapt. The historic city center of Dordrecht, listed as a national conservation area, presents an evocative example. Its main street, Voorstraat, is a prominent public place and is lined with historic patrician mansions, many of which are listed as national monuments. The Voorstraat also serves as a protective dike against flooding. At extreme high tides, the stately mansions are flooded from behind by the river, inundating their ground floors. During such events the residents of these houses are required to block their front

doors to stop the water from flooding the street and, consequently, flooding the city. Interestingly, the per-square-meter property value of these houses is among the highest in Dordrecht. This instance shows that water threats can be lived with to a certain extent and can be adapted to. It provides an important perspective now that we must look for alternative ways of conserving our heritage (Groenblauw Dordrecht n.d.).

Planning: To Serve and to Join

The third dimension to address in considering the relation between water management and heritage management is planning. In this dimension, the subject of interaction between the two disciplines shifts again, this time from heritage to the "living environment." Here, cultural interests meet social, economic and environmental interests. Spatial planning is a tool to integrate the different interests. The questions to be answered then are: how and to what extent can heritage serve societal needs, and how can the different interests be combined and strengthen each other? These questions were addressed by the Council of Europe in 1975 when it introduced the concept of Integrated Conservation (ICOMOS Austria 2015). More recently, the approach was updated in the 2011 UNESCO Recommendation on the Historic Urban Landscape (UNESCO 2011).

If we want to include the heritage discipline in spatial planning practice, we should adapt to its language. The better we speak the language, the more impact we will have. Thus, it is helpful to translate "value" into "potential." The concept of "value" may be very useful in the heritage discipline, but in planning discourse it may not resonate. To be applicable in planning practice, we need to identify the development potential of these values that we cherish. This



^ Fig. 4 Canal zone, Amsterdam (Source: RCE Amersfoort, 2012, nr. 10782-9101).



was well understood by the then Rijksplanologische Dienst (RPD) when it published its report titled *Waterlijn* in 1993 (Bolhuis and Vrijlandt 1993). The report explored future perspectives for the so-called “New Dutch Water Defense Line.” This military stronghold, constructed in the nineteenth century, is roughly 85 kilometers long and runs through the middle of the Netherlands, where the lower and higher parts of the country meet. It was designed to keep the enemy at bay by means of inundating the countryside. After the Cold War, the defense line lost its importance and in the 1990s the Ministry of Defense almost sold it off. The question arose as to what to do with this highly valued inheritance. The RPD did not set out to determine a detailed historic valuation of the property but instead to examine the way it could serve societal needs. The result was quite appealing. The military landscape was found to have a huge potential to solve urgent water challenges. It could be used not only to retain superfluous riverine water but could also help in reducing dehydration of the higher grounds and may help to desalinate groundwater. Thus, what once was perceived as a vulnerable heritage site may find new vitality by serving urgent societal needs.

Heritage may consequently serve as a vector by using its ability to catalyze spatial development (Janssen et al. 2017). Yet, from Dutch practice we can conclude that heritage conservation seems most effective when positioned jointly with other interests as a factor in spatial planning. Most illustrative in this respect is the highly successful renewal of the historic Dutch inner cities, as accomplished during the last quarter of the twentieth century. Also, the national Room for the River program shows the success of joining seemingly disparate interests. This spatial development program was initiated to address urgent water challenges. Ever-increasing water flows coming from the Alps and running



^ Fig. 5 High tide in the city of Dordrecht (Source: Robin Utrecht, ANP).



^ Fig. 6 Secondary canal in the Waal River at Nijmegen, constructed as part of the Room for the River program (Source: Johan Roerink, via Aeropicture.nl).

through the low-lying river delta to the North Sea required a robust reappraisal of safety measures. Early attempts in 1975 to protect the small rural village of Brakel against rising waters resulted in the paradoxical demolition of its historic center in order to enforce the river dike (Heezik 2007). This traumatic event highlighted the need to include social, cultural and economic interests in future environmental challenges and spatial planning. The current Room for the River program provides water safely by creating an attractive landscape for living, working and leisure (Rijkswaterstaat n.d.). Heritage takes up its position in integral problem-solving, not only serving the attractiveness of the landscape, but meanwhile providing a future base for its own existence.

Conclusion

This brief exploration has attempted to clarify the relationship between water management and heritage management. It should help us direct and strategize our actions effectively. We can conclude that there is reason for the two disciplines to join forces to understand and learn (in the historic dimension), to protect and adapt (in the conservation dimension) and to serve and join (in the planning dimension). It is useful to distinguish the three dimensions, since each covers a different subject of interaction: the changing water system, the heritage we cherish and a developing living environment respectively. This should help establish a water-heritage agenda for future cooperation between the disciplines.

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