

4 Protecting the natural and cultural values of the Wadden Sea coast in the Anthropocene

An urgent call for integration

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Abstract

A shallow sea and coastal plains constitute a natural entity on the Wadden Sea Coast. A highly dynamic history of natural processes and events as well as human intentions and interventions have shaped this unique region. Today, a divergent course has led to the separation of sea and land. This is based on a deep-rooted nature-culture divide in our mentality. However, this old dualism needs to be overcome, especially on a coast challenged by globalisations and a sea level rise of some metres. An approach that keeps nature protection (the sea), coastal protection (along the shore), and the protection of cultural values (in the landscape) separate from each other is bound to run aground. The natural and cultural sciences should join forces together with societies and policymakers in a transdisciplinary approach, developing new concepts for the protection of natural and cultural diversity and for coastal identity.

Keywords: Wadden Sea, nature-culture divide, dualism, Anthropocene, transdisciplinary approach

Introduction

The last two to three generations have witnessed a fundamental change in the way we approach and interact with the Wadden Sea coast. In the 1960s, the Wadden Sea was under heavy environmental pressure, and land

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Figure 4.1 Satellite image taken in 2000-2002 and combined to show low tide conditions everywhere. Light clouds seaward of the Wadden and islands show suspended matter.



Courtesy of Eurimage, Common Wadden Sea Secretariat & Brockmann Consult

reclamation projects to some extent threatened the Wadden Sea's very existence. Then, its international importance as a nature area was recognised and it was fully protected by national parks and nature reserves. At the same time the Netherlands, Germany and Denmark started a cooperative arrangement to jointly protect the area. The Wadden Sea now constitutes one of Europe's largest contiguous natural conservation areas (Fig. 4.1), and in 2009 it was inscribed on the World Heritage List, a list of the natural and cultural wonders of the planet, for its natural values. This is a development we must treasure.

Twenty years ago an international conference on the landscape and cultural history of the Wadden Sea coast, Kulturlandschaft Nordseemarschen (Fischer 1997), reinvigorated interest in the landscape and cultural history of the region and laid the basis for the LANCEWAD projects (Vollmer et

al. 2001). One outcome of the conference was the increased awareness that the region shares a landscape and cultural heritage that is unique in the world. Its settlement history of more than 2,000 years is unrivalled and is still mirrored in the landscape. The approaches to water management over the last millennium, and the societal organisation that developed alongside them in this region over that period, have set world standards for the transformation of coastal wetlands into highly profitable land.

In spite of intensive interactions between the natural and cultural landscapes and the best intentions, it has not been possible to reconcile the relationship between these 'twin sisters'. Instead, they have moved further and further apart and today share very little common ground. Following an evaluation by the Trilateral Wadden Sea Cooperation, the Joint Declaration of 1982 was updated in 2010 (CWSS 2010). This is a declaration of intent concluded between the governments of Denmark, Germany and the Netherlands and the basis for their cooperation on the protection of the Wadden Sea. As a result of the LANCEWAD projects, the Joint Declaration was extended to include as an objective the maintenance of the landscape and cultural heritage. The objective applies basically to the coast beyond the Wadden Sea, which has traditionally been the object of trilateral cooperation.

Nonetheless, the definition of the geographical scope of this area of cooperation stipulates that 'activities on landscape and cultural heritage should be carried out by, or in close cooperation with, all relevant administrative levels and with support of the people living and working in the region' (CWSS 2010). This formulation in particular was included at the request of Germany, which argued that the national and state governments have no competence in this area. It can be assumed that behind this formulation there is a political concern that the landscape and cultural heritage issue could partly divert the focus from the traditional field of cooperation on nature and environmental issues. Furthermore, it could bring regional and local actors into a field of cooperation that had hitherto been dominated by the national environmental and nature conservation authorities and thus weaken the cooperation. Instead of bringing natural and landscape approaches into a common one, in a material sense, however, it reinforced the divide. The fact that the registration of the Wadden Sea on the World Heritage List for its outstanding universal natural values in 2009 coincided with the revision of the Joint Declaration likewise contributed to this divide. We contend that one of the big challenges the Wadden Sea region faces is to overcome this natural-cultural divide in the age of the Anthropocene (Steffen et al. 2011; Renn & Scherer 2015) in order to maintain a vibrant and energetic heritage enjoyed by present and future generations, and to continue

to make the Wadden Sea coast an exceptional place. Below, we argue that the superfluous divide between nature and culture in our coastal perception needs to be overcome. We refer to the effects of anthropogenic climate change on the Wadden Sea coast as a final cause for this mind shift, and we conclude with three practical recommendations of how to proceed with the integration of the natural and cultural heritage of the Wadden Sea coast.

De-constructing an old dualism

The distinction we commonly make between natural and cultural values in the Wadden Sea coast is so deeply entrenched in our mentality that we rarely reflect on it. This divide has framed our perception of nature, culture and landscape, and up to now it has determined the scientific approach, political agendas and administrative and technical practice. Should we adhere to this schism or can we move beyond it?

The old Aristotelian division between a nature that exists and develops by itself and a culture that is man-made and separated from natural processes (Glacken 1967) lives on in our distinction between natural and cultural landscape, in tensions between nature and coastal protection, and in the 'heroic' struggle of man against the remorseless North Sea. Even in protecting the values of the Wadden Sea region, nature and culture have been seen as opponents. The designation of the Wadden Sea proper as a natural World Heritage Site has regrettably contributed to reinforcing this apparent contradiction. However, this is at odds with reality and is an impediment to comprehending the whole. Do the remnants of an old well-ring or plough marks in the Wadden Sea belong to nature or to culture? Is the sinking of marshland by drainage a natural or a cultural process? How the interdependencies between sea and land have generated the Wadden Sea coast, and similarly how interdependencies between nature and culture have further transformed this *coastscape* into what it is now, are well understood, and this understanding offers the unique chance to break out of an unfortunate dualism and fictions of nature against culture and vice versa to explore the potential of new cooperation.

Through the past 8,000 years of the Wadden Sea coast, natural processes and human intentions have been tightly interwoven. In this long history, the present sharp divide into a natural waterscape and a cultural landscape is merely a snapshot. Various phases have followed each other, moved parallel with each other, or shifted out of phase in the different coastal sections as a result of natural differences as well as political and social ones. Of course,

there have always been conflicts and disasters. There can never be any sort of simple 'peace with nature'. In changing our attitude towards nature, we should refrain from simplistic concepts such as war versus peace or conquering versus submission. We, as natural and cultural beings, must always intervene in natural processes. We kill and take out and transform. However, at the same time we always cooperate with nature, even by constructing a dike with its gentle seaward slope or by mixing concrete for the foundation of a wind turbine. We even intervene when we decide to impose the strictest possible environmental protection on a site in an attempt to let nature have its own way. As concomitant natural beings and cultural actors, we remain in interaction with what we are not. Also, when we look at natural beings as mere objects or entities categorically separated from us, we create a fiction.

In some sciences, in-depth discussions have emerged about natural phenomena as 'actors', implying quite another understanding than seeing the sea as a 'cruel enemy' or animals as man-like subjects (Wirth 2016). For example, Bruno Latour's 'actor-network theory' (2005) or progress in human-animal studies imply challenges for new concepts on nature-culture interactions (Bennett 2010; McFarland & Hediger 2009; Spanring et al. 2015). This has the potential to change the scientific understanding of a wave as an 'energetic object' or of a storm as a mere acceleration in the flow of air. We have much to learn even from other cultures, as demonstrated by modern anthropologists/ethnologists like Philippe Descola (2005, 2011). A first step would be to understand our perception of nature as one of many conditioned by our history.

Clearly, we cannot go back to old historically and culturally outdated concepts of unity between nature and culture, i.e., based on animistic and nature-mystic notions. However, we must be prepared to face debates (even in science) on how to overcome the great schism in our perception between the natural environment and ourselves. The history of our Wadden landscape is virtually compelling us to take up this challenge. Nowhere else is there such an intricate interplay between natural processes and human engineering as in the development of this landscape up to now. When creating a mussel bed in the Wadden Sea, the question is not whether this bed will be artificial or natural. We need to consider why and how we want to build with nature, what are our aims, and which unintended side effects may occur. What is our justification and moral imperative? The question is not what may be technically, socially or politically feasible but rather what are the cultural implications and what are the interactions with the natural conditions.

Nowadays, the amalgamation of natural and cultural processes has reached a new dimension, caused by our scientific and technical progress.

The sedimentation patterns in the Wadden Sea are no longer entirely 'natural processes', and the population dynamics of plants and animals are all affected by human activities. Progress in protecting the cultural heritage of the Wadden Sea region can only be made by first de-constructing the old dualism of nature and culture in our mentality. This would settle old confrontations and open up new areas of cooperation. For this new era, the term Anthropocene has entered common usage.

Challenged by more water

The Anthropocene is defined as the epoch that began when human activities started changing the lithosphere, atmosphere and biosphere on a global scale (Lewis & Maslin 2015). In the new era of the Anthropocene, the radical dichotomy between nature and culture has no place anymore (Hobbs et al. 2009; Ellis et al. 2012; Corlett 2014). Of the air we inhale in 2016, 43 percent of the carbon dioxide molecules originate from industrial processes. The omnipresence of the human impact makes a mockery of the notion of protecting or restoring a pristine nature. This has gone, and history cannot be restored. Deep-rooted mentalities tend to linger on. Similarly, raising awareness of our cultural heritage cannot have as its objective a landscape museum and a ban on cultural novelties. Instead, the aims are to incorporate novelties without losing natural and cultural diversity and identity.

Global exchange and global warming, for example, constitute fundamental challenges to both the nature and culture of the Wadden Sea coast (fig. 4.2). They are in the same boat. Most importantly, the very existence of the entire region is threatened by the relentless sea level rise, which is expected to reach several metres (Bakker et al. 2017). This is an inescapable consequence of greenhouse gas emissions from burning fossil carbon and from failed land use developments. Unless adaptations are found to raise the coast in parallel with this sea level rise, the entire Wadden Sea coast will eventually cease to exist (Reise 2015).

Positioned at about the same level, the sea and the land can only co-exist in their present form if an ever-stronger system of defences is built. However, this has side effects of its own. Although for centuries the sea level hardly rose at all, tides and storm surges have begun to reach higher and higher levels. This may have to do with the modern coastal architecture of strictly separating the sea from the land. The expected sea level rise will only exacerbate this trend.

The coastal plain has been transformed from wetland to pastures and arable land by a highly advanced water management regime. Together with

Figure 4.2 Aerial view of Hallig Hooge with the island of Pellworm at the horizon. On Hooge, about 100 people live on dwelling mounds (Warften). A salt marsh area of 5.5 km² is inundated by storm surges which top a 1.2-metre-high stone revetment. Sediment accretion is now lagging behind sea level rise because of the revetment.



Photo by Karsten Reise

earthen sea walls, this constitutes the most characteristic cultural features of the Wadden Sea coast (Fig. 4.3). However, as an unwanted side effect of draining the land dry, soils have compacted and the land has subsided below the normal tidal level. A sinking land is now confronted with a rising sea. This clearly is an unsustainable development. In a situation of a rise in the sea level of several metres, stronger bulwarks alone cannot make up the difference. Inventive adaptations across the entire Wadden Sea coast need to be envisioned and discussed (Reise 2017).

Various options are now being discussed for the Wadden Sea coast (Ahlhorn 2018; Reise 2015): importing sand from the North Sea to buffer islands and to support mudflat areas to keep up with the sea level rise; raising the level of embanked areas by controlled flooding for sedimentation; stopping the draining of former fen and bog areas to avoid further greenhouse gas emissions and instead initiating carbon storage with wetland vegetation; transitioning from large-scale agriculture on dry land towards a plurality of wetland uses including aquaculture and the restoration of wetland biodiversity; and, above all, bringing the Wadden Sea region down to zero greenhouse gas emissions as soon as possible. This would set an example to save coastal lowlands all around the world from drowning in the sea.

Figure 4.3 Aerial view of former Hallig Ockholm, embanked around 1515. Some houses are still on dwelling mounds (foreground). Sönke-Nissen-Koog (upper left) was embanked in 1926 and a new dike has been fronting Ockholm Koog since 1991. Seaward, a foreland of salt marshes was claimed with brushwood groins and ditching, now discontinued to facilitate natural development. While the foreland is growing with the sea, the polder area is subsiding.



Photo by Karsten Reise

This long-term and overarching challenge requires not only the phasing out of the old dualism between nature and culture but also the coming together of various disciplines and interest groups. In concert, the diversity and identity of the Wadden Sea coast could be revitalised in order to cope with the challenges of the Anthropocene. Although the sea level rise might be the most dramatic challenge to the Wadden Sea coast, other aspects of climate change will threaten the ecology of the Wadden Sea as well as prospects for fisheries, agriculture and tourism. The continuing relocation of businesses, infrastructure, education and jobs to the metropolitan areas — with the concomitant drain of the peripheral regions of the coast, including extreme demographic changes — will also require comprehensive solutions.

Strategic-political implications

People have struggled hard to mould the Wadden Sea coast to their desires in an often contentious relationship. There is probably no other coastal area of this dimension worldwide where the dialectical relationship between man and his natural environment has been and will continue to be so dynamic. In the past, this resulted in a continuous reformulation of balances and shifts in the political-strategic concepts, as is apparent from the historical mind shift from the doctrine of claiming/reclaiming land for more food production to the nomination of the Wadden Sea as a World Heritage Site. The concept of the Anthropocene will demand an even more fundamental rethink. This cannot be confined to climate change. All sectors of our natural and cultural environment require an overall dynamic shift in strategic concepts.

What are the strategic-political implications of all this? It has nothing to do with the dispute on whether the natural Wadden Sea World Heritage object should also be labelled a cultural landscape because remnants of medieval settlements are found on the tidal flats or because the current coastline is largely part of intended human interference or because natural values spared in the cultural landscape require large-scale re-naturalisation. This has nothing to do with bridging the divide. The implications go far beyond this contemporary instrumental thinking of using one heritage to complement the other.

We argue for a paradigm shift. We call for an integration of the protection of natural and cultural values. We need to continuously rethink the relationship between the natural and cultural landscape values of the Wadden Sea region because of their interdependencies. As pointed out earlier, the aim is to maintain a vibrant and energetic heritage that can be enjoyed by future generations and that continues to make the Wadden Sea coast an exceptional place. We need to develop new scientific approaches, new community involvement and new policy strategies to integrate natural and cultural values into a common heritage.

Recommendations

First, we need to develop a more fundamental interdisciplinary scientific approach between the natural sciences disciplines and human-related sciences such as history, archaeology and historical geography. The goal should be to enhance research into the landscape and cultural heritage and the relationship between the natural and cultural landscape heritage.

This should not be confined to the issue of protecting and managing the heritage but, more importantly, should include the issue of contributing to a constructive and future-oriented societal discourse. We should explore such possibilities for collaboration between the different disciplines and also initiate research into the environmental history of the Wadden Sea coast.

Second, we urge the landscape and cultural heritage community to engage with the society at large in discussing and developing ideas and concepts for the Wadden Sea coast in these areas. This should be done by reinforcing existing or establishing new and transboundary fora and improving public information. For the natural environment of the transboundary Wadden Sea, the collaboration between governmental institutions and nongovernmental organisations including natural scientists have been a great success. We realise that such initiatives cannot be duplicated in other areas, but let them serve as an inspiration. We are convinced that this will accelerate the debate around bridging the divide and produce appropriate and necessary societal and democratically legitimised political answers.

Third, the current legal and institutional systems impede on all levels the development of new responses to protect the natural and cultural values in an integrated way. We therefore need to develop a new vision for the Wadden Sea coast in a transboundary context on how to bridge the divide between nature and culture and respond to anticipated environmental, social and economic developments in an attempt to maintain a diverse Wadden 'coastscape'.

The development of such a vision should be interdisciplinary and cover all sectors. It should also engage the existing Trilateral Wadden Sea Cooperation, which is the only existing formalised transboundary cooperation along the coast. Part of this process involves first deconstructing the old dualism of nature and culture in our mentality. This would settle old confrontations and open up new avenues of cooperation, which are needed to respond with a flexible strategy to the challenges of closing the divide. The parties involved must also be open to applying existing and new instruments and approaches. Having part of the cultural landscape of the Wadden Sea region inscribed on the World Heritage List alongside the natural landscape would allow the natural and cultural landscape partners to operate at an equal level. This would stimulate and further cooperation between various disciplines and encourage new political initiatives. A new narrative of the Wadden Sea coast would then unfold.

We have entitled our contribution 'An urgent call for integration': 'urgent' in the light of the challenges, and 'call' because it concerns all people living or visiting the Wadden Sea coast. The challenges of the Anthropocene — with

sprawling urbanisation along seashores, with still more material and cultural exchange across oceans, with more refugees to be accommodated among us, with a rising sea potentially inundating the entire Waddenland — are challenges that cannot be met with conventional concepts. The situation we face requires a stronger coastal identity with all its diversity that engages in an open contest of innovative ideas and approaches, based on a solid historical understanding and the maintenance of our heritage. Above all, let's bridge the divide between nature and culture first.

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