

WADDEN SEA ECOSYSTEM No. 26

**Quality Status Report 2009
Thematic Report No. 2**

Landscape and Cultural Heritage

Meindert Schroor

Joachim Kühn

Nigel Brown

Jens Enemark

Manfred Vollmer

**2009
Common Wadden Sea Secretariat
Trilateral Monitoring and Assessment Group**

Colophon

Publisher

Common Wadden Sea Secretariat (CWSS), Wilhelmshaven, Germany;
Trilateral Monitoring and Assessment Group (TMAG).

Editors

Harald Marencic, Common Wadden Sea Secretariat (CWSS)
Virchowstr. 1, D - 26382 Wilhelmshaven, Germany

Jaap de Vlas, Rijkswaterstaat, Waterdienst
Lelystad, The Netherlands

Language support

Marijke Polanski

Lay-out and technical editing

Common Wadden Sea Secretariat

Graphic support

Gerold Lüerßen

Published

2009

ISSN 0946-896X

This publication should be cited as:

Schroor, M., Kühn, J., Brown, N., Enemark, J., Vollmer, M., 2009. Landscape and Culture. Thematic Report No. 2. In: Marencic, H. & Vlas, J. de (Eds), 2009. Quality Status Report 2009. WaddenSea Ecosystem No. 26. Common Wadden Sea Secretariat, Trilateral Monitoring and Assessment Group, Wilhelmshaven, Germany.

1. Historic Development and Characterization

1. Historic development and characteristics of the cultural heritage in the Wadden Sea Region

1.1 Development and cultural history of the tidal Wadden Sea area

The Wadden Sea is the most dynamic natural landscape of Western Europe. The sea, its islands and coastal surroundings together form an ever shifting 'monument' of topographical changes. As a consequence, the history of the Wadden Sea is a fine example of man coping with his environment, by trial and error as well as by expansion and contraction. Socio-economically it is a good example of a society based both on agriculture and maritime activities (sailing, fishing, salvage and reclamation). Large parts of what is now land were sea about 1,000 years ago and vice versa. The Marne-estuary (south of Harlingen), the Middlesea-inlet with It Bildt, the inlets and former estuaries of rivers like the Lauwers, the Hunze and the Fivel were all part of the Wadden Sea and have since been reclaimed. The same goes for the bays and gulfs of Campen, Sielmönken, Harle and Maade in East-Frisia and Oldenburg (both in Lower Saxony).

Prehistoric and Medieval Times

At the end of the last Ice Age, the Wadden Sea area was dryland, with the coast located to the west of the present Dogger Bank. Finds recovered during dredging or fishing in this marine environment have established that the area hosted large herds of animals and bands of hunter-gatherers. However, as sea-levels rose the inhabitants must have retreated back to the current shoreline. There are undoubtedly Palaeolithic and Mesolithic sites under the present Wadden Sea, buried beneath many metres of sediment.

There is more information for the Neolithic period. For example, many finds have been recovered from the Wadden Sea Area between the Eiderstedt peninsula and the island of Föhr, including late Neolithic and early Bronze Age flint daggers and flint sickles. These, prove the presence of people in this area in the late 3rd and early 2nd millennium BC, and probably even human settlement. Some undisturbed sites have also provided information about the surface level of the marsh 4,000 years ago. Middle Neolithic finds are often recovered on the coasts of Fanø. The finds must originate from submerged hunting camps and are washed ashore. The most outstanding find is a stylised bear

made of amber. Today the level is 1.50 m below sea level (NN), but the spatially varying subsidence of glacial sediments must be taken into account. So far, there are no artefacts from the following periods, the late Bronze Age and the pre-Roman Iron Age, from the northern coastal marshes. Finds of the 2nd to 5th century AD have been recovered from an area between the Japsand west of the Hallig island of Hooge and the island of Pellworm demonstrating that by the 2nd century A. D. people had returned to the southern parts of the Wadden Sea Area of North Frisia. In Roman times a large part of the Wadden Sea south of an imaginary line between Texel and Zurich (Friesland) were in fact raised bogs fringed by a rather narrow belt of marshland.

There appears to have been a general abandonment of settlements across the region during the late Roman Iron Age and the Migration period, probably due to rising sea-levels and storm-tides in the 4th century. Settlement recommences in the 7th or 8th centuries, often in areas that had been previously favoured as settlement sites in the Roman Iron Age. However, these settlements were always vulnerable to storm-tides, of which the most famous and best recorded is probably the Grote Mandränke or 'Great Drowning' of 1362 which devastated the entire Wadden Sea region, submerging villages and islands and re-modelling the entire coastline.

As a remnant of a partly drowned landscape, archaeological traces of former settlements can be found or are historically documented throughout the Wadden Sea. Visible fragments of human occupation like the remnants of drowned villages, houses and farms may be found in the Jadebusen, but also off the mainland coast near Neuharlingersiel (Otzum, Ostbensum), off the Westermarsch (Itzendorf) and off Land Wursten (Rintzeln and Reminzeln).

Other remains, although mostly washed away or submerged, may be assumed elsewhere, especially off Texel and Wieringen (Balgzand), near the small island of Griend, off the north-coast of Fryslân (villages like Biniathorp and Dikesherne are historically documented near Harlingen) and most of all in the Dollard. Reclamation has led to the excavation of traces of occupation on the mainland around former coastlines. They all need to be documented and protected.

km long was completed in 1927-1932 and joins the coasts of the former island of Wieringen and Friesland. The Zuyder Zee was enclosed and shut off from its northern part with this great enclosure dike. The former mouth of the Zuyder Zee is now the subtidal western part of the Dutch Wadden Sea.

In the northern half of the Wadden Sea, the coastal dwellers of Dithmarschen proved to be as successful in the reclamation of new polders during early modern times as they had been in the Middle Ages. In North Frisia, however, it proved impossible to reclaim all the coastal land that had been cultivated during the Middle Ages. Archaeological finds show that during the 16th and early 17th century those areas which succeeded in empoldering at least parts of the coastal marshes gained in prosperity. The increase in affluence was, however, short-lived and as early as the 1st half of the 17th century storm-floods wreaked havoc again and caused significant losses of land. In particular the central part of the densely populated island of Strand was permanently lost and nothing but the islands of Pellworm and Nordstrand as well as the Hallig island of Nordstrandischmoor remained (see also the cultural entity descriptions of the Islands and Hallig islands).

The extent of land loss cannot only be traced through archaeological remains of settlements, dykes and cultivated land which are still found in the Wadden Sea, but also through the comparison of comparatively detailed maps of the late 16th and especially of the 1st half of the 17th century (J. Mejer, P. Sax, Q. C. Indervelden, J. Behrends, J. Wittemak) with modern topography.

The mobile evidence for human activities, such as maritime conflict and trade, in the form of ship-wrecks, have been found near the entrances to the Wadden Sea. Medieval and Early Modern water routes and harbour sites deserve special attention. The greatest number of historical wrecks has been recorded alongside the sailing routes in the west, to historical ports around the former Zuyder Zee like Amsterdam, Kampen, Enkhuizen, Hoorn, Stavoren and Harlingen. Some areas are especially promising e.g. the Texel Roads and the Vlie Roads (Vliere). Because of the number of shipwrecks that have been traced (of Dutch East-Indiamen, medieval cogs and other merchantmen) the western part of the Dutch Wadden Sea was put on the Tentative List of World Heritage Sites. Apart from light-houses, buoyage and other maritime marks which derive their existence from daily sailing practices are mostly short-lived. The same applies to fishing-gear and fishing-grounds

which are usually movable (e.g. hooks, bow-nets) and more or less constantly shifting (e.g. mussel-beds, eelgrass). Old fishermen's houses, harbours, museums, monuments and fishing-boats however can be found everywhere along the mainland and island coasts of the Wadden Sea. The same applies to maritime activities like pilotage and salvage. The buoyage-shed (tonnenloods) at the harbour in West-Terschelling, which is a centre of pilotage and used to be a salvage station (e.g. museum tugboat Holland) is a good example of the strong ties between the inhabitants of the area and the sea.

1.2 Development of the cultural landscape and heritage of the mainland and islands in the Wadden Sea Region

The landscape of the Wadden Sea region has developed since the end of the last Ice Age due to the repeated erosion of moraines and sand deposits and subsequent sedimentation by the rising sea. This created repeatedly flooded bog and marsh areas, intersected by tidal inlets and repeatedly flooded. The islands of the Wadden Sea off the coast of Denmark and Schleswig-Holstein in part owe their origins to these glacial deposits against which sand dunes have formed, whereas the Dutch and East Frisian islands are essentially a dissected sand barrier. The dunes are extensive and can reach considerable heights. The highest dune top, on Vlieland, is 40m above sea level. The prevailing pattern of winds and currents generally lead to erosion on the western sides and deposition on the eastern side. In a number of instances this has led to a general tendency for the islands to shift eastward. At the same time there is some shift in the direction of the mainland coast, due to erosion at the North Sea side and sedimentation at the Wadden Sea side. An overview of the geomorphological changes during the last 2000 years is given in the QSR 2009 thematic report on geomorphology.

For thousands of years the Wadden Sea itself has played a central role in the life of the people of the region. Changing sea levels mean that areas that were once dry land are now within the intertidal zone, and erosion may reveal ship wrecks and remains of human occupation from the Neolithic onwards. They are often particularly well preserved.

Whilst there are a number of finds of Palaeolithic flint tools from the region, these are largely in secondary contexts having been redeposited by movement of ice sheets. The earliest substantial

Figure 2:
Ockholmer Koog and
Sönke-Nissen-Koog (Photo:
Archäologisches Landesamt
Schleswig-Holstein)



indications of human habitation in the Wadden Sea date from the Mesolithic. In the Danish area of the Wadden Sea, Mesolithic settlement, of more than 8,000 years ago, consists of campsites along streams, with more permanent settlements located at the former coastline, now submerged by the sea. There is widespread evidence of Neolithic settlement. For instance, de Kop van Noord Holland has particularly significant Neolithic settlement remains. In a number of locations, monuments were built on the higher moraine islands like Texel that always remained dry. There are megalithic tombs at a number of locations in Schleswig-Holstein. Similar tombs existed in Lower Saxony Most of them have been destroyed but a few examples have survived for example at Tannenhausen in Auricherland. A move to expand the useable land seems to have occurred during the later Neolithic. For instance in Lower Saxony, finds from this period have been made in areas which had not been previously exploited, such as the edges of the marshes, river valleys and fenland. A bog track leads from Tannenhausen in the direction of the Ewiges Meer in the district of Wittmund. Numerous remains of wagons provide evidence for vehicle traffic at that time.

Parts of the Danish area of the Wadden Sea region appear to have been permanently occupied from the Neolithic period on with scattered single farms on the Geest. In this area the combination of cattle farming in the marshlands and grain-growing on the Geest can be dated back to the Bronze Age 3,000 years ago. There are dense concentrations of settlements following the Geest edges, and numerous burial mounds from this period. Iron Age settlements are also widespread. It is perhaps in this Danish area that the nature of prehistoric

settlement may be most easily appreciated by visitors. In Marbæk Plantage (plantation) there are two protected Iron Age dwellings where remains of the houses and paving can still be seen, and large protected field systems, called Celtic fields, from the same period. In a small heath land area north of Hjerting is a group of more than 15 protected burial mounds. Around Esbjerg a range of historic dwellings have been excavated, which show the whole development of settlements from the Neolithic to the Middle Ages.

Elsewhere, continuity of settlement can also be demonstrated, for instance on the island of Texel. Occupation appears to have been continuous there since the Middle Bronze Age, but in a number of other places there are clear discontinuities in settlement patterns. For instance on Sylt there is a multitude of extant single mounds and mound cemeteries dating from the Bronze Age to Viking Age. However, settlement seemed to cease for a while in the 5th and 6th century AD, an absence usually ascribed to migration to Britain. During the Viking Age, the island was inhabited again, presumably by Frisians from the western Wadden Sea This period is represented by cemeteries with large numbers of mounds as at Morsum Kliff. To the south in Halligen settlement is demonstrated by a number of finds dating to the late Neolithic, around 2300 BC. However, continuity of settlement on the islands can only be demonstrated from the Viking Age.

In the Carolingian and Viking periods the Dutch Frisian islands saw significant settlement. Den Burg on Texel may be a fortress of Viking origin and a Viking Age trading centre or emporium existed on Wieringen. Similarly, there are a number of significant fortifications such as the circular

earthen rampart of the Tinnumburg, a fortified Viking Age settlement on Sylt, and the Bökelburg in Süderdithmarschen which is a circular embankment on the very fringe of the high Geest. It was designed as a fortification for the northern part of the Dithmarschen in the 9th century, when it was part of the empire of Charlemagne. In the Danish area, until the 11th century AD the villages were often moved, but from the beginning of the Middle Ages most of the villages settled at a permanent location.

The fertile marshlands were important to the economic prosperity of the Wadden Sea, and sea born contacts to the west European area can be traced back to the early Iron Age. A settlement at Dankirke near Vester Vedsted probably played a central role in the trading of luxury goods from first the Roman and later the Frankish area. In burials of the 7th and 8th centuries AD, objects imported from the Saxon-Frisian and Anglo-Saxon area have been recovered.

Human occupation and the need for protection against flooding have always been closely linked in the Wadden Sea, and the need to manage flood risk has strongly influenced the form and nature of settlement. The earliest settlements were on the relatively high Geest, in areas protected by dunes and on the highest salt marshes. Settlement of the marshland began in some places during the Iron Age, but much later in other areas for instance during the Roman Iron Age in Norderdithmarschen. Dwelling mounds are one of the most characteristic settlement forms of the Wadden Sea and occur very widely. There are many examples in the Netherlands, including the well known excavated example at Ezinge. However, during the later 19th and early 20th century, the mounds in the Netherlands suffered severely from systematic removal of their fertile soil for the improvement of poor soils elsewhere. Dwelling mounds are also widespread in Lower Saxony, of which the most famous one is the excavated mound of Feddersen Wierde.

The first settlements on the high salt marshes were without mounds, but rising sea levels made such locations and other low-lying areas vulnerable to flooding. Mounds were to be constructed as a response to the increased threat of flooding. In some places these mounds began to be constructed at the end of the 1st millennium BC and continued through the Roman Iron Age and into the early medieval period. The dwelling mounds, often constructed along tidal inlets or on higher marshes, vary considerably in size from single farms to entire villages. They are characteristic

of the marshland and their distribution is often highly distinctive. For example in Wangerland, the mounds are aligned along the oldest areas of firm marsh land marking the fringes of the oldest settlement areas. In Schleswig-Holstein, dwelling mounds are again a highly characteristic feature. They are rather later in origin than those in the Netherlands and Lower Saxony, often occurring in rows of medieval dwelling mounds with adjacent elongated strips of land, intersected by parallel drainage ditches. In Lower Saxony and Schleswig Holstein, the mounds have not suffered the same degree of systematic destruction as in the Netherlands. Dwelling mounds also occur in the Danish part of the Wadden Sea, and include the very large mound village of Ubjerg, the most northerly Frisian settlement in the Wadden Sea.

Mound construction was essentially a means of avoiding flooding driven by rising sea levels. The construction of dykes, also driven by the need to manage flood risk, and often closely related to mound construction, began on a small scale during the Roman period in the Netherlands. Large scale dike construction began in the 11th century AD. In the Netherlands and elsewhere, the first examples were ring dikes. Such dikes are particularly numerous in Westergo. Later linear dikes, such as the long dike parallel to the coast in Süderdithmarschen, were built along the until then unprotected coast, or as extensions of the already existing ring dikes, until they linked up, as in the case of Altdeich which enclosed the whole of Wangerland. Dikes and former dikes are common and distinctive features of the Wadden Sea, the old dikes sometimes now being used as tracks and roads. The progressive construction of dikes made dwelling mounds less essential. Settlement migrated or new settlements were constructed, focussed on the dikes, or outfall sluices where a number of harbours developed. This resulted in distinctive forms of settlement; examples include the landscape of right-angle roads and drainage systems, linear villages and embankment-hedges, of Overledingen, the well preserved Aufstrecksettlements (farms, strung together, one after the other, on the flat embankments used for settlement) which were intended to secure the edge of the moorland in Brookmeland, and linear settlements, starting in the 12th/13th century on the north and east edge of the Ahlenmoor, from which the moor was cultivated by turf-cutting.

In general, the fields are closely related to settlements and often reflect changes in flood defence and land reclamation. On Texel, Terschelling and Ameland, early fields tended to be

small and irregular. In a number of instances such as on Wieringen and the higher parts of Texel, where water filled ditches were not practical, field boundaries were constructed of sod banks. Similarly, there are often clear differences in settlement and land use between the higher Geest areas and lower marshland. In Wangerland, the Jever Geest with its fens, birch trees, bank hedges and tree-lined roads contrasts with the wide-open sparsely-wooded marsh landscape. Settlements often reflect successive changes in flood defence and land reclamation. Embankment hedges are characteristic features of Geest areas in Lower Saxony. In other areas, the distinction between Geest and marsh is equally distinct but quite different; in Overledinger, agriculture is concentrated on the marshes along the banks of the rivers Leda and Jümme, and the poorly drained, less fertile Geest-ridge with its bog-areas is mainly used for peat digging. This is just one example of a particular type of field system within the Wadden Sea region. The origins, history and purpose of fields and their boundaries are often complex and vary considerably throughout the region, but wherever they occur and in whatever form they are important elements of the cultural heritage and a critical part of the historic landscape character.

The successive changes in flood defence and land reclamation are often reflected in the fields. Within the marsh areas themselves there is often a clear distinction between the older marshland, which tends to have small irregular fields defined by drainage ditches oriented along irregular former tidal streams, and more modern polder constructions that were designed with an enhanced drainage system in mind, and often included the straightening of former tidal inlets and digging of new canals. Consequently the more recently reclaimed areas have more rectilinear field systems, such as the organised strip fields of the Grodenmarsch region, or the large rectilinear fields of the polders in Overledingen, and Rheiderland. This organised pattern of large rectilinear fields also characterises the extensive polders of the Dutch part of the Wadden Sea. For example polders were constructed at the islands of Texel, Terschelling, Ameland, Schiermonnikoog as well as along the mainland coast, and fields were larger and more rectilinear in form. In the first half of the 20th century, extensive reorganisation of the field systems and land re-allotment swept away much of the earlier pattern of fields on the Dutch Frisian islands and mainland and many of the traditional sod bank boundaries were destroyed in the process. Most areas of polders have different patterns

of drainage ditches and other features reflecting the chronology of reclamation. For instance, there are differences in the Tønder Marshlands, in Denmark, between the outer and inner polders. The outer polders are divided by (former) sea dikes and dikes along the large streams (Vidåen) into polders of different ages. The regular pattern of dense drainage and watering ditches, divides the marsh into rectangular fenlands. The inner polders delimited by a sea dike of 1556, are characterised by embanked areas, and many medieval dwelling mounds and stream dikes are also important elements. During 1750-1850 a land reform movement was active in Denmark, part of which was the promotion of "Enclosure", which aimed to merge all plots into consolidated land holdings. This caused some damage to the old patterns of field divisions, but not to the same degree as in many other places in Denmark.

In Schleswig-Holstein, the more recent polders, like those in Nordergosharde are characterised by rectilinear and large-scale fields. In Wiedingharde, roads, drainage canals and fields are more rectilinear and large-scale in the south-east and have a totally straight and planned appearance in the far western polder. By contrast, fields in the old polders are irregular, small scale and intersected by sinuous ditches. Polders in Norderdithmarschen still reflect the original landscape with many irregular tidal inlets. In the 20th century agricultural changes have continued with the creation of larger fields driven by the Common Agricultural Policy and in Schleswig-Holstein, vast interventions in connection with the "Programm Nord" have taken place since the 1960s.

Woodland is not particularly characteristic of the Wadden Sea, but there are exceptions. In the Friesische Wehde, there were formally extensive forests. However, intensive exploitation for timber led to deforestation although some fragments still survive. In other places particularly the Dutch Wadden Sea islands, woodland has been planted for commercial exploitation and dune stabilisation. Planting took place on Ameland in the late 19th century, but most planting was undertaken in the early 20th century on the islands of Texel, Vlieland, Terschelling and Ameland.

A particularly characteristic feature of the Wadden Sea landscape, are duck decoy ponds used for the trapping of waterfowl. Such ponds are widespread in the Dutch part of the Wadden Sea. They were introduced there during the 16th century and subsequently spread to other North Sea countries. Today they are common in many parts of the Wadden Sea in the Netherlands and



Figure 3:
Roter Haubarg (Photo:
Archäologisches Landesamt
Schleswig-Holstein)

Germany. In Denmark, they are scarce, and present on Fanø only.

The farms of the Wadden Sea region are often particularly distinctive, for instance, areas like Oldambt have many large farms with fine gardens. Many of the farms within the region are characterised by a variety of distinctive vernacular buildings. These include farmhouses with pyramid-shaped roofs, the so called 'cloche' farmhouses (*stolpboerderij*) in the Kop van Holland and Wieringen, the 'Gulf House' the "Kübbing"-houses of Krummhörn the Niederdeutsche Hallenhaus (lower German hall house) or Niedersachsenhaus (Lower Saxony house) of Land Wursten, and the four post halls of Land Würden.

Whilst the traditional economy of most of the Wadden Sea region was farming, the economic importance of the sea itself cannot be overestimated. On the islands fishing, whaling and other maritime activities were economically dominant during the 18th century. On the Dutch Frisian islands, the supply of ships with provisions and water as they waited in sheltered anchorages in the lee of the islands was a significant part of the economy. The importance of seafaring to the Wadden Sea and the treacherous nature of the sand flats and navigable channels means that structures relating to navigation are widespread. Lighthouses are a particular feature of the Frisian islands. Terschelling has the oldest surviving lighthouse in the Netherlands and the island has played a significant role in nautical history. As late as 1874 most of the mariners in the Dutch merchant navy came from Terschelling, a major naval college was established there in 1875 and institutions based on the island still have a significant role in ensuring safe navigation of the Wadden Sea.

Sea born trade was important from at least the middle of the 1st millennium AD, (and may well have been so from later prehistory). Such was the importance of water born trade and transport that harbours and wharfs were widespread. Many of the dwelling mounds had such facilities and harbours developed around sluices in sea dikes. In the Viking period, Ribe, the oldest town in Denmark, was one of the foremost trading centres in southern Scandinavia. During the medieval period, many towns including Tønder, Husum, and Meldorf were active trading ports. The Wadden Sea was a stronghold of the Hanseatic League with the Weser and the Elbe, providing access to the great trading towns of Bremen and Hamburg. The importance of ports in the region was not only linked to trade but also to military activity. The city of Den Helder lies at the southern most point of the Wadden Sea region, the town was a major naval base from the late 18th century and has a series of historic defenses from the Napoleonic period onward. Ports were developed at a number of coastal locations in the 19th century including Glückstadt, and Esbjerg, and a major naval base was created at Wilhelmshaven, now somewhat in decline and seeking opportunities for regeneration.

The mouths of the Weser and Elbe have been much altered particularly during the 19th and 20th centuries to facilitate their role as major transport routes. By contrast the Varde Stream Estuary in Denmark is the best example in the entire Wadden Sea region of a non-embanked river mouth where the marsh processes are still ongoing. Numerous watercourses both natural and manmade were for centuries the main means of transportation. Although water transport is now largely superseded by road transport, the road and rail network

2. Potentials and Vulnerabilities

The variety and diversity of the cultural heritage reflects the historical interaction of human activity and a changing natural environment. The cultural heritage is a central resource for modern life. It has a powerful influence on peoples' sense of identity and civic pride. Its enduring physical presence contributes significantly to the character and 'sense of place' of rural and urban environments. In the Wadden Sea, this resource is rich, complex and irreplaceable; it has great potential both with regard to its intrinsic worth and its role in economic development. As a critical aspect of the region's environmental infrastructure the cultural heritage has a major role to play in the future of the Wadden Sea.

The fundamental and most valuable potential is the variety of cultural landscapes and heritage. The individual monuments, sites and other cultural elements are each intrinsically significant, but added value is provided by their interrelationships and context in space and time. This creates cultural ensembles or cultural environments of greater value than a number of unrelated or poorly integrated individual sites or elements.

Conservation of biodiversity provides significant cultural and social benefits for the Wadden Sea Region. The maintenance of high biodiversity value will often require the maintenance of a rich diversity in the cultural landscape. Conservation and enhancement of the natural and cultural landscape can thus be a symbiotic process which can be used to enhance people's appreciation of the region as a place to live and work in or to visit. However, in order to achieve the full benefits of this potential and minimise conflicts of interest, it is necessary to have an integrated approach to the natural and cultural heritage.

A sound awareness among the local people, stakeholders and politicians about cultural heritage values in the region is vital for the preservation, development and sustainable use of the heritage. Awareness and understanding is a precondition for managing development in a sustainable fashion, which values the heritage, and which will create a strong sense of place for local people and visitors. Closely linked to this are access and cultural tourism. Easy and appropriate accessibility is a precondition for further development of cultural tourism, which is an important economic factor in the rural area of the Wadden Sea Region. Good accessibility to cultural environments and ensembles through foot paths or cycling routes, especially if these are historic route ways, can in itself enhance awareness. This could be further developed through education and train-

ing programs. Furthermore, accessibility which is sustainable maintains the cultural heritage and landscape, enhancing people's sense of place and making the area a desirable place to live. Cultural tourism, developed in respect to the assets and treasures of our cultural heritage, can and should be a major contribution to the conservation of the cultural heritage and the economic wellbeing of the region. The openness of the landscape, the significance of historic settlements and trade, characteristic agricultural features, the remains of the different ways people have coped with and defended themselves from the threat of flooding, together with other sites and activities traditional to the region, are all attractive to visitors.

However, the cultural heritage is sensitive to change, and in the Wadden Sea Region it is under pressure from structural changes, often driven by issues at national, European or even global level, leading to rapid transformation. The pressures are mainly caused by economic development across all relevant sectors but also by changes in the natural environment, notably sea-level rise and global warming. Careful consideration is required as change is planned in order to ensure that the cultural heritage can be part of a sustainable future for the Wadden Sea Region.

Farming in the EU has evolved into a high-tech industry employing less than 5% of the population. When the common agricultural policy (CAP) was introduced, the aim was to increase food production, and support schemes were established to achieve this. The aims of the CAP together with the resulting industrialisation of agriculture could threaten the diversity of cultural landscapes, the accessibility to valuable landscapes and the conservation of unique heritage elements. Whilst this is still a matter of concern, a recent trend to move from payments subsidising production to payment for environmental stewardship offers an opportunity to develop enhanced conservation of, and access, to cultural heritage and landscapes.

In order to maintain the area as a place that people wish to live in with a viable economy, modern facilities including housing and adequate transport infrastructure are necessary. This inevitably requires development in and around towns and villages leading to potentially adverse impacts on the cultural landscape and heritage. Impacts may affect particular sites and locations, but there may also be a cumulative affect on valuable ensembles and cultural environments. Only well informed and carefully considered spatial and physical planning can secure the cultural heritage values while meeting the needs

of new settlement and industrial areas as well as of the related infrastructure. Accordingly spatial planning has a central role in balancing these competing claims and delivering necessary change in a sustainable manner.

Population change, although less obvious than physical change, is nonetheless important in its effects on the cultural heritage. Demography and other social parameters such as unemployment rates, housing markets and mobility and patterns of commuting have effects on the cultural heritage and its maintenance. Living conditions change due to migration to and from rural areas like the Wadden Sea Region and influence the need for infrastructure. A declining population level in the region could threaten the local quality of life (liveability), sense of belonging, awareness of, and care for, the cultural values.

Energy development plays an important role in the Wadden Sea Region. The strategy of developing the region as a hub for renewable energy production such as wind and solar generated energy in particular will tremendously effect the cultural landscape and its perception. Energy production parks are large scale constructions with effects on space, landscape structures, openness and the cultural heritage. As such, here again careful planning will be particularly important.

In many ways spatial planning is the most important instrument to conserve and enhance cultural heritage and landscape values. Planning is also a central instrument for a sustainable use of the heritage integrated with the various economic requirements for regional development. A vulnerability in this respect is that the valuable cultural issues are not deeply integrated on the legal and management level; a comprehensive consideration of the cultural landscape heritage in physical planning is not guaranteed. The cultural entities may prove particularly valuable in addressing this issue as a means of engagement with planners and oth-

ers, and as a means of moving from a site-based to a character-based approach in strategic planning for the cultural heritage.

Future Directions

The cultural entities have been created and described primarily to serve as a tool to enhance understanding, conservation and management of the cultural heritage in general and landscapes in particular. They reveal the scale, diversity and value of the cultural heritage of the Wadden Sea region.

The characterisation provided by the cultural entities can provide the starting point for more effective incorporation of cultural heritage within spatial planning and for better integration of nature conservation and heritage conservation. The cultural entities will allow planners, with appropriate support and advice from specialists, to integrate the protection, promotion and management of the cultural heritage into spatial plans. In this regard their greatest advantage is that they enable a move away from a site-based approach to the cultural heritage. Given the complexity of the cultural heritage and the importance of cultural ensembles, a more holistic, character-based approach, can be more effective, particularly in highlighting the need for communication and co-ordination between appropriate services. In addition to use, by professionals, the cultural entities may provide a means of engaging the wider public with understanding and conserving the cultural heritage.

As a matter of principle, it may be suggested that environmental protection and enhancement, valuing natural and historic assets and ensuring change, is sustainable. The cultural entities can play a role in putting that principle into effect as they provide a strategic overview of the cultural heritage of the Wadden Sea region. Set out below are suggested general ways in which they could be used and developed.

3. Managing landscape and cultural heritage



Figure 4:
Ballum Vesterende, DK
(Photo: Svend Tougaard)

3. Managing the landscape and cultural heritage: the overarching approach

The management of the cultural and landscape heritage of the Wadden Sea Region is a complex issue. In the following section targets are identified for the preservation and conservation of the historic landscape and the primary management principles described. Vision 2020 which states the importance of the characteristics and cultural history of the Wadden Sea Region is restated. Following on from this, a range of strategies are presented and potential obstacles identified. Policies are also identified which will provide guidance on how the cultural heritage should be integrated into existing planning and conservation documents and strategies. Finally a number of projects are outlined which will address specific issues to promote the cultural heritage of the Wadden Sea area.

Managing our Cultural and Landscape Heritage

Spatial planning is the most important tool for the conservation and enhancement of cultural heritage and landscape values. Planning is also a central instrument for a sustainable use of the heritage integrated with the various economic requirements for regional development. A vulnerability in this respect is that the valuable cultural issues are not deeply integrated at the legal and management level, and a comprehensive consideration of the cultural landscape heritage in physical planning is therefore not guaranteed. The cultural entities may prove particularly valuable in addressing this issue as a means of engagement with planners and others, and as a means

of moving from a site-based to a character-based approach in strategic planning for the cultural heritage.

Monitoring has become - in all environment relevant planning procedures - an important means of assessing the outcome and effectiveness of decided measures. The application of monitoring techniques on issues concerning the cultural landscape in the Wadden Sea Region is however still not widely spread, and therefore shortcomings in actual planning procedures are not sufficiently reflected, discussed and eliminated.

Points of Departure

Targets for the landscape and cultural heritage were adopted at the 7th Ministerial Conference on the Protection of the Wadden Sea held in Leeuwarden in 1994 (Leeuwarden Declaration) and implemented in common policies and projects within the Wadden Sea Plan adopted at the 1997 State Conference. These were complemented with management principles adopted at the 9th Ministerial Conference held in Esbjerg in 2001 (Esbjerg Declaration). These Targets and Management Principles remain the starting points for the trilateral approach on the landscape and cultural heritage of the Wadden Sea Region.

Targets Landscape and Culture (Leeuwarden 1994/Wadden Sea Plan 1997)

- To preserve, restore and develop the elements that contribute to the character, or identity, of the landscape. (*Identity*)
- To maintain the full variety of cultural landscapes, typical of the Wadden Sea landscape. (*Variety*)
- To conserve the cultural-historic heritage. (*History*)

- To pay special attention to the environmental perception of the landscape and the cultural-historic contributions in the context of management and planning. (*Scenery*)

Management Principles (Esbjerg 2001)

- Managed development of the heritage.
- Use of the landscape and cultural heritage as an opportunity.
- Involvement of stakeholders in the management.
- Integration of policy and management of the natural and cultural environment.
- Enhancement of the awareness of the landscape and cultural heritage.

3.1 Vision 2020

Within the Lancewad project a vision has been stated, in image-terms to inspire the long-term protection by development of the landscape and cultural heritage of the Wadden Sea Region:

"For more than 2000 years, the landscape and cultural heritage of the Wadden Sea Region has displayed the richness of the specific nature of the Wadden Sea and the unique interaction with man to its full extent. The overall landscape characteristics entail the wide open skies, the straight horizons, the clear transition between sea and land, the notion of being engulfed by nature on the seaside; and on the landside, the dwelling mounds, dykes and the settlements as green oases in the open fields. In the inhabited areas, the different characteristics of the landscape and cultural heritage of the several sub-regions can be clearly distinguished. The cultural heritage is well kept and (re)used. New developments show new faces into the "old portraits" enriching them and telling the continuing story of living in the Wadden Sea Region, a landscape of world-uniqueness.

The vision can be translated into the following process-terms:

(1) Preserve the identity, variety, history and the scenery of the landscape and cultural heritage of the Wadden Sea Region as a coherent heritage which will be reflected as a common responsibility of the appropriate authorities of the three countries.

(2) Manage and use the landscape and cultural heritage of the Wadden Sea Region in a sustainable way, as one coherent natural and cultural landscape heritage in a land-sea interface in respect of the specific facets of each of the landscape types by making it an integrated part of coastal management.

(3) Enhance the awareness of the unique landscape and cultural heritage of the Wadden Sea Region, supporting the targets of the trilateral Wadden Sea cooperation, and making use of the opportunities the heritage assets provides to strengthen the region through a single coherent awareness program.

3.2 Strategies for the near future

(1) To identify and evaluate the landscape and cultural heritage in a coherent way with a view to fully understand its outstanding international value.

(2) To apply the international and national legal instruments for the conservation, management and sustainable use of the heritage in a coordinated way for the coherent management of the heritage across the Region.

(3) To integrate the landscape and cultural heritage of the Wadden Sea Region within spatial planning on a national, regional and local level that corresponds to its unique

Figure 5:
Megalith grave (Photo Jan-
Joost Assendorp)



qualities. Using planning to strengthen the spatial qualities of the landscape and its cultural historic elements in order to support the regional development of the land-sea interface.

(4) To develop appropriate landscape assessment tools in order to better understand the various values of the landscape character and to provide support in decision making.

(5) To increase the awareness of the heritage and landscape assets among all relevant politicians, organizations, the regional and local public, also through the empowerment of the local communities and within an international context.

(6) To improve the work with the cultural heritage in the Wadden Sea Region on an international level. This includes trans-national cross border co-operation to work with cultural values and create awareness of the Wadden Sea Region.

In this respect, the experience from nature protection can be used.

(7) To create added value for the Wadden Sea Region regarding ensuring and promoting the common cultural history, particularly with the support of public institutions.

(8) Exchanging information by the utilisation of modern communication techniques. Spatial planning, as well as the evaluation of potentials and assets e.g. by nature conservation and cultural heritage management, require the information stored in different databases and GIS-systems in order to produce results integrating all issues. Harmonisation, interfaces and mutual platforms and formats are therefore essential tools.

(9) Implementation of suitable financial instruments and adaptation of existing funds to the requirements of integrated landscape management.

4. Conclusions

Figure 6:
Church on dwelling mound,
Zetel, Lower Saxony (Photo
Henning Haßmann)



There is no doubt that the Wadden Sea Region is a jewel with its unique character and quality of the cultural heritage and historic landscape. The adoption and implementation of the strategy will be a major step forward in the protection and management of this unique resource. As part of this implementation it will be essential to widen the understanding of the cultural heritage amongst people that live in or visit the region, whilst also making the strategy an integrated part of planning and conservation management at national, regional and local level.

5. Literature

Abrahamse, J. (Ed.), 1976. Waddenzee, natuurgebied van Nederland, Duitsland en Denemarken, Harlingen.

Oost, A.P., 1995. Dynamics and sedimentary development of the Dutch Wadden Sea with emphasis on the Frisian Inlet, Utrecht, 1995.

Schrader, E., 1970, Die Landschaften Niedersachsen. Ein topographischer Atlas, Wachholtz Neumünster.

Schiermonnikoog Declaration, 2005. Ministerial Declaration of the Tenth Trilateral Governmental Conference on the Protection of the Wadden Sea. Schiermonnikoog, 3 November 2005.

Schroor, Meindert, 1993. De wereld van het Friese landschap, Groningen.

Schroor, Meindert & Jan Meijering, Golden Raand., 2007. Landschappen van Groningen, Assen.

Vollmer, M., Guldborg, M., Maluck, M., Marrewijk, D. & Schlicksbier, G., 2001. Lancewad. Landscape and Cultural Heritage in the Wadden Sea Region. Project Report, Wadden Sea Ecosystem No. 12, Common Wadden Sea Secretariat, Wilhelmshaven.

LancewadPlan Strategy 2007. The Wadden Sea Region: A Living Historic Landscape. An integrated strategy to preserve, maintain and develop the cultural landscape and heritage in the Wadden Sea Region. <http://www.lancewadplan.org/>

Jong, F.de, Bakker, J., Berkel, C. van, Dahl, K., Dankers, N., Gätje, C., Marencic, H., Potel, P., 1999. Wadden Sea Quality Status Report 1999, Wadden Sea Ecosystem No. 9, Common Wadden Sea Secretariat, Wilhelmshaven.

